The establishment of baseline data on the rates and processes of soft-tissue decomposition in two terrestrial habitats of the Western Cape, South Africa

By

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Abstract

Estimation of the post-mortem interval is an oft-sought outcome of forensic death investigations. This requires knowledge of the local environment and how it affects soft-tissue decomposition. Such knowledge is usually informed by locally-obtained data regarding decomposition. However, no such data exist for the Western Cape, South Africa. The proposed study therefore principally sought to establish baseline data on the rates and processes of soft-tissue decomposition in the Western Cape. Two habitats, representing open and heavily shaded (~covered) conditions and characteristic of those from which forensic cases are derived in the Western Cape's largest city, Cape Town, were chosen for investigation. Sixteen porcine carcasses serving as analogues for adult human bodies were deployed in these habitats during two summers and two winters between 2014 and 2016. Progression of decomposition was tracked by recording weight loss over time and scoring the carcasses using Megyesi et al.'s (2005) Total Body Score system. Simultaneously, data were gathered on the physical and biotic agents of decay, including prevailing weather conditions and necrophagic faunal activity. These measures were assessed for differences when comparing habitats and seasons, and possible correlations between them were investigated. Carcasses decomposed almost twice as fast in summer compared to winter, but no significant difference was found between habitats within-season. Summer decomposition was marked by precocious natural mummification via desiccation – the first records of this preservative process in intact remains in any temperate climate globally. The first successional patterns for necrophagic insects in the Western Cape were established. The presence of the blow fly *Calliphora vicina* on decomposing remains represent the first records of this species in the Western Cape since 1976, and confirms its local forensic significance. An unexpected finding was extensive scavenging by Cape grey mongoose (*Galeralla pulverulenta*), predominantly in the covered habitat, heretofore unreported. These observations, amongst others, confirm the biogeographic uniqueness of decomposition in the Western Cape. This emphasises the importance of furthering our understanding of the local decomposition ecosystem, chief amongst these confirming the taphonomic processes driving precocious natural mummification and determining the taphonomic influence of scavenging in Cape Town.

Dedication

"The dead cannot cry out for justice. It is a duty of the living to do so for them."
– Lois McMaster Bujold

This work is dedicated to those who have been lost to history. May it help us to do better, that no one else should pass from this Earth without their identity – their dignity.

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List of Abbreviations

ADD = Accumulated Degree Days

ADD@TBS19 = Accumulated Degree Days at Total Body Score 19

ADD@TBS27 = Accumulated Degree Days at Total Body Score 27

ADD@EoT = Accumulated Degree Days at End of Trial

ADH = Accumulated Degree Hours

ANOVA = Analysis of Variance

CFDS = Cape Flats Dune Strandveld (habitat)

CFDS/O = Cape Flats Dune Strandveld (open)

CFDS/C = Cape Flats Dune Strandveld (closed)

DoH = Department of Health (of South Africa)

DTR = Diurnal Temperature Range (difference between the minimum and maximum ambient temperature on any specific day [24hr period]

FA = Forensic Anthropology/Anthropologist

FABF = Forensic Anthropology Body Farm

FARC = Forensic Anthropology Research Centre

FE = Forensic Entomology/Entomologist

FHS AEC = Faculty of Health Sciences Animal Ethics Committee

FPO = Forensic Pathology Officer

FPS = Forensic Pathology Service (of South Africa)

FSL = Forensic Science Laboratory (SAPS)

I/O = Investigating Officer

NGO = Non-governmental Organisation

PBI = Post-burial Interval

PMI = Post-mortem Interval

PMI$_{min}$ = Minimum post-mortem interval

PMI$_{max}$ = Minimum post-mortem interval

RH = Relative Humidity

SAPS = South African Police Service

SAWS = South African Weather Service

SR = Species Richness

TA = Total Abundance

TBS = Total Body Score

TT25% = Time (in 24hr days) to 25% weight loss

TT50% = Time (in 24hr days) to 50% weight loss

TT75% = Time (in 24hr days) to 75% weight loss

TT-TBS6 = Time (in 24hr days) to Total Body Score 6

TT-TBS19 = Time (in 24hr days) to Total Body Score 19

TT-TBS27 = Time (in 24hr days) to Total Body Score 27

TTS = Time to skeletonisation

UCT = University of Cape Town

UFS = University of the Free State

UP = University of Pretoria

USA = United States of America

VFA = Volatile Fatty Acid

VIC = Victim Identification Centre (SAPS FSL)

VOC = Volatile Organic Compound

Wits = University of the Witwatersrand

Chapter 1
Introduction & Literature Review

"Show me the manner in which a nation or community cares for its dead and I will measure, with mathematical exactness, the tender mercies of its people, their respect for the law of the land and their loyalties to high ideals."

– William E. Gladstone

CONTEXT AND BACKGROUND

Management of the dead is one of the foundational responsibilities of civil government, and a primary humanitarian duty. A core component of this is the identification of all human remains, regardless of the preservation state thereof, or the circumstances which brought about their death. Knowledge of identity, not only of individuals, but of their familial grouping, is an integral element of population administration, underpinning almost all other governmental activities and initiatives. It facilitates the civil and social processes which occur following an individual's death (Cattaneo et al., 2010), and, in instances where the fatality is linked to criminal negligence or intent, the legal processes for the dispensation of justice. Perhaps most importantly, all of our fundamental human and civilian rights flow from having a recognised identity (da Silva et al., 2009). Although mourning the dead is not unique to human beings, to our knowledge, no other species places as much emphasis on- or dedicates as many resources and as much energy to this process. Every human being has the right to bury their loved ones with respect and dignity (Cattaneo et al., 2010; Evert, 2011), and no one deserves to die in obscurity. Without an identity, none of this is possible (Cattaneo et al., 2010). Correct identification of the dead thus has considerable ethical, legal, civil, and social ramifications which imbues tremendous importance on its implementation (da Silva et al., 2009; Cattaneo et al., 2010).

In this context, most countries have developed legal frameworks and protocols for medico-legal investigations of deaths, natural and unnatural (Evert, 2011). In South Africa, this takes the form of the Inquests Act (No. 58 of 1959, as amended, 1996), which defines unnatural deaths according to any of the following:

- (i) due to physical or chemical influence, direct or indirect, or related complications;
- (ii) that has been the result of an act of omission or commission which may be criminal in nature;
- (iii) where death is sudden and unexpected, or where the cause of death is not apparent; or

(iv) any death whilst under the influence of local or general anaesthetic.

Following the unnatural death of any individual, the South African Police Service (SAPS) opens an inquest (medico-legal investigation) into the death and refers the remains to the Forensic Pathology Service (FPS), under the authority of the national Department of Health (DoH), for post-mortem examination and laboratory analyses of tissues and/or associated evidence of interest. The purpose of this two-party inquest is to:

(i) determine the cause of death;
(ii) ascertain the date of death;
(iii) determine whether the death was due to an act of omission or commission; and
(iv) establish the identity of the deceased (Inquests Act, No. 58 of 1959*,* as amended, 2013: Clause 16).

Despite the efforts of investigating officers (I/O's) and forensic practitioners in this regard, many bodies remain unidentified. As far back as 1998, even before unnatural deaths had been legally defined in South Africa (Lerer & Kugel, 1998), this issue was highlighted as cause for concern. Lerer and Kugel (1998) undertook an investigation into delays in the identification of people who had suffered what they termed "non-natural mortality" at the City of Cape Town's largest state mortuary, the Salt River Medico-legal Laboratory. They analysed autopsy data from 1980 to 1995 and found that an annual mean of 137 cases remained unidentified – over 2,000 bodies – and Salt River is only one of 18 medico-legal laboratories in the province (Western Cape Government, 2017), out of nine provinces nationally. The issue has not resolved with time. In 2015, it was reported that as many as 1,272 bodies remained unidentified in the state mortuaries of the Gauteng province – South Africa's financial hub. In 2013-14 that number was 1,254; in 2012-13, 1,603; and in 2010-11, 1,445 (City Press, 2010; Mabotja, 2015). This translates to an average of one in 10 people passing through Gauteng's medico-legal system annually, with three new unidentified cases added to the list every day (Wild, 2017). Official contemporary statistics for the other provinces are hard to come by (Wild, 2017), but forensic case experience shows that the situation is just as serious. Why is this the case?

Wild (2017) conducted a journalistic investigation into this very problem. Interviews with various forensic practitioners, DoH-, SAPS-, and Non-Governmental Organisation (NGO) officials reveal an under-resourced and over-burdened medico-legal fraternity functioning in a system burgeoning under a crushing case load. Of the deaths registered in the country for 2015 (460,236), unnatural (or non-natural) deaths constituted 11.1% (51,227 individuals) (Statistics South Africa, 2016). Of these, 18,673 (36%) were murders, translating to 34.27 people for every 100,000 – the 8th highest murder rate in the world (UNODC, 2015). In the 2018, the number of people murdered increased to 20,336 people – 57 per day (SAPS, 2018). As alarming as these numbers may be, they represent less than 1% of the average two million crimes the SAPS deal with annually (SAPS, 2018). As Wild (2017) articulates, "…the police have to choose between chasing criminals or identifying mouldering corpses." Dr Candice Hansmeyer, a forensic pathologist at the largest medico-legal laboratory in Gauteng and one of the interviewees, echoes her sentiments: "The priority [for the police] is the living…You're also dealing with burnout and fatigue among the police: there aren't enough hours in the day, and days in the year to get around to doing everything. One has to prioritise," (Wild, 2017).

Other complications contribute to this problem, many shared with other countries (da Silva et al., 2009; Cattaneo et al., 2010, 2015; Evert, 2011; Kovras & Robins, 2016; Piscitelli et al., 2016): Lack of context, either by virtue of the nature of cases, or because of poor documentation of the scene, is often the first stumbling block. In a similar vein, but more common and particularly inhibitory to the investigative process, is absence of comparative antemortem and post-mortem data. The former (~antemortem) is a multifactorial issue. Rural and disadvantaged populations, especially in developing countries such as South Africa, frequently lack medical and dental records, in part due to their limited access to such services. Incomplete or incorrect documentation of the population results in "ghost citizens" – people for whom the government has no record of existing in the country. This is exacerbated by illegal immigration – an increasingly prevalent occurrence globally (Cattaneo et al., 2010, 2015; Evert, 2011; L'Abbé & Steyn, 2012; Kovras & Robins, 2016; Piscitelli et al., 2016; Wild, 2017). Many countries have either failed to set up reference missing person databases against which unidentified remains may be compared, or, as in the case of South Africa, the systems to facilitate this process (Naidoo, 2007; da Silva et al., 2009; Cattaneo et al., 2010).

A lack of post-mortem comparative data may originate in cases wherein identifying features of the remains are obscured or missing, for example through decomposition, skeletonisation, or burning (Evert, 2011). Such cases are particularly challenging to solve. The problem is laid bare as Wild (2017) proposes the following scenario to an anonymous senior SAPS official: "Sometimes a passerby [sic] discovers a decomposed or burnt body in the veld [open, uncultivated country or grassland], with no identity documents. Time and weather have transformed their clothes into unrecognisable tatters." The official's "tired" response says it all: "Where do you start?...We take the body to the mortuary, and if no one comes to claim them, we bury them." This is the daily reality in South Africa, and, without intervention, it will get worse. The citizens of this country still bear the emotional scars of the past injustices of the Apartheid government-ordered and government-sanctioned disappearance of people labelled as enemies of the State. Many died in obscurity and were buried in unmarked graves; their memories and legacies erased from history and their families and friends left to wonder what became of their loved ones. Following the end of Apartheid, the government poured extensive resources into the rectification of injustices such as these. A prime example is the work conducted by the Missing Persons Task Team – a group of experts established to locate, identify, and repatriate the remains of people the Apartheid government had tried to make disappear. It is therefore inconceivable that, less than two decades later, the country faces an even greater number of unidentified victims of unjust actions at the hands of their fellow countrymen. It is in this setting that specialist forensic investigators from the fields of Forensic Anthropology and Forensic Entomology have the potential to make a real difference.

Establishing identity in a forensic death investigation requires the marriage of antemortem information about a known missing individual with evidence derived from analysis of the unknown remains (Naidoo, 2007; Evert, 2011). When identification via conventional means is not possible such as in the situations proposed above, a forensic anthropologist (FA) – an expert in biological anthropology and human skeletal biology – may be called upon to develop a profile of the life of the individual represented by the remains in question (Pinheiro, 2006; Dirkmaat et al., 2008). This is achieved through the derivation of information on sex, age at death, ancestry, stature at death, and distinguishing osteobiographic traits such as signs of disease, pathology, or trauma (Dirkmaat et al., 2008; Ousley, Jantz & Freid, 2009). Contemporarily, this role has been extended to consideration of the specific circumstances of the individual's death and post-mortem alteration of the body (Dirkmaat et al., 2008). Such information may inform other oft-sought outcomes of the investigation, including determination of the cause and manner of death, reconstruction of the original position and orientation of the body, characterisation of the role played by human intervention on the remains, and, importantly, the post-mortem or post-burial interval (PMI/PBI) which reflects time since death (Carter, Yellowlees & Tibbett, 2007). The importance of the latter is highlighted given its facilitative role in the identification process, specifically in the reduction of the pool of potential decedents (Galloway et al., 1989; Megyesi, Nawrocki & Haskell, 2005; Cameron, 2016).

A forensic entomologist (FE) may offer additional assistance in this regard. Forensic entomology is a branch of forensic science which utilises knowledge of insect populations and their lifecycles to inform key aspects of human and wildlife medico-legal investigations (Amendt et al., 2007; Gennard, 2007). Chief amongst these is the PMI, the determination of which forensic entomology is principally employed for (Greenberg & Kunich, 2002; Amendt, Krettek & Zehner, 2004; Gennard, 2007). Estimating the PMI is, however, no simple task, and requires, at the first, a fundamental understanding of the taphonomy of a body; that is, the physical and biological processes underpinning degradation/decomposition and preservation of decaying organic matter (Pinheiro, 2006).

TAPHONOMY OF THE BODY

Soft-tissue decomposition is a complex, but largely predictable, continuous process (Megyesi, Nawrocki & Haskell, 2005; Adlam & Simmons, 2007). Traditionally, it has been divided into stages or categories based on observations of soft-tissue changes (Campobasso, Di Vella & Introna, 2001; Goff, 2009). At the broadest level, it may be divided into two stages: pre-, and post-skeletonisation (Vass et al., 1992). Pre-skeletonisation may be further divided into sub-categories or stages. The number of stages described has varied from as few as two to as many as nine since the concept was first employed by Mégnin in 1894 (Payne, 1965; Goff, 2009). The variation arises from the level of detail to which decompositional changes are described, and the timescale covered. The general convention, however, is four stages: fresh, bloat, active decay (or putrefaction), and advanced decay (or dry) (Reed, 1958; Rodriguez & Bass, 1983; Braack, 1986). Some researchers combine the bloat and active stages into a single category: early decomposition (e.g. Galloway et al., 1989; Megyesi, Nawrocki & Haskell, 2005). It should be noted that although these stages are discrete in their descriptive nature, there is overlap between them given that decomposition is a *continuum* of physical, chemical, and biological changes (Tabor, 2004). Moreover, decomposition of the body is not uniform and one region may present with a different stage compared to another (Megyesi, Nawrocki & Haskell, 2005), hence the importance of holistic, rather than regionally-specific interpretation. One may argue that such subjective, qualitative assessment holds little scientific value. However, the merit lies in the practicality of conveying the complexities of decay and facilitating general decompositional timeline comparisons – key to establishing a global understanding of this process.

Decomposition begins shortly after death. With the cessation of breathing and heart function (clinical death), brain death, and, shortly thereafter, biological death (organ system failure) occurs (Mayer, 2012). A cascade of physical and chemical changes ensues which bring about the "classic triad" markers of the early post-mortem period: livor mortis/hypostasis (settling and discolouration of blood due to gravity), rigor mortis (stiffening of the muscles), and algor mortis (body cooling) (Clark, Worrell & Pless, 1997; Mayer, 2012). When all remaining oxygen supplies in the body's systems are exhausted, somatic (cellular) death ensues. The body's cells enter a self-destructive, aseptic process known as autolysis, whereby endogenous enzymic activity dissolves the cellular structures and, ultimately, the cellular wall, spilling intracellular contents and nutrients into the interstitial space (Clark et al., 1997; Mayer, 2012). This is considered the start of decomposition.

Autolysis presents externally with desquamation (separation of the epidermal and dermal skin layer) – also known as skin slippage – forming fluid-filled blisters (Pinheiro, 2006; Wilson-Taylor, 2013). The epidermal skin of the hands and feet frequently slip off entirely intact – like a glove – hence the commonly-used term "degloving". The scalp may slip off in similar fashion, yielding the "hair mat" (Wilson-Taylor, 2013). Intravascular haemolysis (autolysis of blood cells) and concomitantly increasing levels of deoxyhaemoglobin stain superficial blood vessels, giving rise to a "marbled" appearance of the skin (Clark et al. 1997; Pinheiro, 2006). Both skin slippage and marbling are considered amongst the first visible signs of active decay.

Internally, the release of intracellular nutrients facilitates proliferation of the now-unregulated intrinsic (principally intestinal) bacterial populations. Numerous gases are produced as a by-product of their feeding activity, the internal accumulation of which produces bloat of the abdomen, then head, and, later, the limbs (Pinheiro, 2006). One of these gases, hydrogen sulphide, reacts with haemoglobin in settled blood to produce the green-coloured compound, sulfhaemoglobin. Accumulation of sulfhaemoglobin yields the green discolouration of the abdomen which accompanies bloat, characterising early decomposition.

As internal pressure rises, decompositional fluids and gases purge out of the body's orifices. Chemical signals (semiochemicals) within these gases attract various fauna to the carcass, including flies (Order: Diptera), beetles (Order: Coleoptera), and mammalian and avian vertebrate scavengers (Vass et al., 2002). These animals, together with bacterial, enzymatic, and physical action, break down and remove the body's tissues, releasing the internal gases and bringing about collapse of the abdomen. This point usually marks the transition to active decay/putrefaction. It is in this stage, under the action of the decomposers, that the majority of the body's biomass is lost, and typically proceeds to its end-point: skeletonisation. Several preservative processes may, however, hinder or entirely prevent this state from being reached (Campobasso, Di Vella & Introna, 2001).

The key to preservation is cessation of the decay process through termination and/or exclusion of the biotic agents of decomposition (Lynnerup, 2007). This may be achieved naturally or artificially via freezing, anaerobic/bactericidal conditions (e.g. bog/copper salt preservation, saponification), or desiccation. The latter, otherwise known as mummification, is one of the most common forms of preservation, especially in dry/arid environments (hot or cold). Mummified remains are characterised by desiccated, brittle skin shrunken over bony prominences. The skin is often adherent to the underlying bone – its creases and folds tough and fixed – and the body's internal tissues present differentially as wholly or partially mummified, putrefied, entirely absent, or with adipocere ("grave wax"), depending on the time since death (Pinheiro, 2006; Campobasso et al., 2009; Marella et al., 2013).

Preservation is favourable for identification purposes but is usually the exception rather than the norm. Preservative processes require specific environmental conditions, the combination and magnitude of which influence the degree and timing of preservation. The FA's ability to interpret this for the purposes of accurately estimating PMI hinges upon their understanding of the interplay of the physical and biotic environmental variables that encompass the dynamic ecosystem that is carrion decomposition, and how these affect the rate and process of decay (Campobasso, Di Vella & Introna, 2001).

CARRION ECOLOGY

CARRION AS AN ECOSYSTEM

Taphonomy, at its heart, is the study of an ecosystem. When the term was first coined in 1940, it was defined as "…the study of the transition of animal remains from the biosphere into the lithosphere," (Efremov, 1940:85). An animal carcass, replete with a variety of nutrients, represents a resource which is utilised by a wide array of micro- and macroscopic organisms. It serves as shelter, a breeding ground, a nursery, and, of course, a food source. Considering that a carcass comprises nearly 20% carbon, recycling of this element back into the biosphere is of paramount importance to numerous ecological processes (Putman, 1978; Carter, Yellowlees & Tibbett, 2007; Parmenter & Macmahon, 2009). It is the action of the decomposers, inclusive of bacteria and fungi, insects and vertebrates, which drives this process, alongside physical erosive mechanisms (Goff, 2009). Their activity (and, by extension, the rate of carcass degradation), in turn, is modulated by a plethora of intrinsic and extrinsic variables, summarised in Figure 1.1.

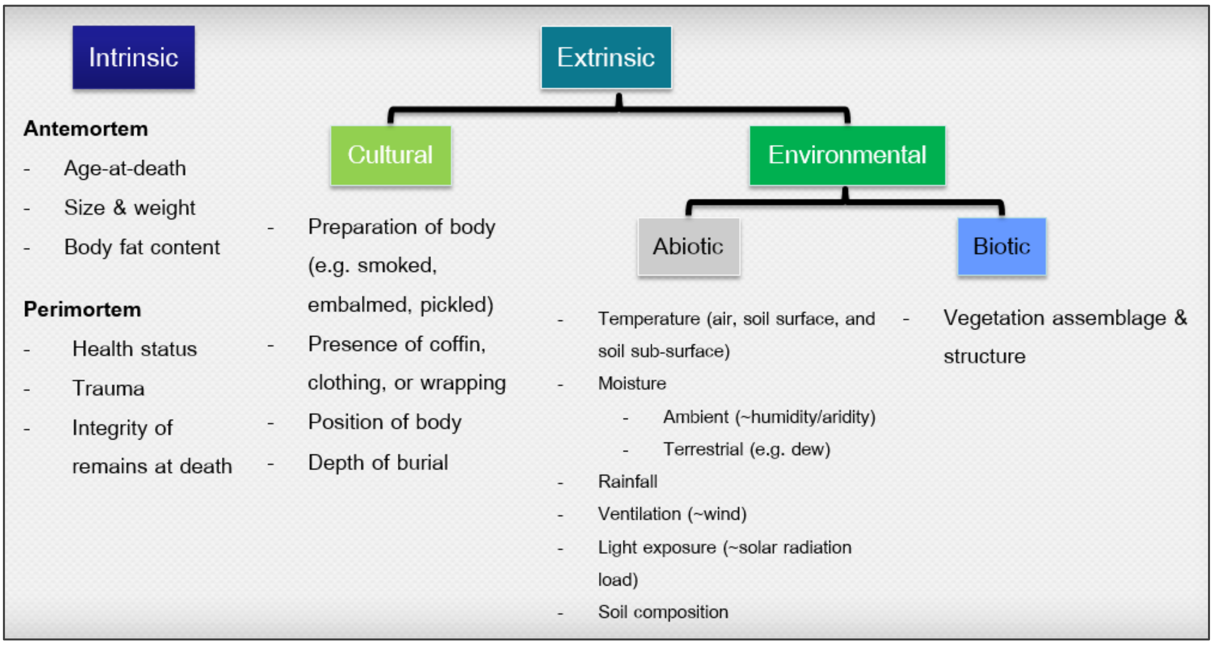


Figure 1.1: *Summary of intrinsic and extrinsic variables which may modulate decomposition and/or the activity of the biotic agents of decomposition.*

Factors affecting decomposition

Intrinsic variables

Intrinsic variables are those which come with the carcass going into decay. They may be antemortem (present and active before death), or perimortem (present and active around the time of death). Antemortem intrinsic variables include (i) age at death, (ii) size and weight, and (iii) fat content. It has been suggested that foetuses and new-borns decompose more slowly than older individuals (Campobasso, Di Vella & Introna, 2001), but physical size (and, thus, the proportionate amount of biomass to be degraded) will likely have a greater effect. With regards to body size, the overall rate of decomposition of larger individuals has been shown to be significantly slower than that of smaller, lighter individuals (Komar & Beattie, 1998; Campobasso, Di Vella & Introna, 2001; Sutherland et al., 2013; Matuszewski et al., 2014). Conversely, and, perhaps counter-intuitively, obese individuals may decompose more rapidly than leaner counterparts owing to a greater amount of tissue-based water which facilitates decomposition via bacterial action (Mann, Bass & Meadows, 1990; Campobasso, Di Vella & Introna, 2001).

Perimortem intrinsic variables include (iv) the cause of death, which speaks to health status and possible trauma, the latter affecting (v) the integrity of the remains (Campobasso, Di Vella & Introna, 2001). Death by disease or infection tends to bring about more rapid decay owing to the presence of larger, more diverse bacterial cohorts (Campobasso, Di Vella & Introna, 2001). The effect of trauma to the body on its decomposition has been the subject of study for many years, with variable results reported. Traditionally, penetrating trauma has been considered to have an accelerative effect on decomposition (Micozzi, 1986; Vass et al., 1992; Campobasso, Di Vella & Introna, 2001; Byrd & Castner, 2010; Wells & LaMotte, 2010). The origin of this opinion rests in the assumption that increased insect activity in and around wound sites increases the decomposition rate. This likely stems from the observations of Mann, Bass and Meadows (1990) who suggested gunshot trauma to a single case may have increased the rate of its decay based on increased insect activity at the wound site, although no quantitative data were reported to back this (Cross & Simmons, 2010). Contemporarily, this opinion has been subjected to more rigorous, quantitative study, the results of which have confirmed its erroneousness. The work of Kelly (2006), Cross and Simmons (2010), and Smith (2014) has indicated that, while penetrating trauma may influence the *pattern* of decomposition, no measurable increase in the rate of decomposition may be attributed to this variable alone.

Extrinsic variables

Extrinsic variables are those which come with the *context* of the remains and are inherently post-mortem in their occurrence and action. These may be divided into (I) cultural and (II) environmental extrinsic variables.

(I) Cultural

Cultural extrinsic variables which may affect decomposition include (i) preparation methods of the body (e.g. smoking, embalming, pickling, or mummifying); (ii) the presence of a coffin, clothing, or wrapping; and (iii) the manner and depth of burial (including body positioning). Preservative body preparation methods obviously serve to reduce or entirely cease decay, whilst the presence of a coffin, clothing, or wrappings may similarly hinder decomposition. All serve to reduce or exclude access by- and activity of the biological agents of decomposition, hence achieving the desired effect (Mann, Bass & Meadows, 1990; Goff, 1992; Kelly, van der Linde & Anderson, 2009). Burial acts in a similar manner, with increasing depth serving to slow decomposition via the process illustrated above, facilitated by a reduction in temperature and an increase in environmental moisture (Bachmann & Simmons, 2010).

(II) Environmental

Environmental extrinsic variables are the biggest external influencers of decomposition rate and pattern and comprise physical (abiotic) and biotic factors. The former include temperature, moisture (ambient or terrestrial), rainfall, ventilation, light exposure (infrared and ultraviolet), and soil composition (Rodriguez & Bass, 1983; Mann, Bass & Meadows, 1990; Campobasso, Di Vella & Introna, 2001). The latter comprise vegetation and the decomposers themselves.

It serves to note that, unlike intrinsic and extrinsic cultural variables, extrinsic environmental variables are not independent of one another, nor are their effects. Instead, they are inextricably linked within the decomposition ecosystem, a change in one (or more) effecting a change in others. It is true that some variables effect changes of a greater magnitude than others, but the effect of no single variable may be ascertained without consideration for the others. Take temperature as case-in-point:

Temperature has the ability to initiate, modulate, and terminate biochemical reactions and biological processes and activities – including those essential for life (Rodriguez & Bass, 1983; Mann, Bass & Meadows, 1990; Vass et al., 1992; Shean, Messinger & Papworth, 1993; Megyesi, Nawrocki & Haskell, 2005; Cameron, 2016).

Consequently, it has been repeatedly demonstrated to have the greatest contributing effect on decomposition of all physical factors. Higher temperatures are associated with an increase in the decomposition rate by promoting biotic-driven biomass removal. But, sustained, will ultimately serve to terminate such activity and promote preservation instead. This is especially true for the temperature-sensitive endogenous enzymes which drive internal decay, both directly through their own proteolytic activity, and the assistance they provide bacteria-driven decomposition (Aufderheide, 2011). Conversely, low temperatures are associated with a reduction in-, and, below the point of freezing, cessation of decay (Rodriguez & Bass, 1983; Micozzi, 1986; Mann, Bass & Meadows, 1990). But temperature alone does not account for the *entirety* of these effects. Ambient temperature is directly related to solar heat loading of the earth's surface, the rate of which is affected by latitude and season (i.e. incline of the sun and thus the amount of solar radiation reaching the earth's surface), substrate type and composition, the degree and type of vegetative covering, and the presence of any discernible bodies of water as a function of topography and rainfall. The rate at which the air heats up and cools down is further affected by its moisture content (ambient humidity and extent of cloud coverage) and its rate of movement (~wind speed), both of which are moderated by the former variables. Thus, all of these variables exert some degree of influence on the rate of decay, but it is the micro-environmentally unique combinations thereof that promote or hinder its progression.

The complexity and dynamism of the decomposition ecosystem is reinforced when considering that the decomposition process is not mediated directly by the extrinsic abiotic factors, but rather by their collective effects on the biotic component. Specifically, the rate of biomass removal is not only a function of the size and composition of the population of decomposing agents present in the environment, but also of fluctuations in the magnitude of individual species' activity. The prevailing climatic conditions (inclusive of changes in weather and physical environmental structure) influence both of these factors.

To understand this more completely, it is necessary to outline the general structure, composition, and temporal succession patterns of decomposer guilds. Goff (2009) highlights the four primary categories of decompositional organisms: bacteria, fungi/moulds, insects and acari (non-insect invertebrates), and vertebrate scavengers. The role of bacteria has already been sufficiently articulated for the scope of this study, and that of fungi and moulds is limited when considered alongside that of the insects and vertebrate scavengers. As such, only the latter two will be discussed in detail.

Insects

Given unhindered access, insects will arrive at a carcass within minutes of death (Smith, 1986; Anderson & VanLaerhoven, 1996; Dillon, 1997; Goff, 2009). The community that develops on, in, and under the remains presents with a definitive successional pattern that is a function of resource partitioning and is largely predictable (Schoenly & Reid, 1987). Taxonomically, this community predominantly comprises the flies (Order: Diptera) and the beetles (Order: Coleoptera), though individuals from the orders Hymenoptera (wasps and ants), Arachnida (spiders, scorpions, mites, and ticks), Blattaria (cockroaches), and Diplopoda (millipedes) may be present (Castner, 2010). These organisms may be divided into four distinct groups based on their feeding relationship: (i) the necrophages, which feed exclusively on decomposing tissue; (ii) predators (and parasites) of necrophages; (iii) omnivores, which consume both live insects inhabiting the remains and the decaying flesh itself; and (iv) opportunists (adventives), which arrive on the remains because it is part of their local environment (Goff, 1993). It is the former two which have the most profound effect on decomposition.

These "first responders", drawn by the bacteria-generated semiochemical signatures emanating from the orifices of the carcass, are generally true necrophages and come in the form of blow flies (Diptera: Calliphoridae), flesh flies (Diptera: Sarcophagidae), and house flies (Diptera: Muscidae). These families are considered primary decomposers; their larvae ("maggots") being among the first consumers of the flesh. Maggot activity may be so voracious, given the right conditions, that a carcass may be reduced to a near-skeletonised state in as little as two weeks (e.g. Davis & Goff, 2000), to the exclusion of other carrion consumers (Devault, Brisbin & Rhodes, 2004). However, the converse is true, and, should there be a delay in maggot colonisation, consumption of the carcass by scavengers may reduce the amount of biomass available for insects, adversely affecting their overall diversity and abundance (Dillon, 1997; Gill, 2005). Delays in maggot colonisation may be brought about by a variety of causes: inclement weather characterised by rain and high wind reduces or may even prevent adult blow fly activity on the remains, and, by extension, oviposition activity – giving rise to fewer, smaller maggot populations (Mann, Bass & Meadows, 1990; Kelly, 2006). An exception in this regard are Sarcophagids, which do not appear to be impeded by such conditions (Byrd &

Castner, 2010). Rainfall may also drown dipteran eggs and larvae, reducing populations (Anderson & VanLaerhoven, 1996). Thermal extremes may bring about mass egg and/or maggot mortality (Campobasso, Di Vella & Introna, 2001; Kelly, van der Linde & Anderson, 2009), and, if paired with low humidity, may desiccate the remains, reducing further oviposition activity (Lynnerup, 2007). The latter occurs because dry tissue is an inhospitable environment for desiccation-prone blow fly eggs and larvae, a fact recognised by female blow flies when selecting sights for oviposition (Campobasso, Di Vella & Introna, 2001). Maggot populations may also be diminished through the feeding activities of insectivores (O'Brien et al., 2010). A notable example in this regard is the cohort of second-wave colonisers of remains: carnivorous beetles.

Carnivorous beetles such as clown beetles (Coleoptera: Histeridae), rove beetles (Coleoptera: Staphylinidae), and burying beetles (Coleoptera: Silphidae) are predacious upon dipteran eggs, larvae and puparia, and, in some cases, their own larvae and puparia (Anderson & VanLaerhoven, 1996). Although these families usually arrive after maggot populations have become established, Silphids have been known to arrive very early in the decomposition cycle. Should they arrive in sufficient numbers, they can adversely affect the establishment of maggot populations and have a delaying effect on decomposition (Forbes & Dandour, 2010). Interestingly, this has been posited as a moderative, or, in extreme cases, eliminative mechanism of competition, one of several known strategies amongst various species from these families which employ them to protect the resource for their carrion-feeding larvae (Byrd & Castner, 2010).

As decomposition progresses, these families are joined-, and eventually succeeded by third wave colonisers in the form of hide beetles (Coleoptera: Dermestidae), chequered beetles (Coleoptera: Cleridae), skin beetles (Coleoptera: Trogidae), and cheese skippers (Diptera: Piophilidae) (Scholtz, 1986; Smith, 1986). The families are specialist feeders on desiccated tissues and are responsible for promotion of the carcass to skeletonisation under most circumstances. The Dermestids are particularly ravenous in this regard and, given the right conditions, may reduce the remains to a skeleton in as little as 24 days (Byrd & Castner, 2010).

The cumulative effect of insect feeding has been considered to be the most important factor influencing the rate of decomposition (Simmons, Adlam & Moffatt, 2010). However, there is another group of organisms which may effect skeletonisation quicker than any insect population: the vertebrate scavengers.

Vertebrate scavengers

By virtue of their size, terrestrial vertebrates have the potential to reduce a carcass to bone in a matter of hours. Evidence of this plays out on the African savannah regularly, where vultures, hyenas, and jackals, amongst others, are the principle agents in this regard. While these animals are perhaps the most internationally well-known scavengers, carrion feeding is common amongst many terrestrial vertebrates on every continent, and for good reason. As DeVault, Rhodes and Shivik (2003:226) point out, "…there is no advantage in passing on a free meal." Such is the evidence for widespread carrion utilization by carnivores that they argue that nearly all carnivorous vertebrates should be considered facultative scavengers.

The Western Cape lacks many of the medium and large carnivores present in other areas South Africa which theoretically might scavenge decomposing remains. Only the caracal (known locally as a Rooikat; *Caracal caracal*), the Cape leopard (*Panthera pardus*), the honey badger (*Mellivora capensis*), the Cape fox (*Vulpes chama*), and genets (Genetta spp.) persist in the Cape, but their distributions are confined to the sparsely inhabited rural and mountainous regions to the northeast and south of Cape Town. Within the urban areas of the Metropole, only stray dogs and cats, and possibly Chacma baboons (*Papio ursinus*) and pied crows (*Corvus albus*), are likely to scavenge decomposing remains.

There is substantial variation in the extent to which different species will utilise carrion, as well as the timing and duration of their feeding in the context of the decomposition timeline (DeVault, Rhodes & Shivik, 2003). However, the net outcome is always the same: rapid removal of carrion biomass can accelerate the decay process. Additionally, scavengers are responsible for the scatter of skeletal elements during the end-stages of decomposition, and this may confound recovery efforts in a forensic context, which may, in turn, hinder the identification process. The risk also exists of misinterpreting scavenger-induced damage to soft- and hard-tissues as peri- or post-mortem trauma. As such, consideration should always be given to the potential taphonomic effects of scavengers when evaluating decomposition for the purposes of estimating the PMI (Haglund, Reay & Swindler, 1988, 1989; Mann, Bass & Meadows, 1990; O'Brien et al., 2007).

POST-MORTEM INTERVAL AND ITS ESTIMATION

INTRODUCTION

The fields of forensic anthropology, forensic taphonomy, and forensic entomology have contemporarily experienced a shift towards developing PMI estimation methods that are more quantitative in nature, thus better-conforming to current evidentiary standards. But this has not made the task any easier. It is clear from the complexities illustrated in the previous section that PMI estimation is challenging to say the least (Buchan & Anderson, 2001). Such is the extent of the complexity that, to date, no one has developed a *fully inclusive* model/method that accurately predicts the PMI. Attempts have, instead, been made to develop a model or technique that captures a sufficient amount of the variation to determine a PMI that is correct within an acceptable margin of error. Models have been developed based on grave soil chemistry (Vass et al., 1992, 2002), in-body chemical changes and biochemical markers (Donaldson & Lamont, 2013), volatile organic compound (VOC) emissions (Paczkowski et al., 2015), skeletal disarticulation sequences (Haglund, Reay & Swindler, 1988, 1989), bone weathering (Behrensmeyer, 1978), temperature – more specifically the Accumulated Degree Days (ADD) method (Vass et al., 1992; Megyesi, Nawrocki & Haskell, 2005), and forensic entomological analysis (Anderson, 2010; Villet, Richards & Midgley, 2010). Although all have their merits, the latter two have gained the most traction in the scientific community and thus deserve special attention.

ACCUMULATED DEGREE DAYS

Despite its widespread contemporary usage, the concept of ADD is not new. Hayman and Oxenham (2017) chart its origins from the field of horticulture in 1960, into the realm of entomology as a means to assess insect development in the 1970s. As its name implies, ADD is a measure of thermal energy accumulated over time (in this case measured in 24-hour days). Its implementation is based on the aforementioned premise that temperature drives numerous biological processes, and that it takes a specific amount of heat energy to reach specific landmarks or stages in said processes. Thus, the progression of the process may be modelled as a function of the accumulation of heat energy over time. Statistically (and historically), the measure of heat energy was derived from the area under the sine curve of the thermograph, above a certain threshold (usually 0°C). However, this proved impractical and laborious for everyday usage and so a new method was developed to derive the necessary measure from the mean of the daily maximum and minimum temperatures (Baskerville & Emin, 1969). This is the method as it exists today.

Vass and colleagues (1992) recognised this method's potential for quantifiably measuring the rate of decay. They discovered a direct correlation exists between the stages of decay and the concentrations of volatile fatty acids (VFAs) – decompositional products that leach into the soil beneath the remains. Given that this process is temperature-dependent, they could use ADD to estimate the amount of time it took to reach a particular concentration of VFAs. Thus, the first ADD-based PMI estimation method was born. Despite the apparent value this method holds, it has never caught on in the mainstream forensic community. This is likely due to its heavy reliance on accurate thermal information from the crime scene (which is seldom available) and specific laboratory-based equipment which is not readily available in most circumstances (Cockle, 2013).

Further research into a quick, reliable method ensued and, 13 years later, a breakthrough occurred. Megyesi, Nawrocki and Haskell (2005) adapted the ADD principles to develop the first method of estimating PMI based on the visual state of decay. They created a scoring system which graded the physical changes a body proceeds through as it decays. The system provided for assignment of a score to each of three regions of the body: (1) the head, (2) the thorax, and (3) the limbs, given that, as previously noted, these may decay at different rates. Summation of the scores for these three regions yielded a Total Body Score (TBS). They implemented the scoring system on photographs from 68 forensic cases with known PMI and correlated the resultant TBS values with ADD data derived from the weather station closest to each case. The relationship between these variables was found to account for as much as 84% of the variation in decomposition. They were thus able to devise a regression equation into which one could plug a TBS value derived from any forensic case and generate an estimate of the ADD value that would have brought about that degree of decomposition. By comparing this value with thermal data from the weather station closest to the crime scene in question, working backwards from the date of discovery, one could theoretically estimate the PMI with a fair degree of accuracy.

Megyesi, Nawrocki and Haskell's (2005) paper revolutionised estimation of PMI, and extensive validation research has been conducted in the intervening years. As with all new models, several flaws were detected, and solutions developed to address them. Issues investigated include scoring from photographs versus on-site observations (Williams, Mundorff & Scott, 2015; Dabbs, Bytheway & Connor, 2017), the inter-rater reliability of the scoring methodology (Dabbs, Connor & Bytheway, 2016; Nawrocka, Frątczak & Matuszewski, 2016), the accuracy of the scoring system when implemented on animal models in research (Keough, Myburgh & Steyn, 2016), processing of thermal data sourced from weather stations (Dabbs, 2015), the statistical basis of the method (Moffatt, Simmons & Lynch-Aird, 2016), and addressing differences in accuracy introduced by regional (environmental) variation (Myburgh et al., 2013; Marhoff et al., 2016; Moffatt, Simmons & Lynch-Aird, 2016; Hayman & Oxenham, 2017). In short, the method has thus far survived the crucible of peer review and emerged stronger and more rigorous for it. But it requires continuous research to improve its accuracy and global applicability, especially where the effect of environmental variation is concerned (Cockle & Bell, 2017).

FORENSIC ENTOMOLOGICAL ANALYSIS

PMI estimation using forensic entomological techniques is primarily effected via two methods: (1) an analysis of the insect successional pattern, and (2) assessment of the insect developmental timelines (Goff, 1993).

(1) Succession

The first is based on the principle that insects colonise remains in a predictable fashion over time, specific to depositional circumstance (i.e. surface-deposited, buried, burned, immersed in water). Moreover, the cohort of colonising insects has a degree of regional and seasonal specificity (Goff, 1993; Gill, 2005). Thus, knowledge of the locally-relevant and forensically-significant taxa associated with decomposing remains and the timeline of their colonisation may be used to estimate the PMI (Buchan & Anderson, 2001). This may be achieved by comparing a sample of the insects taken from the remains at the time of recovery to a reference database of known colonising species derived from research, usually in the form of an occurrence matrix (Schoenly, Griest & Rhine, 1991; Schoenly, Goff & Early, 1992). As Goff (1993:90) articulates, "These comparisons will reveal time periods during which similar populations, both in terms of species composition and developmental stages, will occur in both the remains and the decomposition study," thus giving a broad indication of the PMI (i.e. with a resolution of weeks, as opposed to hours/days).

Of course, this requires knowledge on which species play a role in decomposition and may thus be of potential forensic importance. Species known to be forensically significant in the Western Cape include the blow flies *Chrysomya albiceps* (Diptera: Calliphoridae), *Chrysomya chloropyga* (Diptera: Calliphoridae), *Chrysomya marginalis* (née *C. regalis*) (Diptera: Calliphoridae), *Chrysomya megacephala* (Diptera: Calliphoridae), *Lucilia sericata* (Diptera: Calliphoridae)*, Lucilia cuprina* (Diptera: Calliphoridae), and *Calliphora croceipalpis* (Diptera: Calliphoridae), and the necrophagous beetles *Dermestes maculatus* (Coleoptera: Dermestidae), *Necrobia rufipes* (Coleoptera: Cleridae), *Thanatophillus micans* (Coleoptera: Silphidae), and *Thanatophilus mutilatus* (Coleoptera: Silphidae), amongst other minor species (Prins, 1979, 1980, 1982, 1983, 1984; Midgley, 2007; Richards, 2007; Williams, Richards & Villet, 2014). Recently, the European blow fly *Calliphora vicina* invaded South Africa. There is one published record of its occurrence in Cape Town, from 1976 (identified in 2004), with two specimens caught by Prins (Williams & Villet, 2006a). Accordingly, it's possible this species may still occur locally. The fly families Muscidae (Diptera), Sarcophagidae (Diptera), and Piophilidae (Diptera), and carrion-associated beetle families Histeridae (Coleoptera), Staphylinidae (Coleoptera), Scarabaeidae (Coleoptera), and Trogidae (Coleoptera) also include species which may be encountered in forensic scenarios in the Western Cape. Examples of these species and families are depicted in Figure 1.2.

(2) Developmental timelines

Estimation of PMI based on the developmental timelines of the species associated with the remains rests upon detailed knowledge of their lifecycles and the environmental variables which affect them. Most insects proceed through numerous stages, also known as stadia or instars, as they develop from egg through to adult. Forensically-relevant insects undergo complete metamorphosis, comprising four fundamental stadia: egg ➔ larva ➔ pupa ➔ adult (Castner, 2010:33).

The length of time an insect spends in each stage varies between species and under the influence of the environment in which they occur. As previously indicated, temperature has a significant role to play in this regard. Insects are ectothermic poikilotherms, meaning that not only do they derive their heat energy from the surrounding environment, they allow their body temperatures to fluctuate with environmental temperature. As a result, a strong positive relationship exists between temperature and the rate of insect development. The relationship exists because growth and development through stadia carries a cost, which may be expressed as a 'physiological development energy budget' (i.e. it requires 'X' amount of energy to grow 'X' percentage) (Gennard, 2007:118). As with decomposition, this budget can be expressed in ADD, or, for shorter periods of time, Accumulated Degree Hours (ADH). Traditionally, the relationship between temperature and insect development has been considered to be linear between the minimum and maximum thresholds of development (above and below which development will slow down and eventually stop at the point of death) (Gennard, 2007:116). As such, it is possible to determine developmental rates (in chronological time) at set temperatures in experimental contexts, yielding ADH/ADD values for development through respective stadia. Developmental data together with minimum developmental thresholds (known as base temperatures) have been established for many forensically-relevant species (see Kamal, 1958; Reiter, 1984; Greenberg, 1991; Wall, French & Morgan, 1992; Greenberg & Tantawi, 1993; Wells & Kurahashi, 1994; Davies & Ratcliffe, 1994; Byrd & Butler, 1997, 1998; Grassberger & Reiter, 2001; Greenberg & Kunich, 2002; Grassberger, Friedrich & Reiter, 2003; Richards, Paterson & Villet, 2008; Richards, Crous & Villet, 2009).

The premise for putting this into practice is that one would recover the oldest life stage from the remains for every species present, identified using relevant keys. One would determine, based on the published data (if available), what the corresponding ADH/ADD value is for that species to reach that life stage. From here on the process for determining the PMI is the same as for using ADD with decomposition. Recent research has demonstrated that the process is not as simple as this (see Higley, Haskell & Roe, 2014), but detailed knowledge thereof is not necessary for the scope of this project.

Flies (Diptera)

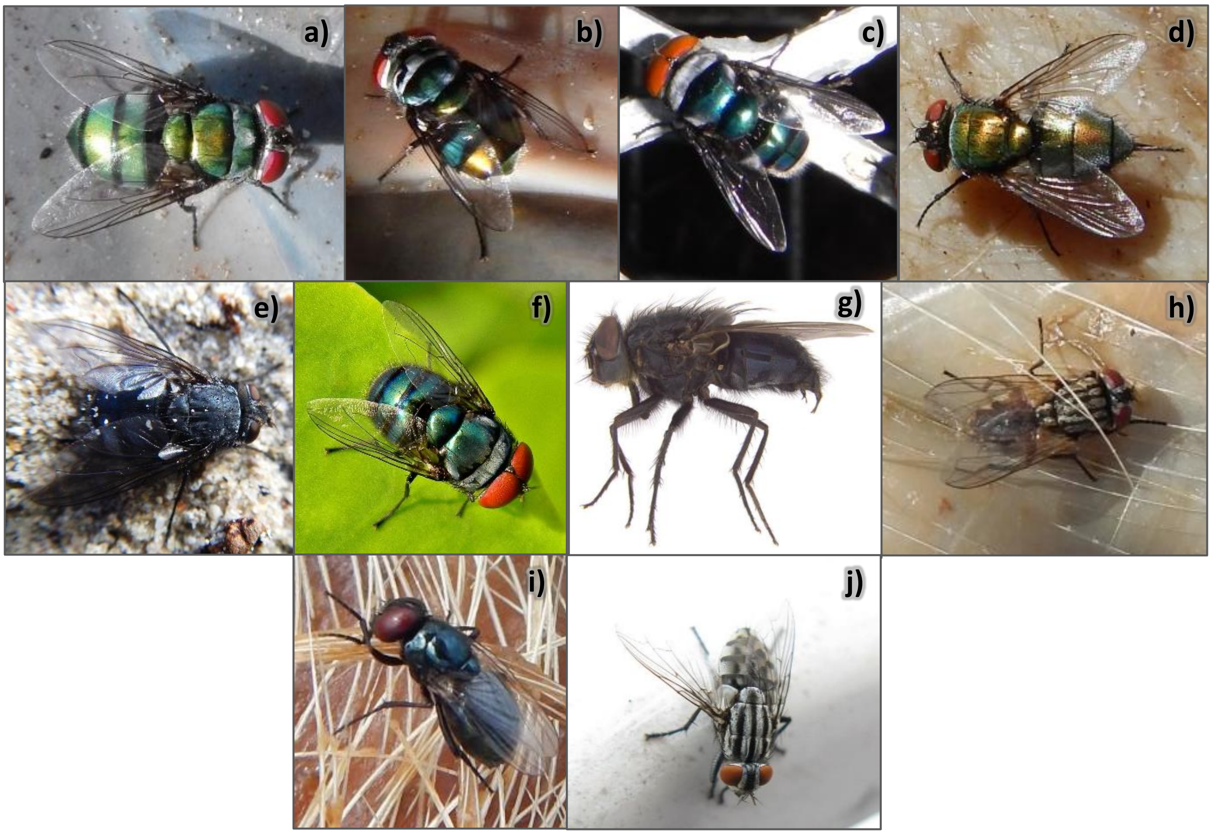


Figure 1.2: *Known forensically significant fly species and families in the Western Cape, South Africa.* ***(a)*** *Adult* Chrysomya albiceps *(Diptera: Calliphoridae)*; ***(b)*** *Adult* Chrysomya chloropyga *(Diptera: Calliphoridae);* ***(c)*** *Adult* Chrysomya marginalis *(Diptera: Calliphoridae);* ***(d)*** *Adult Lucilia spp. (Diptera: Calliphoridae);* ***(e)*** *Adult* Calliphora vicina *(Diptera: Calliphoridae);* ***(f)*** *Adult* Chrysomya megacephala *(Diptera) (Peterson, 2013)*; ***(g)*** *Adult* Calliphora croceipalpis *(Diptera) (Lutz et al., 2018)*; ***(h)*** *Adult Muscidae (Diptera);* ***(i)*** *Adult Piophilidae (Diptera);* ***(j)*** *Adult Sarcophagidae (Diptera) (Richfield, 2011).*

Beetles (Coleoptera)

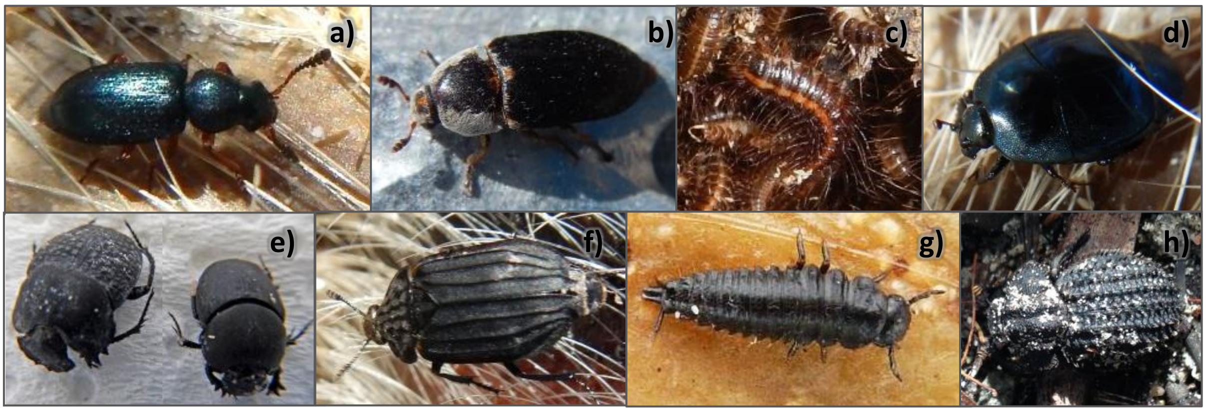


Figure 1.3: *Known forensically significant beetle species and families in the Western Cape, South Africa.* ***(a)*** *Adult* Necrobia rufipes *(Coleoptera: Cleridae);* ***(b)*** *Adult* Dermestes maculatus *(Coleoptera: Dermestidae);* ***(c)*** *Larval* Dermestes maculatus *(Coleoptera: Dermestidae);* ***(d)*** *Adult Histeridae (Coleoptera);* ***(e)*** *Adult Scarabaeidae (Coleoptera);* ***(f)*** *Adult Silphidae (Coleoptera);* ***(g)*** *Larval Silphidae (Coleoptera);* ***(h)*** *Adult Trogidae (Coleoptera).*

(3) Minimum Post-mortem Interval

It is important to note that forensic entomological analysis does not give an estimate of the actual PMI, but rather the *minimum* PMI (PMI_{min}). That is, the time between colonisation of the remains and termination of the life stage of the specimens used (which should, ideally, be immediately after removal from the remains). The difference between the PMI_{min}, the actual PMI, and the maximum PMI (PMI_{max}) is illustrated in Figure 1.3.

This is an important distinction to make as it affects what deductions may be made during the forensic death investigation, and forensic entomologists have a responsibility to clarify this with law enforcement. This said, of all the methods available to estimate PMI, forensic entomological analysis is arguably the most accurate and reliable, having been subjected to the most research (Buchan & Anderson, 2001). Contemporarily, it is entirely quantitative in nature, where even species identification is now achievable with DNA analysis (e.g. Harvey et al., 2003; Pickering et al., 2015). Thus, it goes the furthest to meeting the stringent contemporary evidentiary standards. It also enjoys a respectable track record, being successfully used in many cases over the years (e.g. Mann, Bass & Meadows, 1990; Goff, Charbonneau & Sullivan, 1991; Goff, 1991, 1992; Goff & Flynn, 1991; Anderson, 1997; Goff & Win, 1997; Anderson, 1999; Introna, Campobasso & Di Fazio, 1998; Benecke, 1998; Amendt et al., 2000; Stærkeby, 2001; Turchetto, Lafisca & Costantini, 2001; Benecke & Lessing, 2001; Anderson and Cervenka 2001; Benecke, Josephi & Zweihoff, 2004; Arnaldos et al., 2005; Vanin et al., 2008. Also see Williams & Villet, 2006a, for a summary of South African case studies). Its utility is thus considered to be the gold standard in PMI estimation at present. But, as with taphonomic PMI estimation using ADD, it requires continuous research and innovation to maintain and improve its standards of reliability. The next section summarises research efforts in this regard, with a focus on themes of study and experimental design.

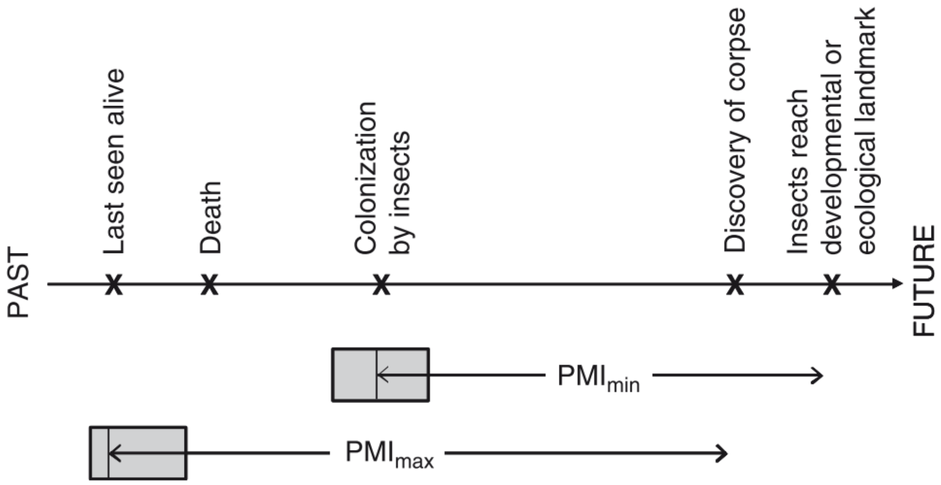


Figure 1.4: *Timeline (not to scale) of general events in a forensic death investigation. The maximum (PMI_{max}) and minimum (PMI_{min}) post-mortem intervals are indicated. The grey boxes represent the margin of error which may occur when making these estimates. Adapted from Villet, Richards and Midgley (2010:110).*

TAPHONOMIC AND FORENSIC ENTOMOLOGICAL RESEARCH

INTRODUCTION

The extent of the fields of forensic entomology and forensic taphonomy is quite clear. Spanning decades, a vast body of literature exists, documenting myriad themes and case reports. The following section seeks first to examine the methodology underpinning taphonomic and entomological research efforts. The purpose of this is two-fold: first, to lay the foundation for an understanding of the present study's experimental design; second, to facilitate later critical analysis and discussion of the present study's design in the context of the study findings and the literature.

A summary of taphonomic- and entomological research themes pertinent to the present study will follow, briefly recapping those already mentioned, highlighting those that haven't, and spotlighting current research efforts. Special attention will be given to South African taphonomic and entomological research, a review of which will illustrate the need for the present research.

STUDY DESIGN

All taphonomic and entomological research has been conducted using one of (or a combination of) two principle approaches: (1) experimental research (sometimes termed "actualistic research"), and (2) retrospective analysis of case studies.

Experimental research as we know it today has its origin in the parent field of taphonomy. It involves direct, longitudinal observation of human (and/or animal model) decomposition in a predetermined setting, with measurement of a specific range of variables dictated by the research question. Such observation and analysis may inform an understanding of decompositional processes in forensic scenarios, principally for the purpose of estimating PMI (Kowalewski & Labarbera, 2004; Spencer, 2013).

The first modern research of this kind was conducted by Reed (1958), wherein he observed the decomposition of dog carcasses in rural Tennessee, USA. His goal was to understand the structure and successional pattern of the insect populations colonising and consuming the carcasses, and how the local climate and environmental conditions might influence this. His landmark study laid the foundation for the design of all modern forensic taphonomic research, including those with entomological components. Similar studies investigating various aspects of the decomposition ecosystem soon followed (Payne, 1965; Payne & King, 1969; Behrensmeyer, 1978; Putman, 1978; Braack, 1981), but all lacked one key variable: human experimental subjects. It was only in 1983 that the first experimental study utilising human cadavers was published (Rodriguez & Bass, 1983), conducted at the newly-established Anthropological Research Facility at the University of Tennessee, popularly known as the "Body Farm". But, as Bass and his colleagues discovered, using human bodies for such research poses numerous ethical and logistical challenges. These have seen use of donated human bodies largely confined to the United States of America (USA), with only 7 facilities presently permitted their use (Killgrove, 2017), and only two other facilities worldwide able to utilise donated human remains: the Amsterdam Medical Center's taphonomical cemetery in Amsterdam, the Netherlands, and the Australian Facility for Taphonomic Experimental Research in Sydney, Australia. There are several other logistical issues inherent with experimental research: the detailed nature of these studies carries a considerable financial, time, and labour cost; and given its nature, the research should preferably be remotely (and securely) located, a challenging task for research institutions based in large cities which may push up experimental costs. These two issues tend to restrict sample sizes, hindering robust statistical testing of experimental results. In an effort to mitigate against these by reducing the scope of the research, one risks oversimplifying analysis of the natural decomposition ecosystem through reduction of the number of variables under observation or introducing patterns that would not occur naturally. For example, the exclusion of all forms of scavenging could slow the rate of decay and change the diversity and successional pattern of insects observed on the remains (Haglund & Sorg, 1997). If one is able to overcome these challenges, experimental studies enable scientific testing of inferences and observations made in case studies. However, it must always be borne in mind that the data generated are not "ground truth data", but inferred, and thus direct deductions and extrapolations cannot be made.

Should circumstances not permit experimental study, taphonomic research may be accomplished via cross-sectional retrospective analysis of actual forensic cases (Cameron, 2016). Such analysis has the advantage of accurately capturing real forensic processes and scenarios and is considerably cheaper (on all accounts) to conduct compared to its experimental counterpart. However, it comes with its own cohort of logistical challenges. Chief amongst these is access to the relevant information from law enforcement and/or medical examiner offices (such as FPS in South Africa), given the sensitivity and confidentiality of such information (Cockle, 2013). South Africa has a considerable problem in this regard, as illustrated earlier with the difficulty experienced in sourcing accurate numbers of unidentified individuals, let alone complete case histories. This issue is exacerbated by incomplete or poorly completed records at numerous FPS facilities, and the disconnect between the investigative levels of the forensic death investigation, which seldom sees case resolution information passed on to the forensic practitioners who contributed to the investigation. Even if such information is accessible, the method, like experimental studies, may suffer from low sample sizes. Most retrospective analyses have a sample size less than five (see examples listed under the ***Developmental Timelines*** sub-section). Several large reviews do exist, ranging in size from 29 to 233 cases covering both land- and water-based circumstances, summarised by Cockle (2013). Her review, however, stands head and shoulders above the others, totalling 358 cases. Despite the thoroughness of her investigation, she acknowledges that the biggest limitation to her research – one that is common to all retrospective analyses – is that each case provides just a snapshot of the decomposition system (Cockle, 2013). Such is the variation of decompositional circumstances that a full picture cannot be formed without analysis of the entire system *within* a specific circumstance, with cataloguing of the entire process from beginning to end (Cockle, 2013; Cameron, 2016). Compounding this is that retrospective analyses are limited to the variables recorded by the investigators of the case, and the accuracy thereof (Cockle, 2013). As such, experimental studies investigating the themes summarised below pair well with retrospective case analyses.

THEMES STUDIED

The rapid proliferation of forensic taphonomic and entomological research from the 1970s onwards has seen soft-tissue decomposition in every conceivable circumstance investigated. Themes pertinent to the present study which are covered by this body of literature are summarised in Table 1.1.

Table 1.1: Summary of taphonomic research themes.

Ecoregions	
- Arid	Schoenly, 1983; Galloway et al., 1989; Brown, Field & Letnic, 2006; Munkres, 2009.
- Temperate	Reed, 1958; Payne, 1965; Putman, 1978; Mann, Bass & Meadows, 1990; Vass et al., 1992; Tantawi et al., 1996; Centeno, Maldonado & Oliva, 2002; Archer, 2004; Prieto, Magaña & Ubelaker, 2004; Tabor, 2004; Tabor, Brewster & Fell, 2004; Tabor, Fell & Brewster, 2005; Megyesi, Nawrocki & Haskell, 2005; Eberhardt & Elliot, 2008; Schotsmans et al., 2011; Spicka et al., 2011; Cameron & Oxenham, 2012; Sutherland et al., 2013; Cockle, 2013; Myburgh et al., 2013; Hayman & Oxenham, 2017; Marais-Werner, Myburgh, Becker, et al., 2017.
- Mediterranean	Martínez-Sánchez, Rojo & Marcos-García, 2000; Arnaldos et al., 2001, 2004, 2005; Prieto, Magaña & Ubelaker, 2004; Statheropoulos, Spiliopoulou & Agapiou, 2005; Velásquez et al., 2010; Ferreira & Cunha, 2013.
Shade vs. sun (~sheltered vs. unsheltered OR covered vs. uncovered)	Shean, Messinger & Papworth, 1993; de Souza & Linhares, 1997; Komar & Beattie, 1998; Lopes de Carvalho & Linhares, 2001; Centeno, Maldonado & Oliva, 2002; Sharanowski, Walker & Anderson, 2008; Battán Horenstein, Rosso & García, 2012; Majola, Kelly & van der Linde, 2013; Caballero & León-Cortés, 2014.
Environmental effects	
- Climatic variables	Mann, Bass & Meadows, 1990; Archer, 2004; Walker & Miller, 2005; Battán Horenstein & Peretti, 2011; Zhou & Byard, 2011; Spencer, 2013; Batista-da-Silva, 2014; Mohr & Tomberlin, 2014; Parry, Mansell & Weldon, 2016; Cockle & Bell, 2017.
- Trauma	Mann, Bass & Meadows, 1990; Kelly, 2006; Cross & Simmons, 2010; Smith, 2014.

- Scavenging	Haglund, Reay & Swindler, 1988, 1989; Nation & Williams, 1989; Carson, Stefan & Powell, 2000; Bumann & Stauffer, 2002; Brown, Field & Letnic, 2006; Morton & Lord, 2006; O'Brien et al., 2007, 2010; Reeves, 2009; Moraitis & Spiliopoulou, 2010; Cameron & Oxenham, 2012; Ricketts, 2013; Young et al., 2014, 2015; Cantu, 2014; Smith, 2015; Synstelien, 2015; O'Brien, Appleton & Forbes, 2016; Jeong, Jantz & Smith, 2016; Spies, Finaughty & Gibbon, 2018; Spies, Gibbon & Finaughty, 2018.
- Invertebrates (presence/absence	Payne, 1965; Bachmann & Simmons, 2010; Simmons, Adlam & Moffatt, 2010.
Experimental effects	
- Carcass disturbance	Adlam & Simmons, 2007.
- Carcass size	Komar & Beattie, 1998; Morton & Lord, 2006; Simmons, Adlam & Moffatt, 2010; Spicka et al., 2011; Sutherland et al., 2013; Matuszewski et al., 2014.
- Use of animal models	Catts and Haskell, 1990; Catts and Goff, 1992; Campobasso, Di Vella & Introna, 2001; Anderson & Hobischak, 2004; Schoenly et al., 2007; Byrd & Castner, 2010; Stokes, Forbes & Tibbett, 2013.
Development of PMI estimation techniques	Behrensmeyer, 1978; Haglund, Reay & Swindler, 1988, 1989; Schoenly, Goff & Early, 1992; Vass et al., 1992, 2002; Allaire, 2002; Arnaldos et al., 2005; Megyesi, Nawrocki & Haskell, 2005; Zehner, Mösch & Amendt, 2006; Voss, Spafford & Dadour, 2009; Vass, 2011; Michaud & Moreau, 2011; Donaldson & Lamont, 2013; Myburgh et al., 2013; Cockle & Bell, 2015; Paczkowski et al., 2015.

Most of these themes have already be dealt with to some degree; others require further explanation. Specifically, attention is drawn to two contentious issues in the literature: (1) the use of animal models as proxies for humans in taphonomic research, and (2) the influence of carcass size.

(1) Animal models

As has already been explained, forensic taphonomic and entomological research using human cadavers is limited globally due to the ethical and logistical challenges associated with their use. Many animal species have served in their place, including birds (Arnaldos et al., 2001; Marchenko, 2001), cats (Marchenko, 2001), dogs (Reed, 1958), impala (Braack, 1981, 1986), kangaroos (Forbes, Dent & Stuart, 2005), moles (Marchenko, 2001), rabbits (Chapman & Sankey, 1955; Tantawi et al., 1996; Marchenko, 2001; Adlam & Simmons, 2007; Bachmann & Simmons, 2010), and rats (Kočárek, 2003), among others. But by far the most popular model is the domestic pig (*Sus scrofa domesticus*), with most of the research previously referred to making use of these animals. Internationally considered to be appropriate models for human decay (Catts & Goff, 1992), the preference for pigs arises from the fact that they have a *similar* internal anatomy, skin-to-hair ratio, subcutaneous fat distribution, and enteroflora to humans. Decomposition also proceeds at largely the same rate for human cadavers of the same weight, and no discernible differences in the insect communities that inhabit and feed upon pig and human cadavers have been found (Campobasso, Di Vella & Introna, 2001; Schoenly et al., 2006, 2007). They are also considerably cheaper and easier to obtain than donated human cadavers (given the cost and legal hurdles of procuring and processing human remains). But the use of animal models has come under increasing criticism, centring around a core issue: can inferences derived from studies of pig (or any animal) decay be extrapolated to humans, especially where the goal is to inform estimates of PMI in forensic casework? This question was only recently attended to for the first time. Two landmark studies, conducted by two independent research groups in the USA and published two months apart, sought to elucidate any differences in the decomposition rates and processes between humans and the most common analogue: pigs (Connor, Baigent & Hansen, 2018; Dautartas et al., 2018). Both studies arrived at essentially the same conclusion: the rates and processes of decomposition do, indeed, differ between pigs and humans, with that of humans being more variant. Thus, only humans may be used to directly model human decay. However, this does not diminish the value of animal models in taphonomic research, which, as the authors of these studies explain, lies in their ability to facilitate the establishment of baseline data on decomposition and/or ecological processes where none previously exists and human bodies are not available for use in this type of research (Alapo, 2016; Connor, 2016; Connor, Baigent & Hansen, 2018; Dautartas et al., 2018).

(2) Influence of carcass size

The use of myriad species as animal models gave rise to another pressing question: does the size of the carcass(es) used influence the rate and/or pattern of decay? The first research objectively investigating this question, albeit for the purposes of assessing possible differences in carrion insect communities, was that of Kneidel (1984). Through comparisons of his own work with previous taphonomic research, he highlighted that carcasses greatly disparate in size decompose at different rates and with different patterns. They also appeared to host different invertebrate assemblages. Subsequent work by Hewadikaram & Goff (1991) indicated that minor variation in carcass size (e.g. ±10 kg) did not significantly influence the rate of decay or the colonising invertebrate populations. A recommendation emerged for using carcasses of 23 kg of weight (Catts & Goff, 1992; Goff, 1993) to model human decomposition, but this was contested soon thereafter (Komar & Beattie, 1998). The reason for this rests in the fact highlighted by Kneidel (1984) almost 15 years prior: a larger carcass takes longer to decompose than a smaller carcass, simply because there is more biomass to degrade. Thus, a 23 kg carcass is not going to decompose at the same rate or with the same pattern as a 60 kg carcass, in any environment. As highlighted in the section on intrinsic variables/factors influencing decomposition, this fact has since been proven in numerous contemporary studies, and it is a very important consideration when designing taphonomic research and interpreting the results thereof (Spicka et al., 2011; Sutherland et al., 2013; Matuszewski et al., 2014). The only circumstance under which carcass size does not appear to matter is in the absence of insect decomposers (Simmons, Adlam & Moffatt, 2010), which rarely occurs in real life.

Another matter which has not yet been expressly addressed in the literature, but necessitates consideration, is that of caging carcasses under study. The rationale for this is always the same: to exclude large vertebrate scavengers. The motivation for this varies and is linked to the study’s objectives. Studies seeking to determine the effects of specific variables on the decay process need to control for as many variables as possible, and excluding scavenging is the easiest way to control for it (e.g. Micozzi, 1986; Centeno, Maldonado & Oliva, 2002; Archer, 2004; Adlam & Simmons, 2007; Sharanowski, Walker & Anderson, 2008; Kelly, van der Linde & Anderson, 2008, 2009; Voss, Spafford & Dadour, 2009; Hunt, 2010; Anderson, 2011; Sutherland et al., 2013; Majola, Kelly & van der Linde, 2013; Smith, 2014; Mohr & Tomberlin, 2014; Paczkowski et al., 2015). Scavenging isn’t a uniform occurrence in decomposition scenarios, so some researchers exclude it when establishing baseline data. In such studies, it is often not possible to catalogue all variables within the decomposition ecosystem and determine their interactions. It may therefore be prudent to control for scavenging as a confounder of findings for the preliminary research. The results of such studies cannot, however, be extrapolated to forensic scenarios unless it can be proven that the remains in question were not scavenged. This is often difficult to do, especially where small scavengers are involved, and their artefacts are therefore not obvious. The same applies to remains which are skeletonised and there is no evidence of scavenging on the bone (even if there may have been on the soft tissue). It is thus important to interpret the data generated in such studies through a biased lens, with acknowledgement that the rates and/or patterns of decay observed may be altered by large vertebrate scavenging. Authors in these studies often recommend permission of scavenging in follow-up studies aimed at building upon the now-established baseline data, broadening and strengthening the forensic applicability (e.g. Munkres, 2009; Voss, Spafford & Dadour, 2009; Anton, Niederegger & Beutel, 2011; Merwe, 2016).

South African Research

The advent of forensic taphonomic research in South Africa began later compared to the international community, but in much the same way: with studies in carrion entomology. André Prins broke the ground in 1980 with his PhD studies on carrion insect communities in the southern and western Cape Province (now the Eastern and Western Cape Provinces) (Prins, 1980, 1982, 1984a,b). In the years since, five forensic taphonomic and entomological research centres have developed, all based at universities: University of the Free State (UFS), Rhodes University, University of Pretoria (UP), University of the Witwatersrand (Wits), and University of Cape Town, (UCT) covering four of South Africa's nine provinces. Most of the research has been experimental, all utilising pig models, and is summarised below, by university:

University of the Free State (Free State Province)

The forensic entomological research program at UFS is the oldest in the country, beginning in 1992 with the founding of the Forensic Entomology Investigation Team of the Universiteit van die Oranje Vry Staat [University of the Free State] (FEITUOVS) (Williams & Villet, 2006a). Under the leadership of the late Professor T. C. van der Linde, and later his student, Dr Sonja Brink, the program expanded to include taphonomic aspects. They have published- and presented data at conferences on identification and developmental rates of local forensically-significant dipterans, forensic entomotoxicology, and carrion succession and decomposition patterns of clothed, unclothed, burned, frozen, suspended, and stabbed remains in shade and sun over all four seasons (Kelly, 2006; Williams & Villet, 2006a; Kelly, van der Linde & Anderson, 2008, 2009). Their last publication was in 2013, on the influence of direct sunlight and shade on carcasses' decomposition and arthropod succession (Majola, Kelly & van der Linde, 2013). More are likely due following the recent completion of a

Master's thesis examining seasonal successional patterns of local dipterans associated with buried remains (van der Merwe, 2016).

Rhodes University (Eastern Cape Province)

The forensic research program at Rhodes University, strictly entomological in focus, is the second oldest in the country and by far the largest. Started in 1993 by Professor Martin H. Villet, the unit, known as the SAFER (South African Forensic Entomology Research) Laboratory, has published an impressive number of papers. Research has been undertaken on a wide range of subjects, including the systematics, taxonomy, thermoecophysiology, behavioural ecology, biogeographical distribution, molecular identification, and developmental rates of forensically-significant dipterans and coleopterans (e.g. Harvey et al., 2003, 2008; Wells, Lunt & Villet, 2004; Williams & Villet, 2006b; Richards, Paterson & Villet, 2008; Midgley & Villet, 2009a; Richards, Price & Villet, 2009; Richards, Williams & Villet, 2009; Richards, Rowlinson & Hall, 2013; Williams, Richards & Villet, 2014; Ridgeway et al., 2014; Kotzé, Villet & Weldon, 2015, 2016; Williams et al., 2017). Additionally, they have assessed numerous factors affecting the use of dipterans for PMI estimation, including killing method and storage conditions of specimens (Midgley & Villet, 2009b), and the accuracy and precision of thermal summation models (Richards & Villet, 2008). Although some of the unit's former members have moved to different institutions or private industry (Williams and Midgley to the Durban Natural Science Museum, and Richards to AgriProtein (Pty) Ltd. in Cape Town), it is still actively publishing under Professor Villet's continued leadership.

University of Pretoria (Gauteng Province)

Unlike UFS and Rhodes, UP began their forensic research in taphonomy, not entomology. The UP-based Forensic Anthropology Research Centre (FARC) may be credited with the establishment of the first official "body farm" in South Africa – the Forensic Anthropology Body Farm (FABF) – where taphonomic research was initiated in 2011. Over the last six years, FARC has established baseline data on- and comparisons of surface and buried decomposition in the Highveld region of South Africa, with special focus on the effect of body size and PMI estimation using the ADD method (Sutherland et al., 2013; Keough, Myburgh & Steyn, 2016; Marais-Werner, Myburgh, Becker, et al., 2017; Marais-Werner, Myburgh, Meyer, et al., 2017). UP has a long history in forensic entomology, but more through practice than research. Professor (Emeritus) Mervyn Mansell, an entomological taxonomist by training, provided forensic entomological assistance to the SAPS for the better part of 20 years (1995-2015), aiding in over 200 cases (Williams & Villet, 2006a). The entomological group in UP's Department of Zoology and Entomology has collaborated with the Rhodes group on several forensically-oriented papers in recent years (Harvey et al., 2003; Kotzé, Villet & Weldon, 2015, 2016).

Their most recent publication, on seasonal, locality, and habitat variation in carrion-associated dipteran assemblages in Gauteng, is the first to be entirely theirs (Parry, Mansell & Weldon, 2016).

University of the Witwatersrand (Gauteng Province)

Wits is best known for its extensive research history in human evolution, biological anthropology, and palaeontological taphonomy. Forensic taphonomy and entomology, on the other hand, have enjoyed much less attention. It appears that only five studies have been conducted: two experimental, and three retrospective case analyses. Four of these are concerned with decomposition: a case report detailing a forensic taphonomic approach to identifying death by lighting in skeletonised remains (Bacci et al., 2014); two retrospective analyses of decomposition cases in Gauteng's southern cluster of medicolegal laboratories in 2010/2011 and 2013-2015 (unpublished Honours thesis by Vincent in 2015 [pers. comm.]; Keyes, Hill & Gordon, 2016), and an experimental study of dog decomposition on the Highveld and its implications for estimation of PMI (unpublished Honours thesis by Pellat in 1996, noted in Gilbert, 2014). Gilbert (2014) picked up the baton and conducted an experimental study investigating porcine decomposition and the associated entomological factors. Unfortunately, no publications have arisen from this work as yet, but aspects of it have been presented at five different conferences: four local and one international. It was not known at the time of writing if Wits is undertaking any further forensic taphonomic or entomological research.

University of Cape Town (Western Cape Province)

UCT is the national newcomer to forensic taphonomic and entomological research. At its time of initiation, the present study was, to the knowledge of the author, the first forensic entomological research to be conducted in the Western Cape in over three decades, and the first experimental forensic taphonomic research in the region, ever. At present, only two publications exist on any aspect of the decomposition ecosystem of the Western Cape. These pertain to the activity of small mammal carrion scavengers, and the author is a co-author on both (Spies, Finaughty & Gibbon, 2018; Spies, Gibbon & Finaughty, 2018). The work is a continuation of the present study, conducted over a shorter timescale in 2017 given that only one aspect of the ecosystem was under study. Beside these papers, no other published data exists on the rates and processes of soft-tissue decomposition in this region, if and/or how this differs by season, or the physical and biotic agents driving it. Nor does any published data exists on the successional patterns of the local invertebrate assemblages that are known to attend carrion.

RESEARCH RATIONALE

The lack of research on the decomposition ecosystem in the Western Cape is significant as the province is the only African Mediterranean clime south of the Sahara which, paired with its Cape Floristic Kingdom comprising thousands of faunal and floral species found nowhere else on Earth, makes it a globally-unique biogeoclimatic region. The City of Cape Town Metropole is now home to over four million people (Stats SA, 2016) and the highest murder rate in Africa - 62/100,000 people – with 10 of the top 30 police stations for murder in South Africa being located in the city (SAPS, 2018). The potential for failures in identification and establishment of the circumstances surrounding death is highest here, especially where decomposed and skeletonised human remains are concerned. As illustrated at the start of this chapter, this is a known problem in the city. Thus, the deficit of knowledge on decomposition in this region is hugely limiting to local forensic investigative efforts and requires urgent addressing. But such is the biogeoclimatic distinctiveness of this region that decompositional data from other regions, even within the country, may not be able to be used with the necessary degree of accuracy for the resolution of local forensic cases. Nor can this data be obtained from laboratory analysis of human remains (Mann, Bass & Meadows, 1990; Schoenly, Griest & Rhine, 1991; Vass et al., 1992; Shean, Messinger & Papworth, 1993; Dirkmaat et al., 2008). Henssge and Madea (2007) point out, crucially, that these data can *only* be attained from field experiments aimed at quantifying the effects of physical, faunal, and floral factors on the rate and processes of decomposition. Moreover, they should preferably be studied in longitudinal studies with objective measurement of post-mortem changes.

RESEARCH AIMS AND OBJECTIVES

The purpose of this study is to establish baseline data on the rates and processes of soft-tissue decomposition in the Western Cape with a view to ultimately informing more accurate PMI estimation and thus improved identification rates in this region, especially the City of Cape Town.

The specific objectives to be met are:

I. To place pig carcasses, as acceptable analogues for human cadavers, in controlled circumstances wherein the decomposition process may be observed and catalogued.
II. To gather data on the agents of decomposition (both physical and biotic) and undertake an investigation into possible correlations between the decomposition process and the agents driving it.

III. To determine the effect of seasonality and environmental differences on the rates and processes of decomposition through variation of the pattern of deployment (i.e. the carcasses will be placed in two distinctly different environments over multiple seasons and years).

Chapter 2: Materials & Methods

RESEARCH SITE

LOCATION OF RESEARCH SITE

The research site is located at a secure private facility in the suburb of Delft, on the south-eastern side of the City of Cape Town Metropole. Delft is situated in a heavily-populated region of the city known as the Cape Flats – the large tract of flat low-land that lies between Table Mountain in the west and the Boland and Hottentots-Holland mountains in the east (Stats SA, 2012). There are more than 3,000 inhabitants per square kilometre in most of the suburbs comprising this region, Delft included (Stats SA, 2012). The region is also characterised by a very high murder rate, with 18 police precincts in the top 20% nationally in terms of number of murders recorded annually. For illustrative purposes, the police precinct in which the research site is located experienced 195 murders, alone, in 2017/2018 (SAPS, 2018) (Figure 2.1).

INTRODUCTION TO HABITATS UNDER STUDY

To contextualise the location of the study, a brief introduction to its habitats is presented. The Cape Town Metropole is situated in the Fynbos biome – one of the five geographically remote regions constituting the global Mediterranean biome (Rebelo et al., 2006) (Figure 2.2a). It has a temperate climate with dry, hot summers (Figure 2.2c) and cool, wet winters (Figure 2.2d) (Köppen-Geiger climate classification type Csb; Peel, Finlayson & McMahon, 2007; Figure 2.2b). The existence of a high-pressure Hadley Cell offshore of southern Africa results in a strong south-easterly wind dominating in summer, replaced by westerly winds in winter. The latter is punctuated by the passage of low-pressure cyclonic fronts ('cold fronts') over this region bringing strong, predominantly north-westerly winds and heavy rain (Rebelo et al., 2006).

This climate is complemented by a unique and highly variable geography – most notably the prominent Cape Fold mountain chain – resulting in extensive habitat variability (Rebelo et al., 2006). The Cape Town Metropole alone, for example, constitutes 25 vegetation sub-types, each with their own unique microclimates and faunal assemblage (Figure 2.2a). The research was conducted in the most representative sub-type(s), defined as those wherein the majority of Cape Town's population resides and/or which experience high murder rates, and are, therefore, those from which a large portion of the city's forensic cases come (i.e. the Cape Flats region). The vegetation sub-types which meet these criteria are the Cape Flats Dune Strandveld (CFDS) and the Cape Flats Sand Fynbos (Figure 2.1a), though more than 80% of the latter has been obliterated by urban development (Rebelo et al., 2006). The research site was therefore chosen as it falls within the CFDS sub-type, which is regionally endemic (Holmes, Stipinovich & Purves, 2012).

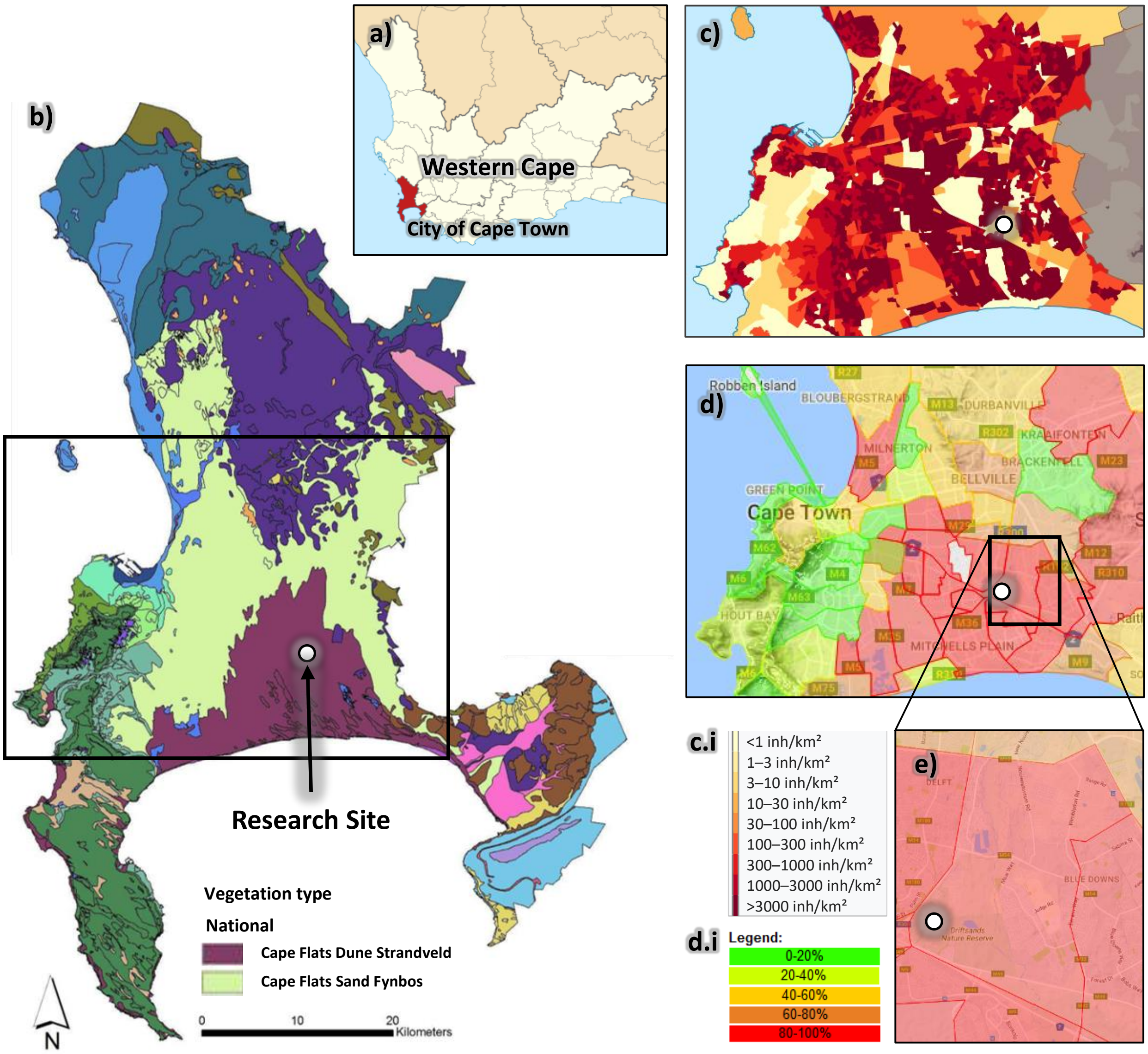


Figure 2.1: Maps of the City of Cape Town Metropolitan Municipality indicating: ***(a)*** *the municipality's position within the Western Cape province (adapted from Htonl, 2011);* ***(b)*** *the vegetation sub-types within the municipal borders with relevant sub-types keyed and Cape Flats region highlighted (adapted from Holmes et al. 2012:11);* ***(c)*** *a heat-map of the population density of the Cape Flats region based on number of inhabitants per square kilometre (inh/km²) (legend in* ***c.i****) (adapted from Htonl, 2015; data from 2011 National Census [Stats SA, 2012]);* ***(d)*** *the Cape Flats region's policing precincts heat-mapped to show the quintiles of contact crimes (murders), where precincts in the fifth quintile (top 20%) in terms of the numbers of murders nationally are indicated in red (legend in* ***d.i****) (adapted from Crime Stats SA, 2018). The location of the research site is indicated with a white circle in* **b-d***. The precinct in which the research site falls (Mfuleni) is highlighted in* **d** *and enlarged in* **e** *below. This composite figure is adapted from Spies, Finaughty & Gibbon (2018).*

The CFDS is characterised by a flat to slightly undulating landscape with sandy, nutrient-poor soils. Vegetation is predominantly medium-to-tall evergreen, hard-leaved shrubland with abundant grasses and annual herbs in gaps (Figure 2.3a) (Rebelo et al., 2006). Tall trees are rare, with the exception of the invasive aliens Port Jackson (*Acacia saligna*) and Rooikrans (*Acacia cyclops*), which exist in abundant dense clusters throughout the CFDS (Figure 2.3b).

The mean temperatures for the CFDS are indicated in Table 2.1 below.

Table 2.1: Mean daily and monthly maximum and minimum temperatures for the CFDS habitat.

	Mean maximum temperature	**Mean minimum temperature**
Daily	26.7°C	7.5°C
Monthly	34.3°C (February)	1.1°C (July)

Freezing temperatures and frost are rare, but thermal extremes in excess of 45are on record. Mean annual rainfall ranges from 350-560 mm (Rebelo et al., 2006) (Figure 2.3c).

The dense cover of the Rooikrans and Port Jackson provides shelter from wind, rainfall and solar radiation, essentially creating a closed habitat within the open CFDS. Decomposition has been documented to proceed at a different rate under such conditions (Shean, Messinger & Papworth, 1993; Lopes de Carvalho & Linhares, 2001; Allaire, 2002; Gill, 2005; Sharanowski, Walker & Anderson, 2008; Battán Horenstein, Rosso & García, 2012; Majola, Kelly & van der Linde, 2013), and, indeed, these clusters represent a predominant location where surface exposure forensic cases within the city come from. It is, thus, imperative that baseline data are gathered for both habitats within the CFDS. The research site has examples of both, and, accordingly, they are the two habitats chosen for this study, henceforth referred to as CFDS-open (CFDS/O) and CFDS-closed (CFDS/C).

CFDS/O and CFDS/C

Prior to commencement of the study, two 100 m^2 plots were demarcated in the vicinity of the carcass decomposition sites in each habitat under study. A vegetation survey of each plot was then conducted with the assistance of a botanist (Ms. Zoë Poulsen, Plant Conservation Unit, Biological Sciences, University of Cape Town), with generation of the following information: a species list; estimation of percentage cover of each species present within-plot; estimation of percentage cover of bare ground; classification of each species present as either alien or indigenous; and classification of each species' growth form. The raw data for this survey are available in Appendix A2.1.

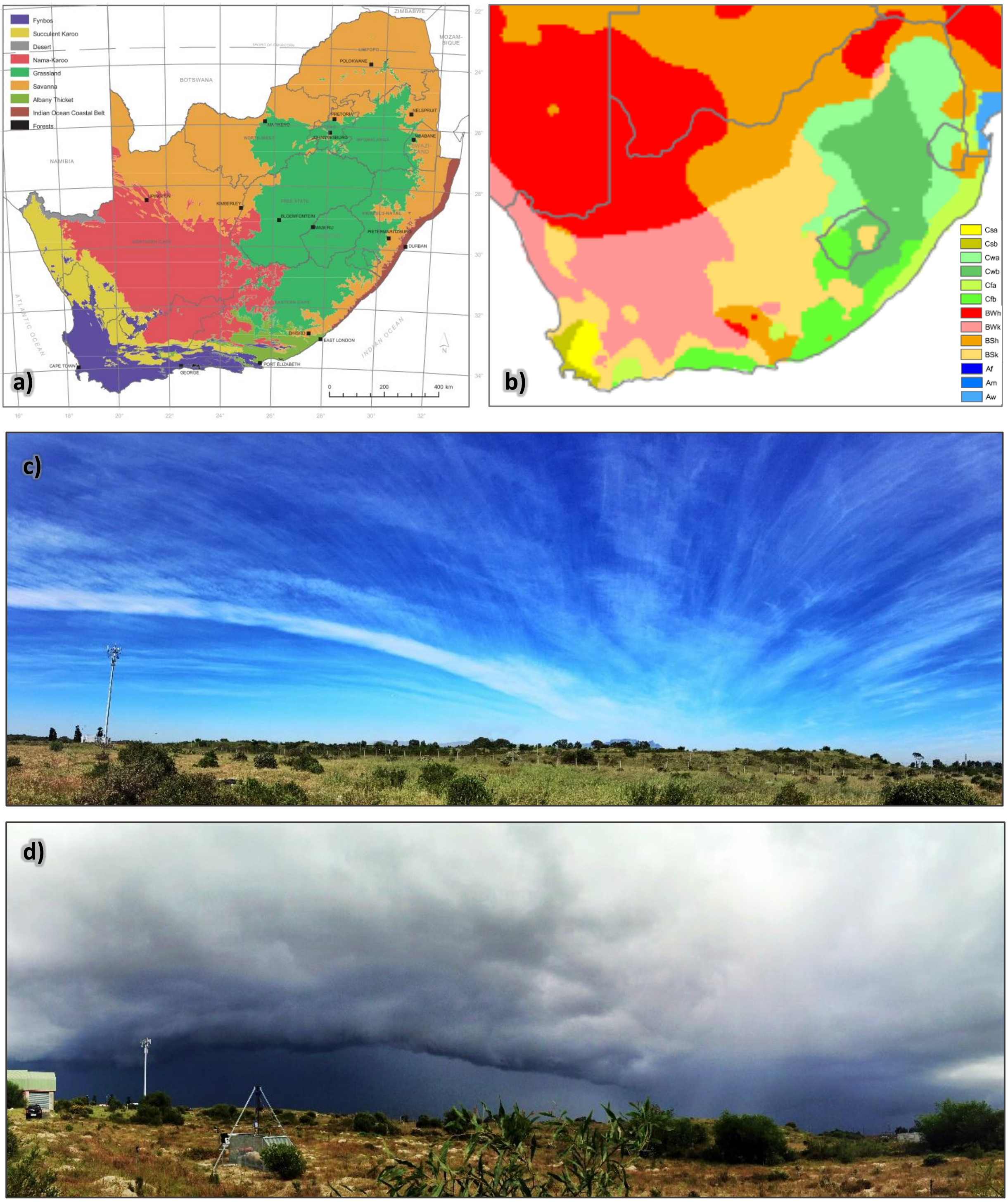


Figure 2.2: *Maps of the biomes* ***(a)*** *and Köppen-Geiger climate types* ***(b)*** *of South Africa, Lesotho and Swaziland (adapted from Rutherford, Mucina & Powrie, 2006:33; Peel, Finlayson & McMahon, 2007:467).* ***(c)*** *Characteristic summer weather in the Cape Town Metropole with clear skies and occasional high cloud.* ***(d)*** *A typical winter squall line associated with a low pressure cyclonic front bringing heavy rain and strong, predominantly north-westerly, winds.*

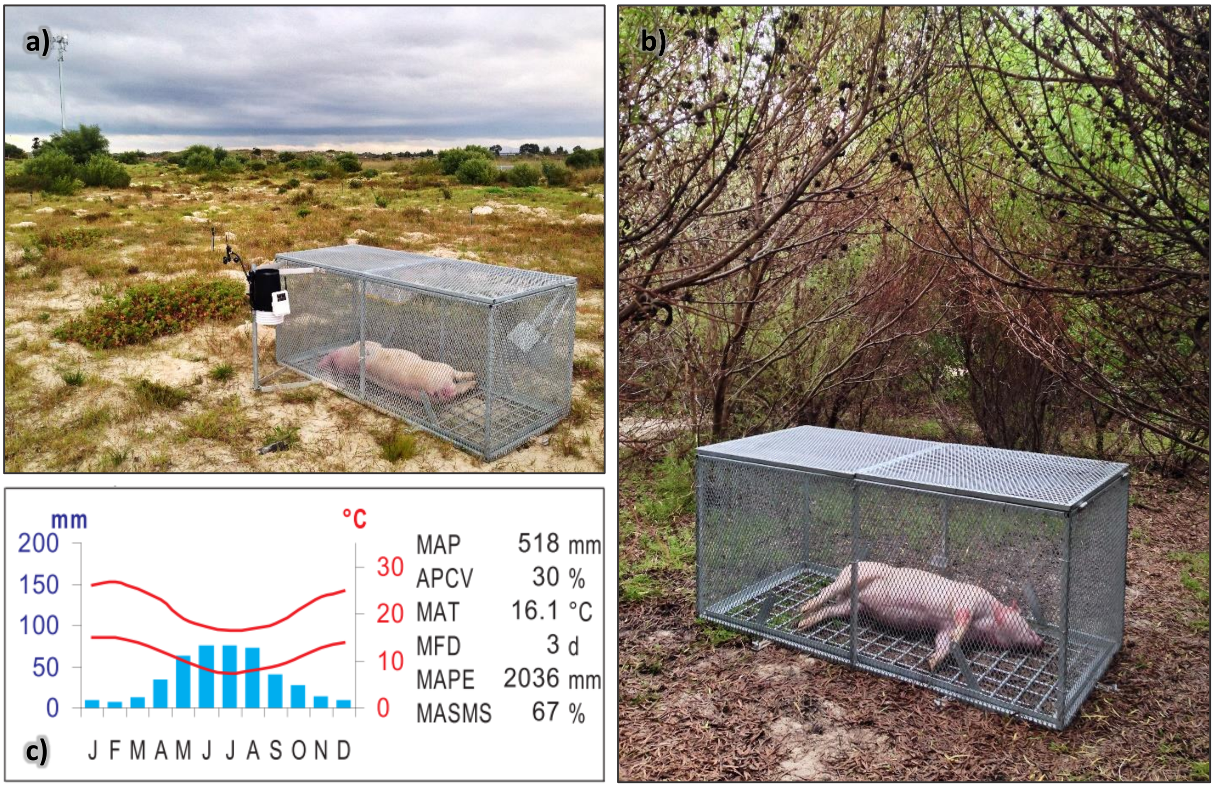


Figure 2.3: (a) *The CFDS/O habitat of the research site. Note the characteristic vegetation and sandy soil.* ***(b)*** *The CFDS/C habitat of the research site. Note the clustering nature of the trees creating dense cover and the limited vegetative growth beneath.* ***(c)*** *Climate diagram of the CFDS vegetation sub-type. Blue bars show the median monthly precipitation. The upper and lower red lines show the mean daily maximum and minimum temperature respectively. MAP: Mean Annual Precipitation; APCV: Annual Precipitation Coefficient of Variation; MAT: Mean Annual Temperature; MFD: Mean Frost Days; MAPE: Mean Annual Potential Evaporation; MASMS: Mean Annual Soil Moisture Stress (adapted from Rebelo et al. 2006:198).*

The CFDS/O habitat is located on the western side of the research site and is 3.55 acres in size (Figure 2.4). The site has been previously disturbed (ploughed for agriculture) but has reverted to its natural state. The disturbance, however, has facilitated invasion by alien vegetation which constitutes an average of 60% of vegetation cover– the majority of which are invasive grasses (Poaceae). Other invasive species include Spurges (*Euphorbia helioscopia*), Plantains (*Plantago lanceolata*), Thistles (*Sonchus oleraceus*), and isolated Port Jackson and Rooikrans saplings.

There is greater diversity of indigenous vegetation compared to alien vegetation. Indigenous species include Sour Figs (*Carpobrotus edulis*), Daisies (*Trichogyne repens*), Figworts (*Zaluzianskya villosa*), False-Slugworts (*Dischisma ciliatum*), Woolly Manuleas (*Manulea tomentosa*), Geraniums (*Geranium purpureum*), Branched Onion Weeds (*Trachyandra divaricata*), Rose Geraniums (*Pelargonium capitatum*), White Bristle Bushes (*Metalasia muricata*), Tortoise Berries (*Nylandtia spinose*), Tick Berries (*Chrysanthemoides monilifera*), Swawelbosse (*Otholobium bracteolatum*), Tangle Strawflowers (*Helichrysum asperum*), Heathleaf Capegorses (*Aspalathus ericifolia*), Sandalwoods (*Thesium densiflorum*), Tetrogonias (Tetragonia spp.), Restios (Restionaceae), and Sedges (Cyperaceae).

The CFDS/C habitat is located on the eastern side of the research site and is 1.87 acres in size (Figure 2.4). It consists of dense Port Jackson and Rooikrans thickets constituting more than 80% of vegetation cover, interspersed by patches of bare sand. The dense cover of these invasive trees suppresses vegetative growth beneath the canopies, with only shade-tolerant invasive annuals surviving. These include Stinging nettles (*Urtica urens*), Milkweed (*Euphorbia peplus*), Spurges (*Euphorbia helioscopia* and *Euphorbia pubescens*), Mustards (*Brassica tournefortii* and hybrids), French mallows (*Malva nicaeensis*), Hairy bittercress (*Cardamine hirsuta*), Loosestrifes (Lythrum spp.), Geraniums (*Geranium purpureum*), Bristly ox-tongue (*Helminthotheca echioides*), Chickweed (*Stellaria media*) and numerous invasive grasses (Poaceae).

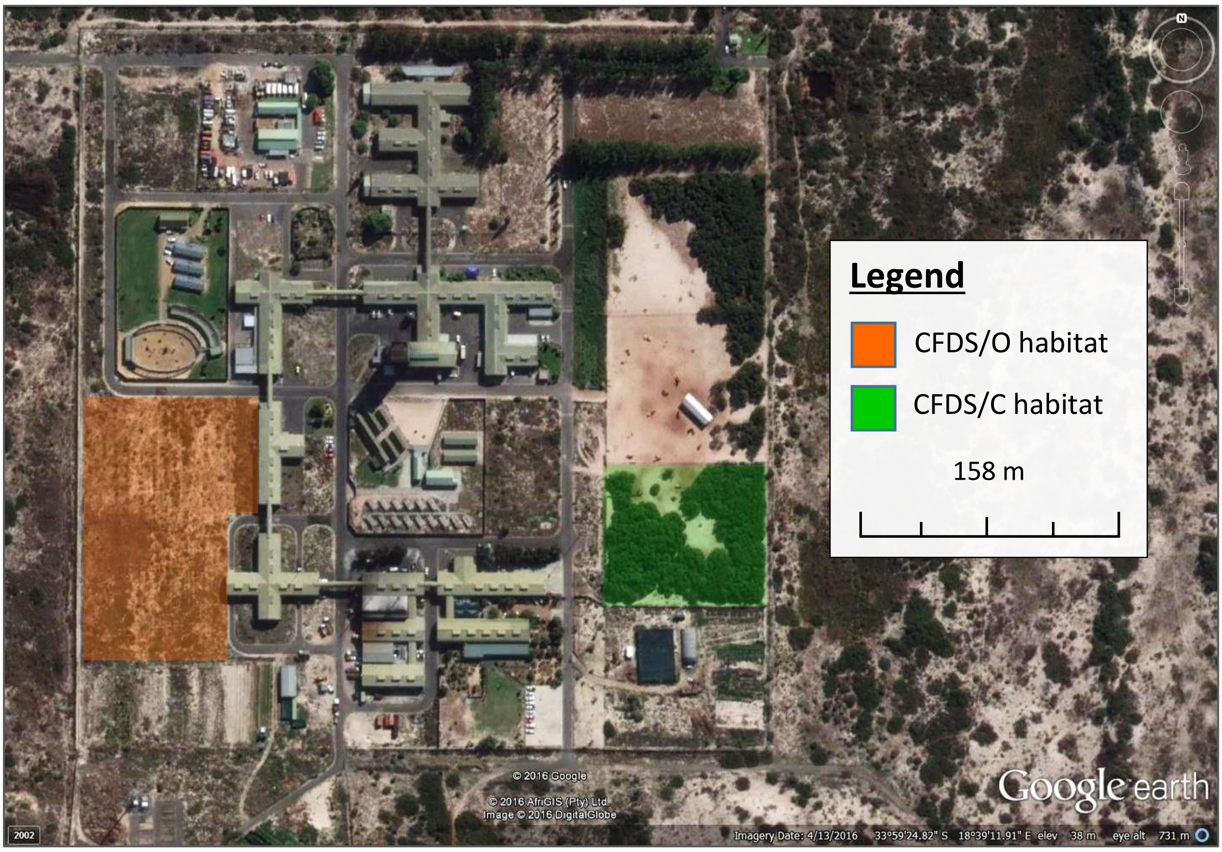


Figure 2.4: *Aerial view of the research site, indicating the locations of the CFDS/O and CFDS/C habitats (adapted from Google Earth, 2015).*

The presence of invasive species does not, however, preclude the survival of some indigenous species. Present in this habitat are Ragwort (*Senecio polyanthemoides* and *Senecio burchellii*), Geraniums (*Geranium incanum*), Rhuses (*Rhus glauca*), Arum lilies (*Zantedeschia aethiopica*), Sedges (Cyperaceae), African buckhorn (*Cynanchum africanum*), Cobra lilies (Chasmanthe aethiopica), and Tick Berries (*Chrysanthemoides monilifera*).

RESEARCH TRIALS AND EXPERIMENTAL SETUP

Data were collected over four seasonal trials (two replicates each of summer and winter), starting in July 2014 and ending in March 2016. The boundaries of the seasons are difficult to define in South Africa due to its sub-tropical location. Each seasonal trial was thus started on the closest practical day to the respective solstice: 21 December for summer, and 21 June for winter (Kelly, van der Linde & Anderson, 2009).

The experiment employed freshly-killed domestic pig (*Sus scrofa* L.) carcasses, controlled as far as possible for sex, mass, subcutaneous fat depth, size, and manner of death (Mann, Bass & Meadows, 1990). Domestic pigs are internationally-accepted analogues for human cadavers for use studies seeking to establish taphonomic baseline data (Catts and Haskell, 1990; Catts and Goff, 1992; Dautartas et al., 2018). As a reminder, pigs have a similar internal anatomy, skin-to-hair ratio, subcutaneous fat distribution, and enteroflora to humans. Decomposition also proceeds at largely the same rate for human cadavers of the same weight, with no discernible differences in the forensically significant insect communities that inhabit and feed upon pig and human cadavers, although some differences in the extent of insect activity do exist. The latter relates to the increased intraspecific variation in overall decomposition rates and patterns in humans compared to pigs (Byrd & Castner, 2001; Campobasso, Di Vella & Introna, 2001; Schoenly et al., 2007; Dautartas et al., 2018).

Carcasses were purchased from Stellenbosch University's Piggery Unit at the Mariendahl Experimental Farm, and humanely euthanized via a single gunshot to the base of the brain with a .22 calibre long rifle. Each euthanasia was performed by either the farm manager or an industry expert. A target weight of 60 kg was provided to the farm manager to ensure appropriate pigs were selected. The death of each pig was confirmed by four criteria and accordingly certified on a Confirmation of Death Checklist (an example of this checklist is available in Appendix A2.2). Ethical clearance for the use of pig carcasses and the euthanasia protocol was granted by the University of Cape Town's (UCT) Faculty of

Health Sciences Animal Ethics Committee (FHS AEC) on 10 March 2014, amended on 30 October 2014 (FHS AEC Ref. No.: 014/004) (see Appendices A2.3 and A2.4).

For each seasonal trial, the pigs were euthanized early in the morning (around sunrise) to ensure blow fly activity was limited or entirely negligible. The carcasses were washed with water using a hosepipe and placed into body bags immediately and transported directly to the research site. The time between death and deployment was kept to a minimum (~two hours), with no freezing or refrigeration at any time, in line with recommendations in the literature (Schoenly, Griest & Rhine, 1991; Vass et al., 1992). The time between deployment of the first and last carcass for each seasonal trial was similarly kept to a minimum (<30 minutes) to ensure comparability with respect to meteorological conditions at time of deployment. Upon arrival at the research site, each carcass was measured using a 5 m tape measure for length, width, and height, defined as follows: length = tip of snout to base of tail; width = distance between the widest points of the abdomen; height = base of flexed hoof to apex of shoulder.

For each seasonal trial, two carcasses were deployed in each of the two habitats under study, for a total of 16 carcasses. Equal numbers of males and females were used for each trial to ward against sex-specific sampling bias. Each carcass was placed on its left side with its head to the south and its dorsal side to the east on a steel weighing grid. The openings within each weighing grid measured 100 cm^2 (10 cm x 10 cm). This, to ensure adequately support the carcass but still enable sufficient contact of the carcass with the soil substrate. Each weighing grid was placed inside a specially-designed and purpose-built steel cage measuring 2.0 m x 0.9 m x 0.9 m (Figure 2.5). Caging was elected to protect the carcasses against theft whilst still fresh, and from removal/dispersal by large scavengers (e.g. Munkres, 2009; Voss, Spafford & Dadour, 2009; Anton, Niederegger & Beutel, 2011; Merwe, 2016). Although this narrows the scope of forensic applicability of the results, it is still appropriate for the aim and objectives of this study considering in only 11% of the forensic investigations undertaken by the local service provider in Cape Town (Forensic Anthropology Cape Town [FACT]) in the last 10 years have the remains presented with signs of scavenging. Accordingly, the results could still be applicable to the majority of local forensic cases. The cages were oriented lengthways in a north-south direction, and placed a minimum distance of 30 m apart to prevent overlap of attendant crawling insect populations at each carcass (Reed, 1958). Four pitfall traps, in line with the primary cardinal directions (north, south, east, and west) were simultaneously deployed around each cage at a distance of 1 m from the cage edge to sample blow fly larvae migrating away from each carcass (Figure 2.5c).

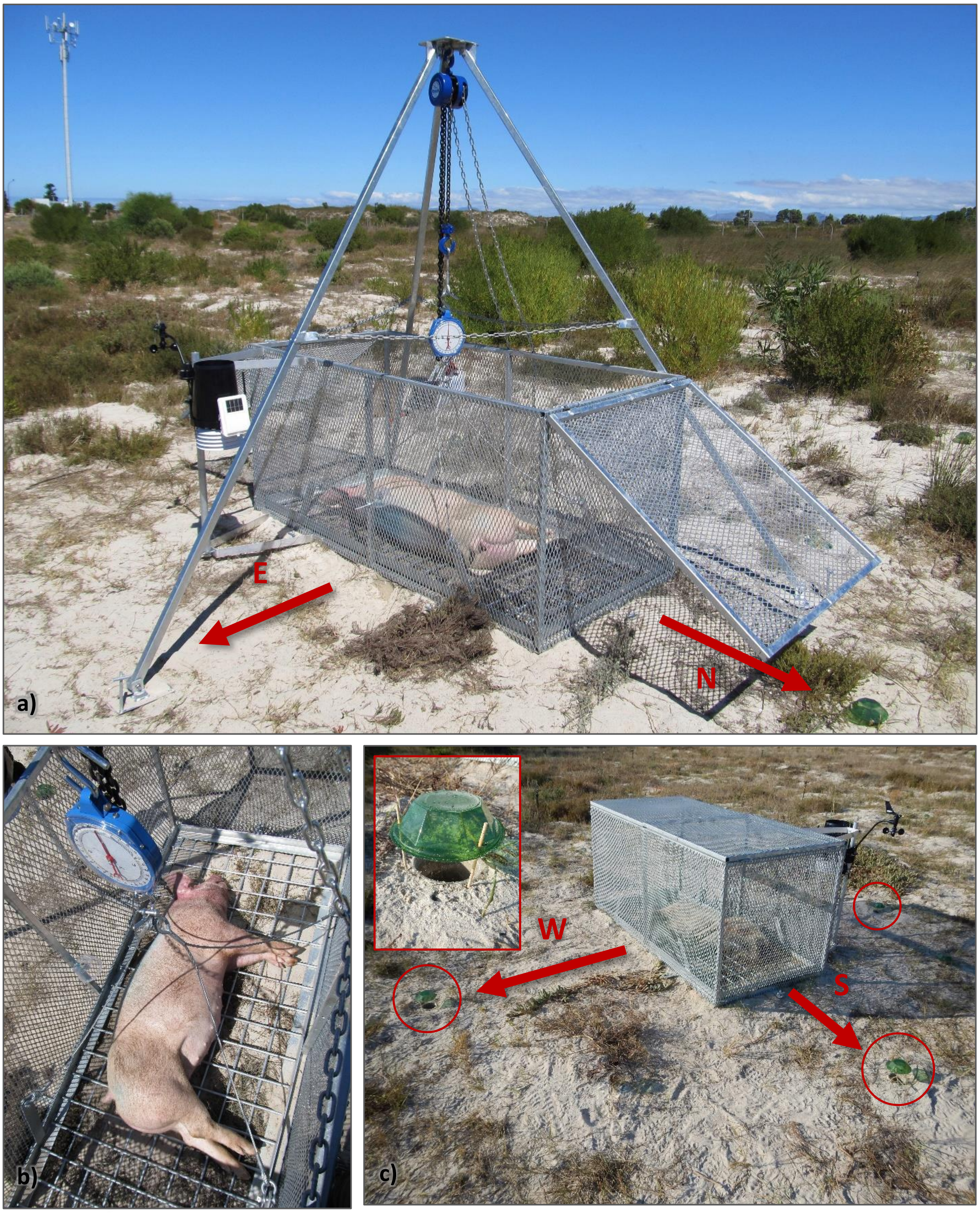


__Figure 2.5:__ __(a)__ Weighing setup indicating steel cage, tripod, block and tackle, and hanging scale. __(b)__ Close-up of weighing setup indicating hanging scale, weighing grid, and steel cables connecting these components. __(c)__ Experimental setup indicating positions of pitfall traps (north trap not visible). Inset indicates a close-up of a pitfall trap. Cardinal directions indicated on each image.

DATA COLLECTION

DATA COLLECTION SCHEDULES

Data were collected during site visits undertaken according to a pre-defined schedule based on similar studies. The schedule was characterised by reduction in the frequency of site visitation as decomposition progressed, necessitated by research resource constraints which limited the total number of times the site could be visited. It was deemed essential to visit the carcasses daily during the stages of decay during which most of the changes to the carcasses and the surrounding ecosystem occur. As the rate of decay and change in the ecosystem slowed, the rate of site visits would concomitantly decrease. These decisions were made in line with similar decisions made by other researchers for similar reasons, and landmarks for reduction in visitation frequency were extracted from the pertinent literature (Reed, 1958; Shean, Messinger & Papworth, 1993; Gill, 2005; Wang et al., 2008; Eberhardt & Elliot, 2008; Sharanowski, Walker & Anderson, 2008; Segura et al., 2009; Battán Horenstein et al., 2010; Simmons, Adlam & Moffatt, 2010; Battán Horenstein, Rosso & García, 2012; Prado e Castro et al., 2012):

Data were collected **once every day** from the date of deployment until one or both of the following events occurred:

- Carcass weight loss declined to <0.5 kg per day;
- The larvae of the local forensically significant blow fly species (e.g. *Chrysomya albiceps, Chrysomya marginalis*, *Chrysomya chloropyga, Calliphora vicina*, and/or the two *Lucilia* species: *L. sericata* and *L. cuprina*) had migrated off the carcass, pupated, and emerged as adult flies.

Thereafter, data were collected **once every third day** until weight loss declined to <1 kg per week, at which point data collection frequency dropped to **once per week** until termination of the trial. The trial was terminated when skeletonisation was reached, based upon any one, or a combination of, the following criteria (Adlam & Simmons, 2007):

- Obvious loss of internal abdominal structure, spine only remaining underneath dried skin;
- Substantial unweathered bone exposed (>50% of carcass) and no wet decomposition when observed underneath;
- Significant areas (>30% of carcass) of bleached or weathered bone exposed.

Site visitation for data collection was rotated on a four-day cycle to ward against temporal sampling bias of both physical and biotic data. The visitation schedule was rotated as follows (sites listed in order of visitation):

- Day 1: CFDS/O-1 **|** CFDS/O-2 **|** CFDS/C-1 **|** CFDS/C-2
- Day 2: CFDS/C-2 **|** CFDS/C-1 **|** CFDS/O-2 **|** CFDS/O-1
- Day 3: CFDS/O-2 **|** CFDS/O-1 **|** CFDS/C-2 **|** CFDS/C-1
- Day 4: CFDS/C-1 **|** CFDS/C-2 **|** CFDS/O-1 **|** CFDS/O-2

As far as possible the data collection period was undertaken during the morning between 08:00 and 12:30 each day. However, scheduling conflicts occasionally prevented this, resulting in data being collected at a different time of the day. It also serves to note that certain circumstances beyond the control of the researcher periodically prohibited data collection partially or entirely. These included adverse weather conditions (e.g. strong/constant rain or excessive heat), occasional mechanical failure of equipment, and illness on the part of the researcher. A research assistant was employed for the third and fourth seasonal trials to mitigate against the effect of the latter. Gaps do, however, exist in the timeline of observations for each trial, and are clearly indicated as such in the results. Where possible, gaps in quantitative data were filled using linear regressive interpolation.

Data were gathered in three clusters:

1. From the monitoring and recording of local climatological conditions;
2. From the cataloguing of the decomposition process, and;
3. From the monitoring and recording of the biotic agents of decay (insects and mammalian scavengers).

Data collection for each site visit began with noting time of day and assessing the area surrounding the cage for insect activity. Photographs of the carcass, site, and any outstanding features (e.g. particular concentrations of insects on the carcass and/or surrounding vegetation) were then taken. Initially a Nikon Coolpix AW110 digital compact camera was used, later substituted by an Apple iPhone 6 for noticeably better colour rendition and better-balanced light levels courtesy of the iPhone's High Dynamic Range (HDR) function which captures a broader exposure range. The methods for each cluster (detailed below) were then executed to collect the remaining data. A detailed data collection protocol may be found in Appendix A2.5.

LOCAL CLIMATOLOGICAL CONDITIONS

The local climatological conditions of each habitat under study were recorded using a Davis Wireless Vantage Pro 2 weather station (Davis Instruments, Hayward, CA, USA) located within 100 m of the respective carcasses. Each weather station recorded the following variables at 15-minute intervals daily: ambient temperature (°C), ambient relative humidity (RH; %), rainfall (mm), solar radiation intensity ($W.m^{-2}$), and wind velocity ($km.h^{-1}$ + direction at altitude of 1 m above ground level). The data from these weather stations were downloaded once every 30 days. Occasional failure of the data loggers, and intermittent and unexpected overwriting of data created gaps in the record. These were filled with linear regression modelling based on data recorded during the corresponding period by the South African Weather Service's (SAWS) weather station at Cape Town International Airport 5.5 km away. To achieve this, a climatologist built a regression model in MATLAB 9.1 (R2016b) using all the recorded data from the research site compared to the data simultaneously recorded by the SAWS weather station. The model showed a high degree of agreement (95-99%), providing for its use for filling the gaps in the research site's data.

DECOMPOSITION PROCESS

The rate and process of decomposition were catalogued separately, but using overlapping methodology.

The **rate** of decomposition was measured in two ways: 1) as decrease in weight over time, and 2) progression of the decomposition sequence scored according to Megyesi and colleagues' (2005) Accumulated Degree Days (ADD)/Total Body Score (TBS) method. The former was assessed by weighing each carcass daily using the experimental setup shown in Figure 2.5 and the protocol detailed under the section ***Stage 4 – Carcass weight & insect activity (II)*** of Appendix A2.5. These values were recorded on Form 1A of the data collection forms (Appendix A2.7). Adlam and Simmons (2007) validated this factor as an appropriate measure of the rate of decomposition, and the design of the experimental setup was based on those from studies employing the same measure (Gill, 2005; Kelly, van der Linde & Anderson, 2009).

The second measure of decomposition rate makes use of the ADD/TBS scoring system (Megyesi, Nawrocki & Haskell, 2005). Here, the physical appearance of each carcass was scored each day as per Megyesi and colleagues' (2005) criteria to generate a daily carcass-specific Total Body Score (TBS). The method assigns scores to qualitative decompositional characteristics in three regions of the body: the head/neck (including the cervical vertebrate), trunk (including the thorax, pectoral girdle, abdomen, and pelvis), and limbs (from the shoulder to the hoof). This is due to the fact that decomposition may proceed at different rates in these regions, and not all regions of the body present with precisely the same patterns of decay (Suckling, Spradley & Godde, 2016). These scores are then combined to produce the TBS. The TBS may range from a minimum of 3 (representing a fresh body), to a maximum of 35 (representing dry bone in all three regions). When each of the three regions of the body has attained the minimum score for the next decomposition stage, the entire body may be considered to have transitioned to the next decomposition stage. The TBS values corresponding to these transitions are as follows: fresh to early decomposition = 6; early decomposition to advanced decomposition = 19; advanced decomposition to skeletonisation = 27. Scoring was recorded on Form 1B of the data collection forms (Appendix A2.7), per Point 3 of the section ***Stage 2 – Insect activity (I) & ADD*** of the data collection protocol (Appendix A2.5).

The TBS, therefore, corresponds to a specific stage of decomposition, meaning progression of a carcass' TBS corresponds to progression of its decomposition through the four decomposition stages defined by Megyesi and colleagues (2005). TBS progression was thus plotted against both time *and* ADD to generate additional measures of the decomposition rate; specifically, the amount of time (in 24-hour days) spent in each decomposition stage, and the relationship between heat energy input (via ADD) and TBS progression. This same principle was used to assess the **process** of decomposition in terms of cataloguing the progression of the key diagnostic features of each decomposition stage (as defined by Megyesi et al., 2005) over time.

By recording TBS daily, it was also possible to assess whether the process of decomposition as measured by progression through the decomposition stages was linear or non-linear, and how temperature is related to this (by plotting TBS against ADD) (Suckling, 2011).

In addition to scoring TBS the day on which any region of tissue representing 1% or more of the carcass first mummified was noted. Criteria for establishing mummification included determining if the region under assessment presented with desiccated, brittle skin in a fixed position (i.e. lacking compliance) and shrunken over and/or adherent to underlying bony prominences, where applicable. This was done to delineate the point at which mummification began, which Megyesi and colleagues' (2005) method does not do as it only establishes the onset of mummification once an entire region of the body (i.e. the whole head/neck, or entire thorax/abdomen, or all four limbs – each in their entirety) have become mummified. Completion of mummification was defined as all three regions of the carcass attaining a state of mummification as defined by Megyesi and colleagues' (2005) criteria.

BIOTIC AGENTS OF DECAY

Insect attendance and activity

The populations of forensically significant insects in attendance to the decomposition of each carcass were noted daily to generate the following information:

- Species list;
- Species richness (number of species/families);
- Abundance (number of individuals of each species/family)
- Successional pattern of species/families; and
- Presence of fly eggs.

To achieve this, the populations were assessed using a modified version of Byrd's (2015) insect sampling protocol (detailed protocol available in Appendix A2.6). Sampling was divided into 3 stages: (1) visual observations, (2) sampling of carcass, and (3) sampling of surrounding environment.

In stage 1, the scene was observed and photographed as it was approached (from far to near), when applicable (e.g. when immature flies have emerged). Upon arrival at the carcass, the attendant insect population was visually assessed for information on species present, locations of individuals and concentrations or masses on and around the carcass, estimated abundance of each species (counted directly up to 100 individuals), life stage(s) of each species where identifiable, presence of fly eggs, maggot migration activity (when applicable), and immature adult fly emergence activity (when applicable). These data were captured on Forms 1A and 1C of the data collection forms (Appendix A2.7).

Stage 2 involved sampling of the insect populations present on, in and under the carcass. If a new species was observed, larval and/or adult specimens were sampled and preserved in 70% ethanol for identification. Identification of adult blow flies was achieved using the key developed by Irish, Lindsay and Wyatt (2014) paired with guidance from local forensic entomologist, Dr Cameron Richards. Dr Richards additionally trained the author in rapid on-site identification of readily-identifiable and distinguishable blow fly and beetle species. Identifications of blow fly specimens collected on site were later verified using the updated key developed by Lutz and colleagues (2018), under the guidance of local zoologist, Dr Marise Heyns, who was trained in the use of the key by one of the authors (Dr Krzysztof Szpila). Any specimens that were not identifiable with the Irish et al. (2014) key were identified using the Lutz et al. (2018) key. With respect to adult beetles and their larvae, the morphological descriptions provided by Prins (1984a,b) were used for the identification of individuals belonging to the families Dermestidae (specifically

Dermestes maculatus), Cleridae (specifically *Necrobia rufipes*, supported by the descriptions provided by Simmons & Ellington, 1925), Histeridae, Silphidae, Staphylinidae, and Scarabaeidae. Identification of the Silphids *Thanatophilus micans* and *Thanatophilus mutilatus* were made using Schawaller's (1987) key under the guidance of local forensic entomologist, Dr John Midgley. Trogids were identified under the guidance of Dr Richards, supported by general descriptions and photographs from van der Merwe and Scholtz (2005).

Insect activity in the surrounding environment was assessed both by visual observation, and via pitfall trap sampling, the latter a useful tool for establishing baseline data on surface-level insect activity (Schoenly et al., 2007). As previously noted, four pitfall traps were positioned in line with the primary cardinal directions at a distance of 1 m from the edges of each cage. A nested pitfall trap design was employed (Schoenly et al., 2007; Laub et al., 2009): each trap consisted of a 350 ml plastic cup sunk into the soil to just above its rim. A second, identical cup with a small amount of preservative solution (80% ethylene glycol) was placed into this cup so that its rim sat flush with the soil level. An elevated cover was then placed over each trap to ward against evaporative loss of the preservative fluid and its dilution during rainfall events, but still allowing insects to fall in. The pitfall traps were cleared every second day as far as possible. If the pitfall-clearing day was missed for any reason, the pitfall traps were cleared the following day. For the purposes of this study, the contents of each trap were noted for the number of blow fly larvae only.

Scavenger attendance and activity

Scavenger attendance and activity was not expected given the caging of the carcasses. After small vertebrate scavengers gained access to the two CFDS/C carcasses in the first week of Cycle 1, the decision was taken to allow the experiment to run its course. This, in part, because resources were not available to purchase four new carcasses to restart the experimental cycle, and, in part, because small scavengers were entirely unexpected, and it was deemed prudent to learn more about them. Accordingly, the existing experimental circumstances (which permitted access by small vertebrate scavengers) were maintained for the duration of the entire data collection period to ensure comparability between seasonal replicates. The first two seasonal cycles (Cycle 1 | W-2014 and Cycle 2 | 2015) were used to identify the scavengers and deduce general information about their behaviour in both habitats under study. This was achieved via two methods:

(1) Damage (lesions) to each carcass caused by scavenging were documented daily as part of the data collection process. Scavenger lesions were drawn onto the carcass diagram of Form 1A of the data

collection forms. This, paired with corresponding photographs of each carcass, facilitated qualitative documentation of the pattern of scavenger feeding and carcass destruction over time.

(2) The rotating deployment of a motion-activated infrared Busnell® TrophyCam® camera trap (model 119436) at each carcass in each habitat.

A second camera trap (Busnell® TrophyCam® model 119676) became available from Cycle 3 (W-2015). This, paired with preliminary results from the first two seasonal cycles, resulted in the deployment of the two camera traps in the CFDS/C habitat for the duration of the third and fourth seasonal cycles. A camera trap was mounted at the apex of the northwest corner of the cage of each CFDS/C carcass. These were set up to capture three photos in burst mode upon triggering, rearming every 60 seconds. The data from the camera traps were downloaded once a month, on the same day as that of the weather stations. Data were procured to determine which species were present, in what numbers (abundance), how often and for how long they visited carcasses, and how the visitation patterns changed over the course of decomposition. Patterns of carcass destruction were tracked in the same manner as the first two seasonal cycles.

DATA HANDLING AND STATISTICAL ANALYSIS

All data were transcribed from their collection forms into tables for analysis in Microsoft Excel 2016. Gaps in continuous measures spanning the weather and decomposition data cohorts were identified and filled using linear interpolation (a form of regression analysis). The specifics of these are detailed in the relevant results chapters.

Statistical analyses were managed and performed in IBM SPSS Statistics 25 and RStudio v1.0.153. Descriptive statistics were compiled for all variables. All continuous data were tested for normality using a Shapiro-Wilk test (Shapiro & Wilk, 1965). Based on these the results, the appropriate parametric or non-parametric inferential tests were applied.

As a first step, the carcass biographics (starting weight, subcutaneous fat thickness, length, width, and stature) were investigated as possible confounders of the measures of decomposition with respect to sex, and season and habitat of deployment. These were examined using either a univariate analysis of variance (ANOVA) for parametric data (testing differences in the means between sexes, and between deployment conditions), or a Kruskal-Wallis test for non-parametric data (testing differences in the medians between sexes, and between deployment conditions). None were found to be major confounding factors and were thus retained in further analyses.

Hypothesis testing was then performed on each cohort of data (i.e. weather data, decompositional data, and insect data). For each cohort, the measured variables were tested for significant differences with respect to season, habitat, and habitat within-season, using the appropriate test (i.e. univariate ANOVA or Kruskal-Wallis test). The null hypothesis stipulated no differences in the means/medians (where applicable) of each measure between seasons, habitats, and habitats within-season; the alternative hypothesis stipulated significant differences in the means/medians (where applicable) of each measure between seasons, habitats, and habitats within-season. A p-value of ≤ 0.05 was chosen as the cut-off for significance. No statistical testing was performed on the quantitative scavenging data due to the lack of seasonal replicates of the data.

Chapter 3
Results – Weather Data

INTRODUCTION

Decompositional processes are ultimately modulated by weather. The biogeoclimatic specificity of decomposition arises from variations in habitat structure and composition (both faunal and floral), in part influenced by the geography of the land, and in part by the weather. The latter shapes the extent of vegetative cover through thermal and precipitative gradients, which, as the foundation of the ecosystem, affects the native faunal assemblage inclusive of bacteria, invertebrates, and vertebrates. A subset of these organisms function as the principle drivers of decay. Their action, too, is influenced by weather patterns, both at the broad scale (i.e. seasons), and the small (i.e. specific weather events such as cyclonic fronts [“cold fronts”] and heat waves). It is clear, then, that a comprehensive understanding of how decomposition is affected by the environment in which it occurs may only be achieved when considered in the framework of the local weather. Accurate and detailed measurement of the weather – both macro- and micro-climatically – during the period of study is thus imperative.

The present study employed two *Davis Wireless Vantage Pro 2* weather-monitoring stations (Davis Instruments, Hayward, CA, USA) – one in each habitat under study – for this purpose. The stations recorded data synchronously every 15 minutes for the following variables: ambient temperature (degrees Celsius [°C]), ambient relative humidity (RH; percentage [%]), atmospheric pressure (hectopascals [hPa]), rainfall (millimetres [mm]), solar radiation intensity (Watts per square meter [$W.m^{-2}$]), and wind velocity (kilometres per hour [$km.h^{-1}$] + direction at altitude of 1 m above ground level). For each 15-minute interval, both the average windspeed *and* the maximum gust speed were recorded. This yielded over 3 million datum points spanning the duration of the study. Occasional logger failure resulted in the loss of segments of data comprising less than 5% of the total dataset. In these instances, missing hourly temperature, RH, rainfall, and windspeed data were estimated from records at the South African Weather Service’s (SAWS) weather station at Cape Town International Airport situated 5.5 km away to the northwest.

The completed data sets were cleaned and summarised using MATLAB 9.1 (R2016b) providing the following variables for each 24-hour period, and separately for daytime and night time hours. Daylight hours are defined as the period in each 24-hour cycle when solar radiation > 30 $W.m^{-2}$; night hours defined as occurring when solar radiation ≤ 30 $W.m^{-2}$.

- Ambient temperature
    - Maximum
    - Minimum
    - Mode
    - Mean

  24-hours/ Daytime/ Night-time

- Ambient relative humidity
    - Mean – 24-hours/Daytime/Night-time
- Rainfall
    - Total – 24-hours/Daytime/Night-time
- Solar Radiation
    - Mean
    - As percentage of 24-hour day
- Windspeed
    - Mean – 24-hours/Daytime/Night-time
- Wind gust
    - Maximum – 24-hours

The variables comprising this summarised dataset were tested for significant differences with respect to season and habitat of deployment, as well as between habitats within-season. These results are available in Appendix 3.1. Each complete habitat-specific dataset was additionally summarised into overall averages/point values for each parameter. These are indicated in Table 3.1, which includes the maximum, minimum, and modal values for temperature, totals for rainfall, and means for all other measures, that occurred in each separate cycle.

Table 3.1: Summary of parameter values for each habitat calculated over each whole seasonal cycle (based on all available data). Values are heat-mapped to indicate intensities/proportions.

Variable	Unit	Cycle 1: W-2014		Cycle 2: S-2015		Cycle 3: W-2015		Cycle 4: S-2016	
		CFDS/O	CFDS/C	CFDS/O	CFDS/C	CFDS/O	CFDS/C	CFDS/O	CFDS/C
TEMP_24hr_MAX	°C	34.5	32.8	42.8	42.4	36.9	35.4	36.8	36.7
TEMP_24hr_MIN		-1.2	1.4	6.4	7.5	-0.1	2.8	7.4	9.6
TEMP_24hr_MODE		13.9	12.9	16.6	17.2	12	13.8	17.7	22.9
TEMP_24hr_MEAN		15.0	15.0	20.9	20.9	14.9	15.1	21.3	21.3
TEMP_day_MAX	°C	34.5	32.8	42.8	42.4	36.9	35.4	36.8	36.7
TEMP_day_MIN		1.6	3.2	9.1	8.3	3.4	3.46	7.7	9.6
TEMP_day_MODE		17.7	16.4	23.7	22.9	17.6	15.56	25.6	23.6
TEMP_day_MEAN		18.8	17.8	24.3	23.4	18.3	17.7	24.7	24.0
TEMP_night_MAX	°C	24.4	24.4	31.1	31.1	26.1	27.8	29.1	28.3
TEMP_night_MIN		-1.2	1.4	6.4	7.5	-0.1	2.8	7.4	9.7
TEMP_night_MODE		11.9	14	16.4	16.6	12.5	10.6	18.2	18.5
TEMP_night_MEAN		12.1	12.7	17.6	18.1	12.2	12.9	18.2	18.5
HUMIDITY_24hr_MEAN	%	78.2	80.3	70.3	71.2	77.4	78.8	72.1	72.6
HUMIDITY_day_MEAN		66.8	71.8	59.1	62.7	67.0	70.8	61.4	64.2
HUMIDITY_night_MEAN		87.0	87.2	81.0	79.9	85.4	85.3	82.5	82.0
RAIN_24hr_TOTAL	mm	287.4	130.4	25.4	8.6	168.6	93.2	40.2	19
RAIN_day_TOTAL		93.0	51.8	7.2	2.0	30.6	21.2	5.6	8.2
RAIN_night_TOTAL		194.4	78.6	18.2	6.6	138.0	72.0	34.6	10.8
SOLAR_daylight_PERCENT	$W.m^{-2}$	40.8	44.4	48.8	51.0	32.0	33.3	45.6	48.9
SOLAR_radiation_day_MEAN		414.6	36.5	549.6	57.7	406.8	46.5	517.9	76.5
WINDSPEED_24hr_MEAN	$km.h^{-1}$	5.19	1.5	7.4	1.0	6.4	0.7	7.6	1.7
WINDSPEED_day_MEAN		7.09	2.0	9.9	1.4	8.4	1.0	10.1	2.4
WINDSPEED_night_MEAN		3.7	1.0	5.0	0.6	4.9	0.5	5.1	0.9
WINDGUST_24hr_MAX		46.7	29	43.5	16.1	51.5	16.1	45.1	25.7

°C = degrees Celsius; **%** = percentage; **mm** = millimetres; **$W.m^{-2}$** = Watts per square meter; **$km.h^{-1}$** = kilometres per hour.

This broad summary, paired with the statistical analysis, reveals some interesting weather patterns: in line with Cape Town's Mediterranean climate, winter cycles (W-2014 & W-2015) have significantly more rain than summer cycles (S-2015 & S-2016) (H(1) = 31.715, ***p* = 0.000**, cumulative rainfall of 65.6 mm for both summers, 456.0 mm for winter). It is interesting to note that W-2014 received 41% more rain than W-2015. This is reflective of the severe drought Cape Town was experiencing at the time of writing, which began in 2014 and intensified through 2016 and 2017. Interestingly, this pattern was reversed for the summer cycles, with S-2016 receiving 44% more rain than S-2015, although this was still only 27% of the least amount of winter rainfall received. Most rain fell at night – true for all seasons, likely due to cooler air temperatures at night promoting condensation and precipitation. A trend for an increasing proportion of the total rain to fall at night was also noted (Figure 3.1).

The dry summers were hot. Ambient (air-based) thermal maxima of up to 42.8°C were recorded (S-2015), although this is anomalously high compared to the other seasons. This said, S-2015 was a particularly harsh season compared to the others, bearing record to the highest peak temperatures (both during the day and at night), the lowest RH (again, both day and night), the least rainfall, and the most intense solar radiation. This did not, however, make it the hottest seasonal cycle. S-2016 was the hottest seasonal cycle, with the highest 24hr, daytime, and night-time minimum, modal, and mean temperatures.

Being only 38 m above mean sea level, freezing temperatures (≤ 0°C) were rare at the research site, but both winters saw the air temperature fall below zero at least once (lowest minimum of -1.2°C during W-2014, and -0.1°C during W-2015). Although thermal maxima during the two winters were similar to that of S-2016, they were considerably, and significantly, cooler overall (average 24hr mean temperature 29% cooler than that for summer; $H(1) = 917.762$, $\boldsymbol{p = 0.000}$, median temperature of 20.87°C for summer, 14.67°C for winter). The two winters were, however, far more comparable across their thermal parameters compared to the two summers. The same was true for humidity and solar radiation intensity.

Cape Town is one of the windiest cities in South Africa. In summer, the "Cape Doctor" (southerly/south-easterly wind) blows across the peninsula, sometimes with gale-force intensity. In winter, strong winds are often north/north-easterly/-westerly, associated with cyclonic "cold fronts" which spiral up from Antarctica. Internationally, windspeeds are classified according to the Beaufort Scale (Royal Meteorological Society [RMetS], 2013), summarised in Table 3.2.

The average seasonal wind speeds recorded at the research site, as detailed in Table 3.1, never exceeded the classification of a "light breeze". Overall daily mean 24hr windspeeds of up to 7.6 $km.h^{-1}$ were recorded during summer (S-2016); that for winter slower at 6.4 $km.h^{-1}$ (W-2015), a significant average difference of 19% ($H(1) = 32.867$, $\boldsymbol{p = 0.000}$, median windspeed of 2.97 $km.h^{-1}$ for summer, 2.27 $km.h^{-1}$ for winter). The averages recorded for the two summers were more comparable than those for winter, the former differing by only 2%, the latter by 19%. Wind was always stronger during the day, regardless of season, with mean windspeeds 42-50% higher than that measured at night. Although these measures appear to be quite low and not in keeping with the title of second windiest city in South Africa, this is simply an artefact of averaging values over the duration of the whole season, and the recording altitude. Specifically, winds recorded at or near ground level – such as the case with this study – can be expected to be as much as 30% slower than those recorded at the standard altitude of 10 m (Dewce, 2016). The seasonal-specific analyses which follow will reveal the true nature of the wind experienced at the research site.

Table 3.2: Summary of Beaufort Scale windspeed ratings and associated descriptions (Royal Meteorological Society [RMetS], 2013).

Wind speeds		
Beaufort Scale Rating	Wind Speed (km.h^{-1})	Description
0	< 1	Calm
1	1-5	Light air
2	6-11	Light breeze
3	12-19	Gentle breeze
4	20-28	Moderate breeze
5	29-38	Fresh breeze
6	39-49	Strong breeze
7	50-61	High wind/near gale
8	62-74	Gale/fresh gale
9	75-88	Strong/severe gale
10	89-102	Storm/whole gale
11	103-117	Violent storm
12	≥ 118	Hurricane force

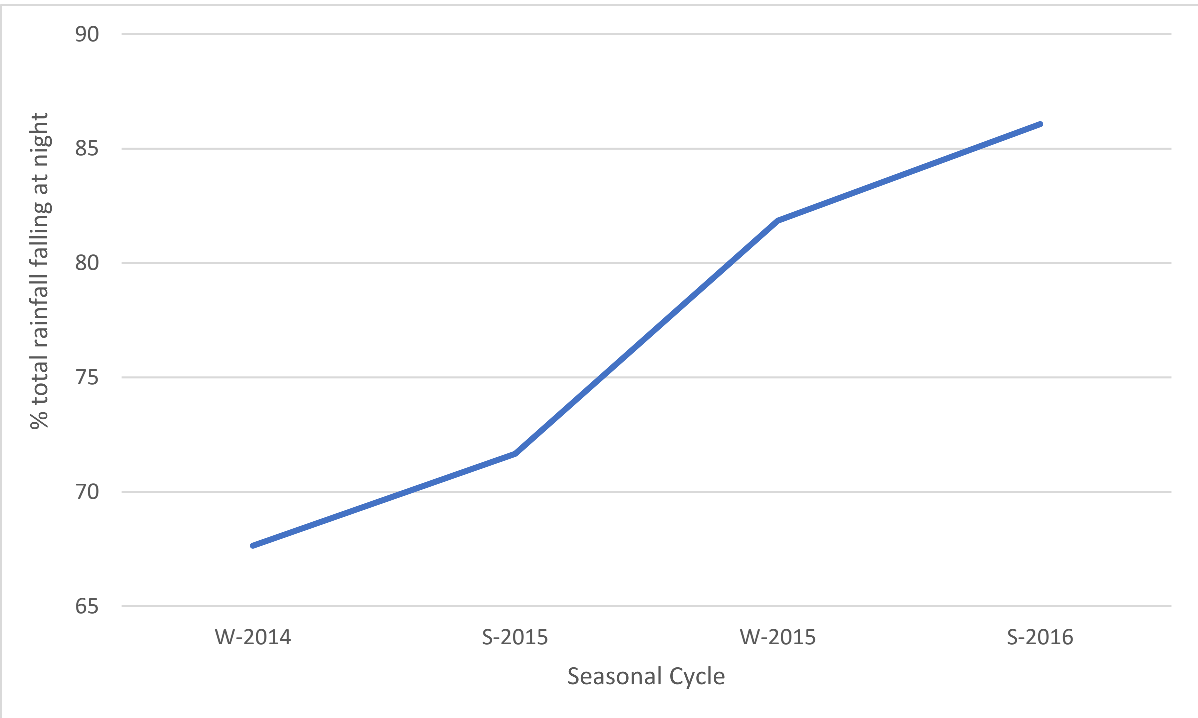


Figure 3.1: Percentage of total rainfall falling at night across the four seasonal cycles.

It serves to highlight that all values written about thus far have been those for the CFDS/O habitat. This is because the weather measured in the CFDS/O habitat is reflective of the prevailing weather conditions at the research site as the weather stations were not sheltered in any way. The CFDS/C habitat, on the other hand, has dense tree cover which alters the measures of some parameters. Specifically, and as evident in Table 3.1, the cover of the CFDS/C habitat significantly reduces the amount of rain and sunlight reaching the carcasses, and acts as a formidable windbreak. Rainfall was reduced by 50% in winter ($H(1) = 14.107$, $\boldsymbol{p = 0.000}$, cumulative rainfall of 456.0 mm for the CFDS/O, 223.6 mm for the CFDS/C) and 60% in summer ($H(1) = 13.992$, $\boldsymbol{p = 0.000}$, cumulative rainfall of 65.6 mm for the CFDS/O, 27.6 mm for the CFDS/C), the difference due to rainfall intensity (stronger rainfall events in winter have higher penetration of the tree cover). Sunlight penetration was reduced by almost 90% in winter ($H(1) = 737.150$, $\boldsymbol{p = 0.000}$, median solar radiation of 387.49 $W.m^{-2}$ for the CFDS/O, 36.24 $W.m^{-2}$ for the CFDS/C) and 87% in summer ($H(1) = 449.255$, $\boldsymbol{p = 0.000}$, median solar radiation of 560.99 $W.m^{-2}$ for the CFDS/O, 65.57 $W.m^{-2}$ for the CFDS/C) – highlighting the density of the vegetation. Wind inside the thickets was only around 20% of that measured outside, in both winter ($H(1) = 680.006$, $\boldsymbol{p = 0.000}$, median 24hr windspeed of 5.26 $km.h^{-1}$ for the CFDS/O, 0.73 $km.h^{-1}$ for the CFDS/C) and summer ($H(1) = 446.143$, $\boldsymbol{p = 0.000}$, median 24hr windspeed of 6.60 $km.h^{-1}$ for the CFDS/O, 1.14 $km.h^{-1}$ for the CFDS/C).

In some respects, the tree cover acted like a greenhouse. This is evidenced by the significant increase in daytime RH of 5-6% (winter [$H(1) = 28.662$, $\boldsymbol{p = 0.000}$, median RH of 68.47% for the CFDS/O, 72.22% for the CFDS/C] and summer [$H(1) = 22.355$, $\boldsymbol{p = 0.000}$, median RH of 61.22% for the CFDS/O, 64.83% for the CFDS/C]) compared to the CFDS/O, and, more tellingly, the *retention* of ambient moisture within tree cover, especially during the daytime. Indeed, RH is the only value which is higher in the CFDS/C than in the CFDS/O. There is also evidence for the retention of ambient heat; specifically, slightly higher 24hr modal temperatures compared to that measured in the CFDS/O in three of the four seasonal cycles. Temperatures were also marginally more stable, with less thermal fluctuation (as measured by the diurnal temperature range [DTR]) in the CFDS/C compared to the CFDS/O – true for all seasons. However, no significant differences exist between the habitats with respect to thermal measures. This is likely because the weather stations measure the air temperature only, which is unlikely to vary much in very close geographical settings such the two habitats. The weather stations do not factor in infrared heat load from direct sunlight. Had they done so, a significant difference in thermal measures could be possible given the marked reduction in solar radiation within the tree cover.

Specific Local Weather Events

The results described only reflect the broad-scale differences which exist on a seasonal level. But it is the effect of smaller impacts or changes brought about by specific weather events which, accumulated over a season, help drive differences in decomposition. Thus, it is imperative to have knowledge of these events to properly interpret the other data and deduce their relationships. As such, below follows a detailed account of the weather for each season, as recorded in the CFDS. Several local weather events were defined and are summarised in Table 3.3.

Table 3.3: Summary of defined local weather events.

Weather event	Definition
Hot Day	No South African formal definition; defined in this study as ambient $T_{24hr\ MAX} \geq 32°C$ (average maximum temperature for hottest month in Cape Town).
Heat Spike	No South African formal definition; defined in this study as ambient $T_{24hr\ MAX} \geq 37°C$ ($\geq$ 5°C above average maximum temperature for hottest month in Cape Town).
Hot Spell	No South African formal definition: defined in this study as ambient $T_{24hr\ MAX} \geq 32°C$ for a period of three or more consecutive days.
Heat Wave	When, for three [consecutive] days, the maximum temperature [ambient $T_{24hr\ MAX}$] is five degrees (5°C) higher than the mean maximum for the hottest month for that particular place [i.e. 32°C for Cape Town] (SAWS, 2018b).
Cold Front	A cyclonic mass of cold air of polar origin. When this mass meets a mass of warmer air, it undercuts it and drives the warm air upwards. Large cumulonimbus clouds form along the boundary of the two masses. The passing of the front over land is marked by successive bands of precipitation, strong gusts of wind, and a notable drop in ambient air temperature (SAWS, 2018c).
Cold Day	No South African formal definition; defined in this study as ambient $T_{DAY\ MIN} < 7°C$ (average minimum temperature for coldest month in Cape Town).
Cold Snap	No South African formal definition; defined in this study as ambient $T_{DAY\ MIN} < 7°C$ for a period of two or more consecutive days (per the World Meteorological Organisation's definition for the temporal persistence of a cold wave; Dewce, 2016:16).
Freezing Conditions	Ambient $T_{MIN} \leq 0°C$.
Dry Day	No South African formal definition; defined in this study as mean daytime ambient RH < 40%.
Dry Spell	No South African formal definition; defined in this study as mean daytime ambient RH < 40% for three or more consecutive days.
Windy Day	No South African formal definition; National Oceanic and Atmospheric Administration's (NOAA) definition employed: Daytime windspeed/gust measures of 20-30 $m.h^{-1}$ (32.19-48.28 $km.h^{-1}$) (NOAA, 2009), i.e. "Fresh Breeze" or greater on Beaufort Scale (RMetS, 2013).
Mummification-inducing conditions	No South African formal definition; defined in this study as a combination of four weather criteria on the day in question: a 24hr maximum temperature > 30°C, a mean solar radiation > 600 $W.m^{-2}$, a mean daytime humidity < 50%, and a windy day.
Near-mummification-inducing conditions	No South African formal definition; defined in this study as a combination of at least three of the four mummification-inducing criteria, or two of the thermal, humidity, and solar radiation criteria, plus at least two consecutive windy days immediately preceding the day in question.

CYCLE 1: WINTER 2014

A tabular summary of the daily parameter values for Cycle 1 (W-2014) is provided in Appendix A3.2. These values are presented graphically in Figures 3.2-3.4.

Figure 3.2 summarises daily temperatures (24hr, daytime, and night-time). Only one hot day was recorded (2014/10/06), with a maximum 24hr temperature of 34.5°C – the highest temperature recorded during the seasonal cycle. Accordingly, no heat spikes, hot spells or heat waves were experienced, but eight days registered a maximum temperature > 30°C. In contrast, there were 14 cold days and two cold snaps (of four and two days in length, respectively). Three cold days also saw the only three freezing temperatures recorded: -0.4°C (2014/07/07), -1.2°C (the lowest temperature recorded for the season; 2014/07/10), and -0.6°C (2014/07/21). It serves to note that no freezing temperatures were observed in the CFDS/C habitat (lowest minimum temperature of 1.4°C). Cold days usually succeeded cold fronts – of which there were 15 – or occurred towards the end of a large cold front (characterised by a duration of three or more days), of which there were nine.

Figure 3.3 summarises the solar radiation intensity, RH, and rainfall parameters for Cycle 1 (W-2014). With regard to the first, there is an increasing temporal trend for solar radiation intensity, in line with the change of seasons from winter, through spring, into summer. The one hot day recorded was preceded by four consecutive days during which the mean solar radiation was >550 $W.m^{-2}$. Mean ambient RH remained relatively high for the first two months of the seasonal cycle. Only five dry days were recorded, all after the onset of spring (September 1st), with a seasonal minimum mean daytime RH of 33.0%. No dry spells occurred during this seasonal cycle. All rainfall events were associated with cold fronts. The most rain for any one day was recorded on 2014/07/04, during which 32.8 mm of rain fell, all at night. The most rain which fell during daylight hours on any day was 17.8 mm on 2014/07/17. All rainfall clusters show a decreasing temporal trend with respect to volume, in line with the seasonal transition from winter to summer which sees a progressive weakening of cold fronts. No mummification-inducing conditions were observed, but near-mummification-inducing conditions were observed on six days, three of which were consecutive, and all towards the end of the seasonal cycle.

Figure 3.4 and Tables 3.4.1 and 3.4.2 summarise the wind speed parameters for Cycle 1 (W-2014). The prevailing winds for the season were northerly (towards 0°/N), accounting for 22% of all wind directions recorded. North-easterlies (towards 210°/SSW) – associated with cold fronts – were the next most frequently observed, accounting for 17% of all wind directions recorded. Wind speeds of 2 $km.h^{-1}$ or less constituted the majority of wind recorded (31%) (Figure 3.4). 50 windy days were recorded, representing 624 gusts greater than 29 $km.h^{-1}$, the maximum of which was 46.7 $km.h^{-1}$

(Tables 3.4.1, 3.4.2). The maximum average windspeed recorded for any 15-minute interval was 24.1 km.h^{-1} (Figure 3.4).

CYCLE 2: SUMMER 2014/15

A tabular summary of the daily parameter values for Cycle 2 (S-2015) is provided in Appendix 3.3. These values are presented graphically in Figures 3.5-3.7.

Figure 3.5 summarises daily temperatures (24hr, daytime, and night-time). Seven hot days were recorded, with a maximum 24hr temperature of 42.8°C (2015/03/03), classifying as the only heat spike observed, and the highest ambient temperature recorded during the entire experimental period. Almost one fifth of all days (13/77) saw the 24hr modal temperature within 1°C of the 24hr maximum temperature. No hot spells, heat waves, cold days, cold snaps, or freezing temperatures were experienced during this seasonal cycle, but there were 19 days where the maximum temperature exceeded 30°C. Only six cold fronts occurred, two-thirds of which (4/6) of which were only one day in length.

Figure 3.6 summarises the solar radiation intensity, RH, and rainfall parameters for Cycle 2 (S-2015). With regard to the first, there is a decreasing temporal trend for solar radiation intensity, in line with the change of seasons from summer into autumn. All hot days recorded were preceded by at least two consecutive days during which the mean solar radiation was >550 W.m^{-2}. As with Cycle 1 (W-2014), only five dry days were recorded, with the lowest average daytime RH measured at 26.7%. No dry spells occurred during this seasonal cycle. All rainfall events were associated with cold fronts. The most rain for any one day was recorded on 2015/01/16, during which 9.8 mm of rain fell, all, bar 0.2 mm, at night. Very little rain fell during daylight hours, amounting to no more than 0.4 mm on any one day. The rainfall on 2015/01/16 is anomalously high compared to the other rainfall events and was associated with a particularly strong cold front known as a “cut-off low”. There is no other trend with respect to rainfall during this seasonal cycle. Mummification-inducing conditions were observed on seven days, and near-mummification-inducing conditions were observed on eight days. These conditions occurred in six distinct groups, the longest – five days in length – was recorded in the second week of the seasonal cycle.

Figure 3.7 and Tables 3.4.3-3.4.4 summarise the wind speed parameters for Cycle 2 (S-2015). The prevailing winds for the season were south-south-westerly (towards 30°/NNE), accounting for 28% of all wind directions recorded. Southerlies (towards 0°/N) and south-westerlies (towards 60°/NE) were the next most frequently observed, accounting for 20% and 17%, respectively, of all wind directions recorded. Wind speeds of 2 km.h^{-1} or less, and 8-10 km.h^{-1}, constituted the majority of wind recorded

(21% and 20%, respectively) (Figure 3.7). 49 windy days were recorded, representing 823 gusts greater than 29 km.h^{-1}, the maximum of which was 43.5 km.h^{-1} (Tables 3.4.3 & 3.4.4). The maximum average windspeed recorded for any 15-minute interval was the same as for Cycle 1: 24.1 km.h^{-1} (Figure 3.7).

CYCLE 3: WINTER 2015

A tabular summary of the daily parameter values for Cycle 3 (W-2015) is provided in Appendix 3.4. These values are presented graphically in Figures 3.8-3.10.

Figure 3.8 summarises the daily temperature (24hr, daytime, and night-time). Three hot days were recorded, with a maximum 24hr temperature of 36.9°C (2015/11/04), and the 24hr maximum temperature exceeded 30°C on 10 days. No hot spells or heat waves were experienced, and although the maximum 24hr temperature for 2015/11/04 did not meet the criteria for a heat spike, it was very close, and its effect should be considered to be in the league of a heat spike. In contrast, there were 16 cold days and five cold snaps. No cold snap lasted more than three days. Only one freezing temperature was recorded during the seasonal cycle, with a minimum 24hr temperature of -0.1°C (2015/07/26). As with Cycle 1 (W-2014), no freezing temperatures were observed in the CFDS/C habitat (lowest minimum 24hr temperature of 2.8°C). Cold days always succeeded cold fronts – of which there were 17. Interestingly, the durations of cold fronts were noticeably shorter compared to those observed during Cycle 1 (W-2014), with only one longer than two days. This is likely related to an escalation in the severity of the drought.

Figure 3.9 summarises the solar radiation intensity, RH, and rainfall parameters for Cycle 3 (W-2015). With regard to the first, and as with Cycle 1 (W-2014), there is an increasing temporal trend for solar radiation intensity, in line with the change of seasons from winter, through spring, into summer. Two of the three hot days were preceded by at least one day during which the mean solar radiation was >550 W.m^{-2}. Interestingly, mean ambient RH was generally higher during this seasonal cycle compared to Cycle 1 (W-2014), with no dry days or dry spells occurring. All rainfall events were associated with cold fronts. The most rain for any one day was recorded on 2015/07/23, during which 34.0 mm of rain fell, all, bar 0.2 mm, at night. The most rain which fell during daylight hours on any day was 10.6 mm on 2015/11/01. The temporal rainfall pattern was more erratic during this seasonal cycle compared to Cycle 1 (W-2014), but one consistent feature was markedly less rain falling during rainfall events. As with Cycle 1, no mummification-inducing conditions were observed, but near-mummification-inducing conditions were observed on four days, three of which were consecutive, and all towards the end of the seasonal cycle.

Figure 3.10 and Tables 3.4.5-3.4.6 summarise the wind speed parameters for Cycle 3 (W-2015). As with Cycle 1 (W-2014), the prevailing winds for the season were northerly (towards 0°/N), accounting for 19% of all wind directions recorded. But in contrast to Cycle 1 (W-2014), and more in line with Cycle 2 (S-2015), south-south-westerlies (towards 30°/NNE) and south-south-easterlies (towards 330°/NNW) were the next most frequently observed, accounting for 15% and 12%, respectively, of all wind directions recorded. This said, north-westerlies (towards 150°/SSE) – associated with cold fronts – were not far behind, accounting for 11% of all wind directions recorded. In general, there was greater dispersion of wind direction during this seasonal cycle compared to the preceding two. 47 windy days were recorded, representing 772 gusts greater than 29 km.h^{-1} (Table 3.4.5). A maximum gust speed of 51.5 km.h^{-1} was recorded, the strongest of the entire experimental period and the only "high wind/near gale" condition observed. The maximum average windspeed recorded for any 15-minute interval was 25.7 km.h^{-1} (Figure 3.10).

CYCLE 4: SUMMER 2015/16

A tabular summary of the daily parameter values for Cycle 4 (S-2016) is provided in Appendix 3.6. These values are presented graphically in Figures 3.11-3.13.

Figure 3.11 summarises the daily temperatures (24hr, daytime, and night-time). 16 hot days were recorded – more than double the number recorded during S-2015. The highest maximum 24hr temperature was 36.7°C (2016/01/17). Although this did not meet the criteria for a heat spike, as with the maximum 24hr temperature for Cycle 3 (W-2015), it was very close, and its effect should be considered to be in the league of a heat spike. No heat waves were recorded, but there were two hot spells; the first longer than a week (eight days; 2016/01/15 – 2015/01/22), and the second only two days (2016/02/09 – 2016/02/10). The 24hr maximum temperature exceeded 30°C on 21 days. No cold days, cold snaps, or freezing temperatures were experienced during this seasonal cycle; the lowest minimum 24hr temperature was only slightly lower than 10°C (9.6°C, 2016/03/14). As with Cycle 2 (S-2015), only six cold fronts occurred, none longer than two days, and half (3/6) of which were only one day in length.

Figure 3.12 summarises the solar radiation intensity, RH, and rainfall parameters for Cycle 2 (S-2015). With regard to the first, and as with Cycle 2 (S-2015), there is a decreasing temporal trend for solar radiation intensity, in line with the change of seasons from summer into autumn. All hot days recorded were preceded by at least two consecutive days during which the mean solar radiation was >550 W.m^{-2}. Curiously, no dry days were recorded for this season, the lowest mean daytime RH dipping to 44.1%. The most rain for any one day was recorded on 2016/03/26, during which 20.4 mm of rain fell, all at night. Little rain fell during daylight hours, amounting to no more than 3 mm on any one day. As with the anomalous rainfall event of Cycle 2, the rainfall on 2016/03/26 is anomalously high compared to the other rainfall events and was associated with a cut-off low. Other than the fact that all rain fell during cold fronts, there is no other trend with respect to rainfall during this seasonal cycle. Mummification-inducing conditions were observed on two days, and near-mummification-inducing conditions were observed on eight days. These conditions occurred in five distinct groups, with two, of three days in length each, occurring during the first and second weeks of the seasonal cycle.

Figure 3.13 and Tables 3.4.7 and 3.4.8 summarise the wind speed parameters for Cycle 4 (S-2016). As with Cycle 2, the prevailing winds for the season were south-south-westerly (towards 30°/NNE), accounting for 27% of all wind directions recorded. South-westerlies (towards 60°/NE) and southerlies (towards 0°/N) were the next most frequently observed, accounting for 16% and 10%, respectively, of all wind directions recorded. North-westerlies (towards 150°/SSE) – associated with cold fronts – accounted for 9% of all wind directions recorded. The distribution of wind directions for this seasonal cycle is comparable with that of Cycle 2 (S-2015). Thirty-nine (39) windy days were recorded, representing 741 gusts greater than 29 $km.h^{-1}$ (Tables 3.4.7 & 3.4.8) – a 10% reduction compared to Cycle 2 (S-2015). A maximum gust speed of 45.1 $km.h^{-1}$ was recorded. The maximum average windspeed recorded for any 15-minute interval was 29.0 $km.h^{-1}$ – the highest for the entire experimental period (Figure 3.13).

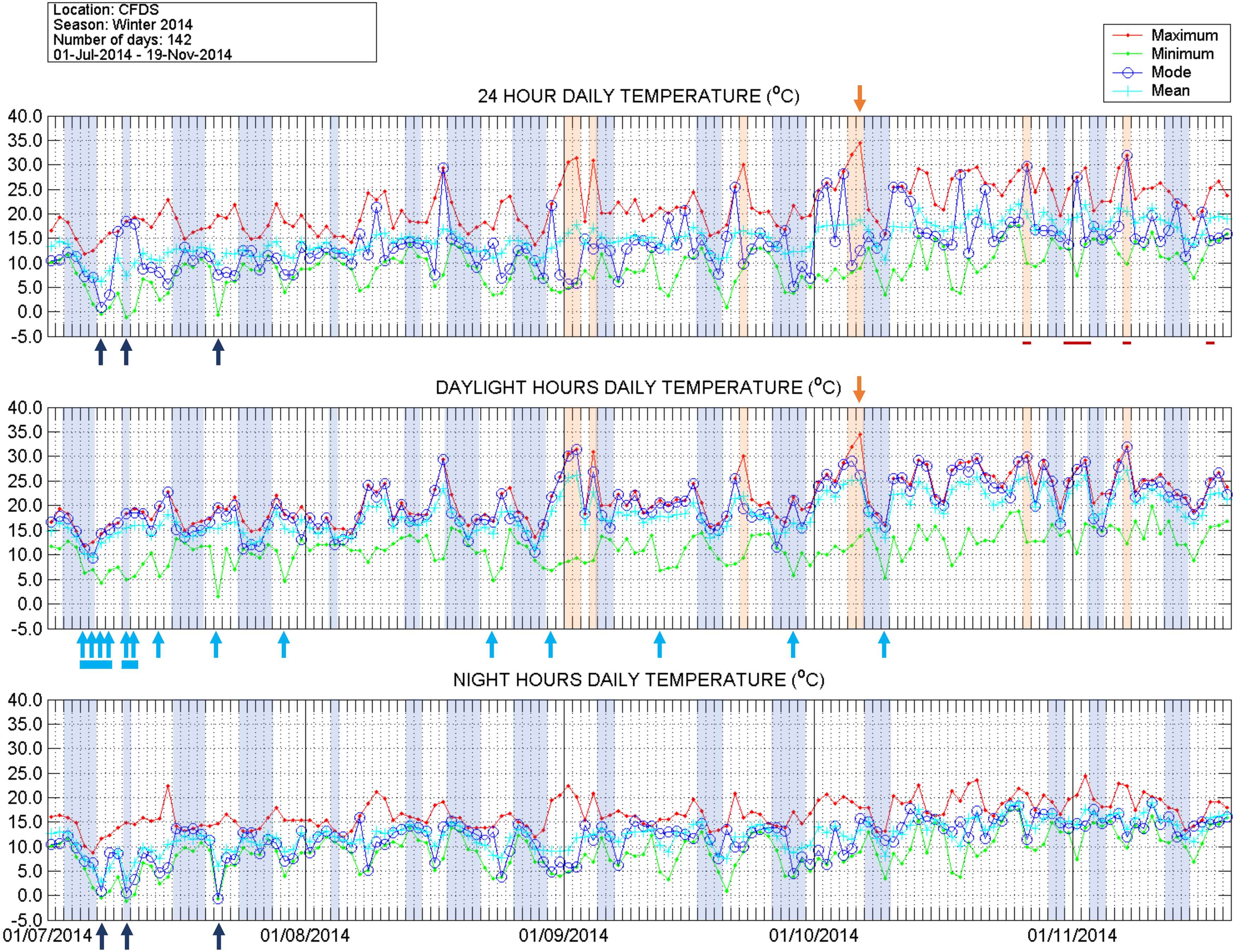


Figure 3.2: *24hr, daytime, and night time maximum, minimum, modal, and mean ambient temperatures (°C) for Cycle 1 (W-2014). One hot day is indicated with ↓, three freezing temperatures are indicated with ↑, 14 cold days are indicated with ↑, two cold snaps are denoted by ▬ (the length of which indicates duration), 15 cold fronts are highlighted with ▭, eight days with a maximum ambient temperature > 30°C are highlighted with ▭, and six days with near-mummification-inducing conditions are indicated with ▬.*

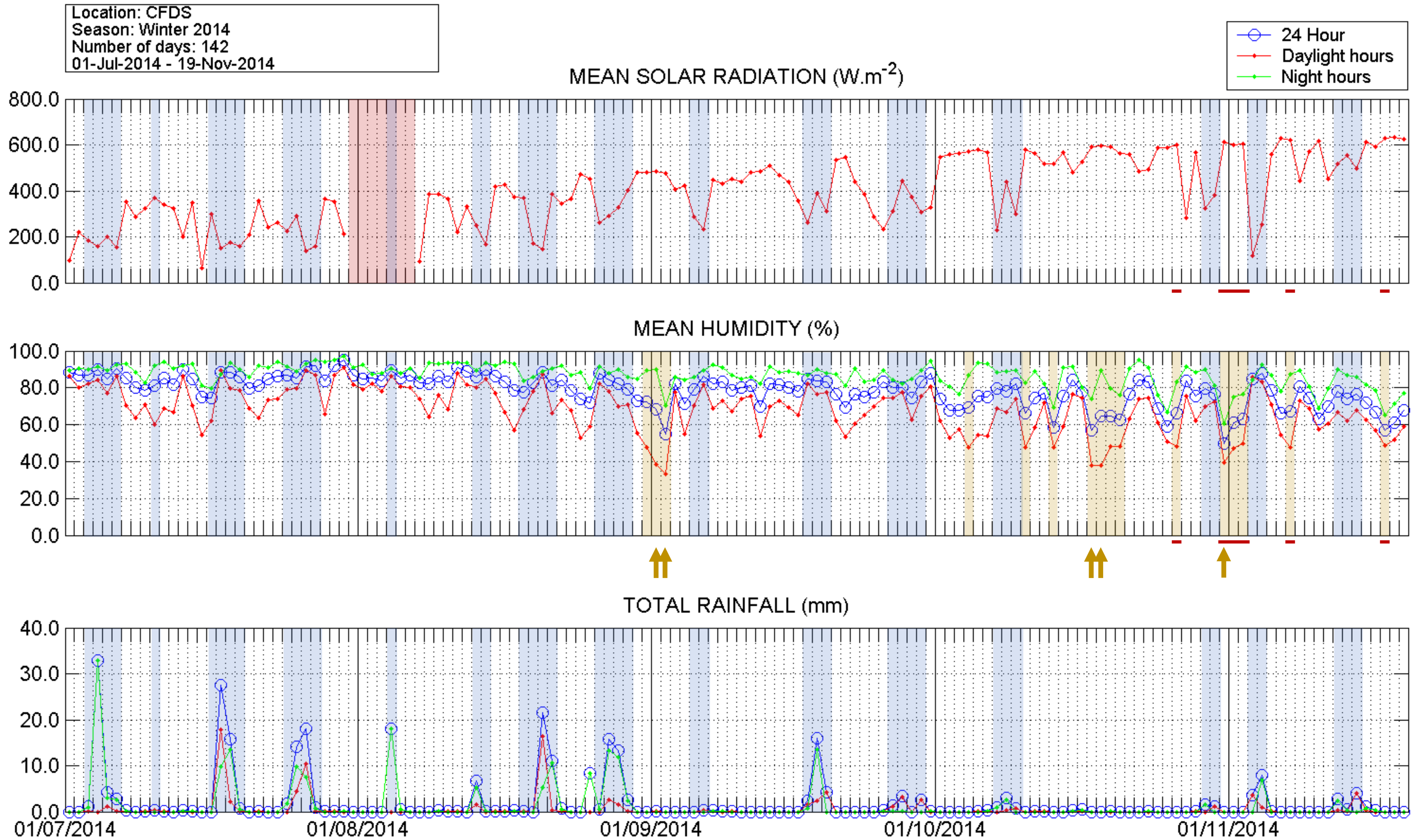
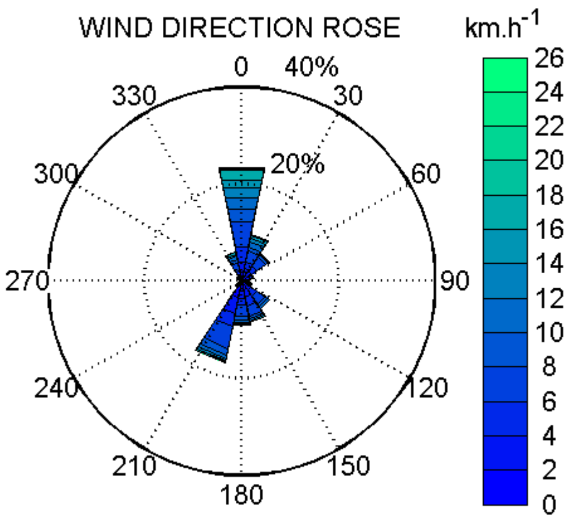


Figure 3.3: *Mean solar radiation (W.m⁻²), 24hr, daytime, and night time mean humidity (%), and total rainfall (mm) for Cycle 1 (W-2014). Five dry days are indicated with ↓ 15 cold fronts are highlighted with ▭, 17 days with mean daytime humidity < 50% are highlighted with ▭, six days with near-mummification-inducing conditions are indicated with —, and gaps in the original data which could not be interpolated are indicated with ▭.*

Location: CFDS
Season: Winter 2014
Number of days: 142
01-Jul-2014 - 19-Nov-2014

JOINT DISTRIBUTION OF WIND SPEED AND DIRECTION

	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Σ
0-2	3.44	2.27	2.40	1.21	0.67	0.82	1.31	2.27	2.48	5.11	1.81	2.03	0.94	1.23	1.42	1.82	31.22
2-4	1.93	1.27	1.12	0.68	0.38	0.39	0.94	1.33	1.33	2.80	0.42	0.05	0.06	0.14	0.23	0.47	13.55
4-6	2.61	1.17	1.23	0.39	0.27	0.34	1.26	1.58	1.06	2.37	0.09	0.02	0.02	0.03	0.17	0.67	13.27
6-8	2.52	0.93	0.97	0.13	0.13	0.18	1.07	1.12	1.12	2.21				0.03	0.02	0.80	11.23
8-10	4.08	1.75	1.35	0.10	0.12	0.17	1.17	1.20	1.74	2.80				0.02	0.08	1.24	15.84
10-12	2.01	0.88	0.16	0.04	0.03	0.01	0.39	0.31	0.31	0.64				0.02	0.01	0.57	5.38
12-14	1.72	0.67	0.06	0.02	0.01		0.18	0.14	0.22	0.30					0.01	0.39	3.73
14-16	1.49	0.43	0.04	0.03			0.02	0.08	0.14	0.18					0.01	0.27	2.70
16-18	1.81	0.17	0.01	0.05					0.16	0.26						0.14	2.60
18-20	0.22	0.02	0.01							0.03							0.29
20-22	0.09	0.01	0.01														0.10
22-24	0.08																0.08
24-26	0.01																0.01
Σ	22.02	9.59	7.36	2.65	1.61	1.91	6.33	8.03	8.57	16.71	2.31	2.10	1.01	1.48	1.95	6.36	100.00



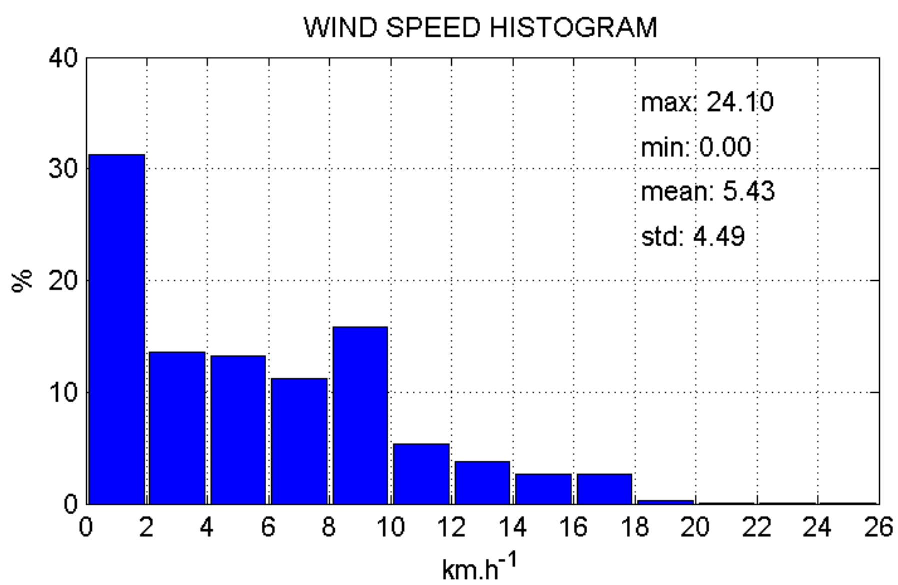


Figure 3.4: Summary of wind conditions (magnitude and direction) recorded for Cycle 1 (W-2014).

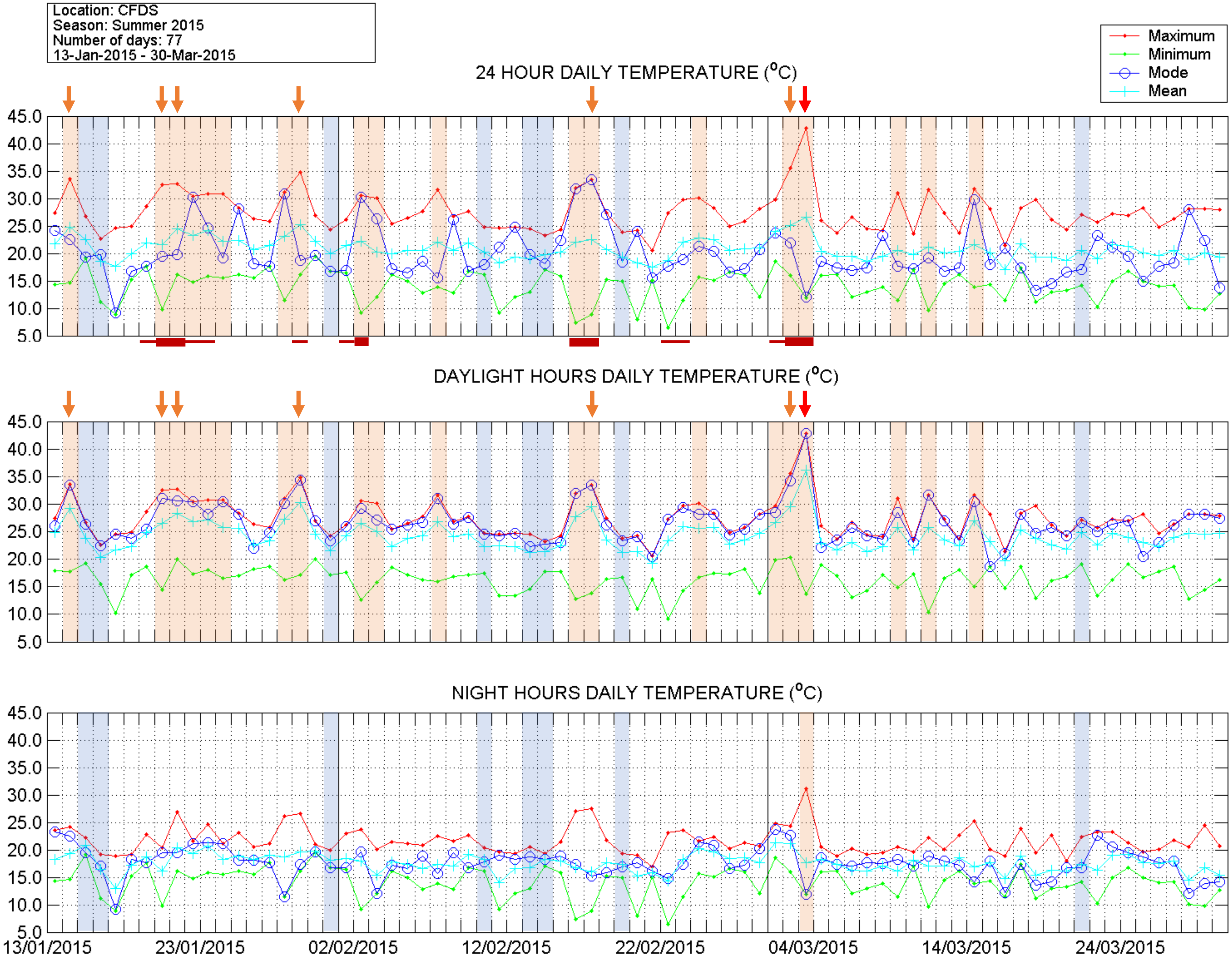


Figure 3.5: *24hr, daytime, and night time maximum, minimum, modal, and mean ambient temperatures (°C) for Cycle 2 (S-2015). Seven hot days are indicated with ↓, one heat spike is indicated with ↓, six cold fronts are highlighted with ▭, 19 days with a maximum ambient temperature > 30°C are highlighted with ▭, seven days with mummification-inducing conditions are indicated with ■, and eight days with near-mummification-inducing conditions are indicated with ▬.*

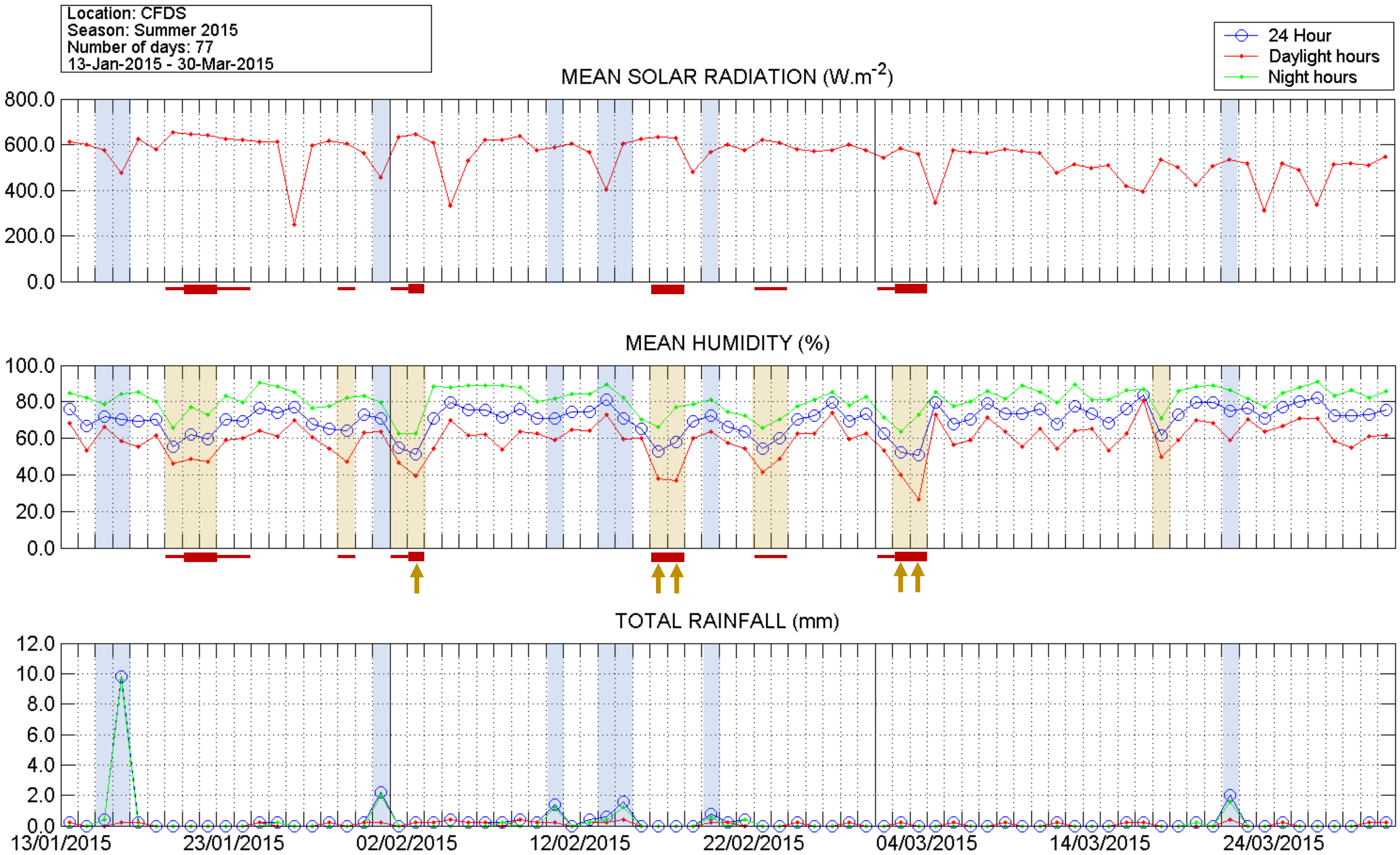
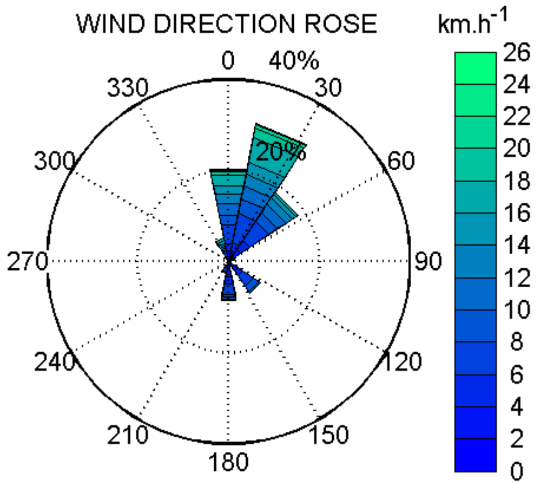


Figure 3.6: *Mean solar radiation (W.m^{-2}), 24hr, daytime, and night time mean humidity (%), and total rainfall (mm) for Cycle 2 (S-2015). Five dry days are indicated with ↑, six cold fronts are highlighted with ▭, 13 days with mean daytime humidity < 50% are highlighted with ▭, seven days with mummification-inducing conditions are indicated with ▬, and eight days with near-mummification-inducing conditions are indicated with –.*

Location: CFDS
Season: Summer 2015
Number of days: 77
13-Jan-2015 - 30-Mar-2015

JOINT DISTRIBUTION OF WIND SPEED AND DIRECTION

	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Σ
0-2	2.16	2.03	2.50	1.71	0.66	1.04	1.61	0.95	1.81	1.46	1.23	0.79	0.88	0.51	0.74	0.85	20.90
2-4	1.09	1.11	1.52	0.26	0.03	0.12	1.04	0.22	1.69	0.36	0.13	0.03	0.01		0.06	0.31	7.98
4-6	1.46	1.50	2.12	0.12		0.01	1.20	0.13	1.44	0.39	0.03	0.01			0.06	0.31	8.78
6-8	1.68	2.66	2.13	0.03		0.07	1.15	0.04	1.27	0.42					0.03	0.60	10.08
8-10	3.93	6.00	4.33			0.03	2.61	0.10	1.34	0.35						1.08	19.77
10-12	2.41	2.67	1.96	0.01		0.01	0.45		0.34	0.06						0.36	8.27
12-14	1.94	2.23	1.49				0.06		0.18	0.07					0.01	0.55	6.54
14-16	1.65	2.47	0.85	0.01					0.03							0.53	5.53
16-18	2.17	4.82	0.55						0.01							0.45	8.01
18-20	0.66	1.94	0.03														2.63
20-22	0.29	0.74															1.04
22-24	0.18	0.22															0.39
24-26		0.07															0.07
Σ	19.61	28.45	17.47	2.15	0.69	1.28	8.11	1.44	8.11	3.12	1.39	0.83	0.89	0.51	0.90	5.03	100.00



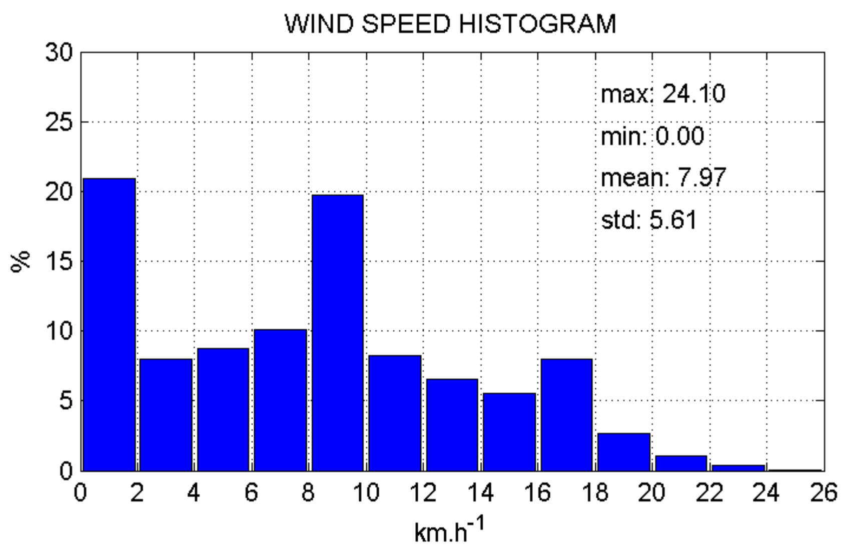


Figure 3.7: Summary of wind conditions (magnitude and direction) recorded for Cycle 2 (S-2015).

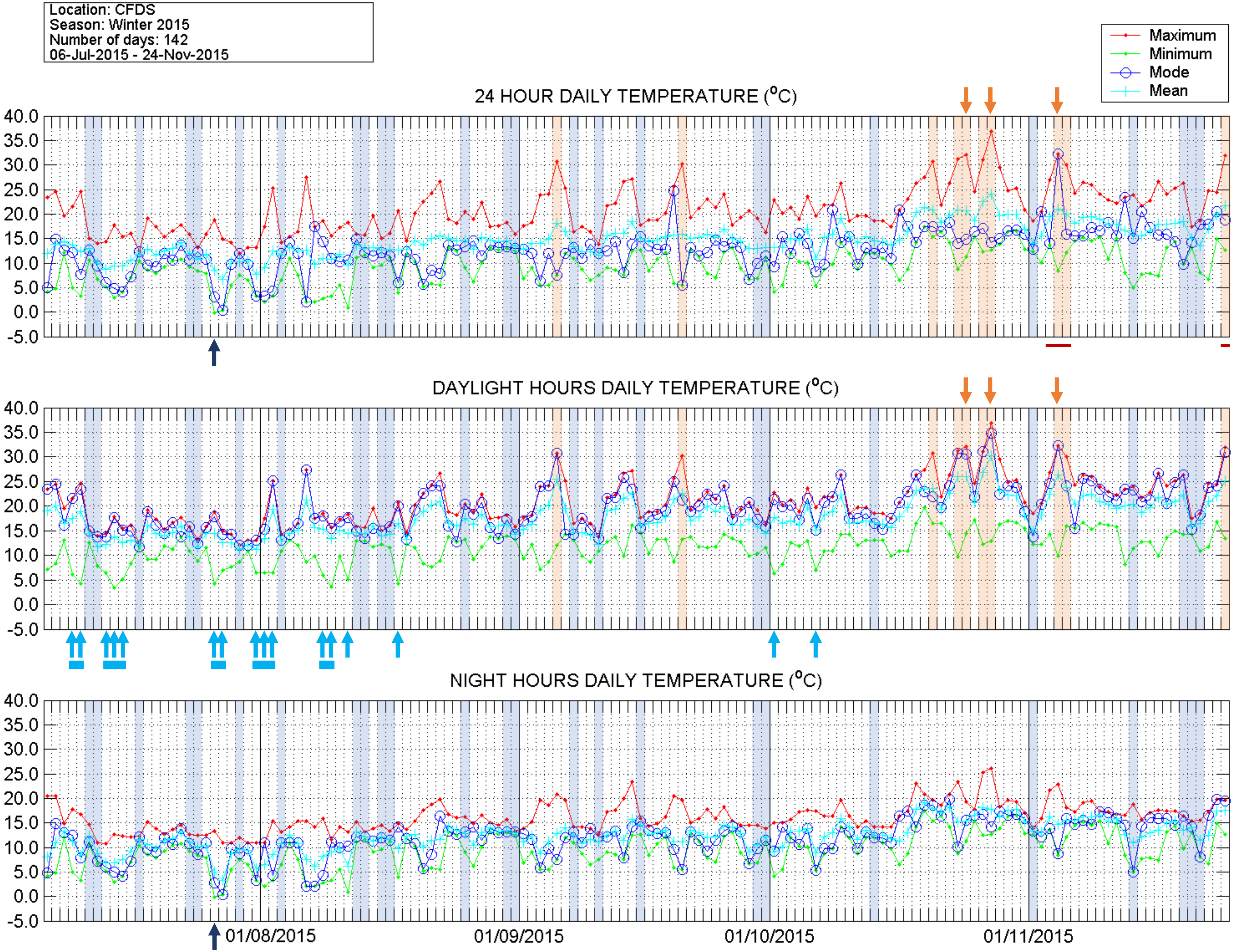


__Figure 3.8:__ 24hr, daytime, and night time maximum, minimum, modal, and mean ambient temperatures (°C) for Cycle 3 (W-2015). Three hot days are indicated with ↓, one freezing temperature is indicated with ↑, 16 cold days are indicated with ↑, five cold snaps are denoted by ▬ (the length of which indicates duration), 17 cold fronts are highlighted with ☐, 10 days with a maximum ambient temperature > 30°C are highlighted with ☐, and four days with near-mummification-inducing conditions are indicated with ▬.

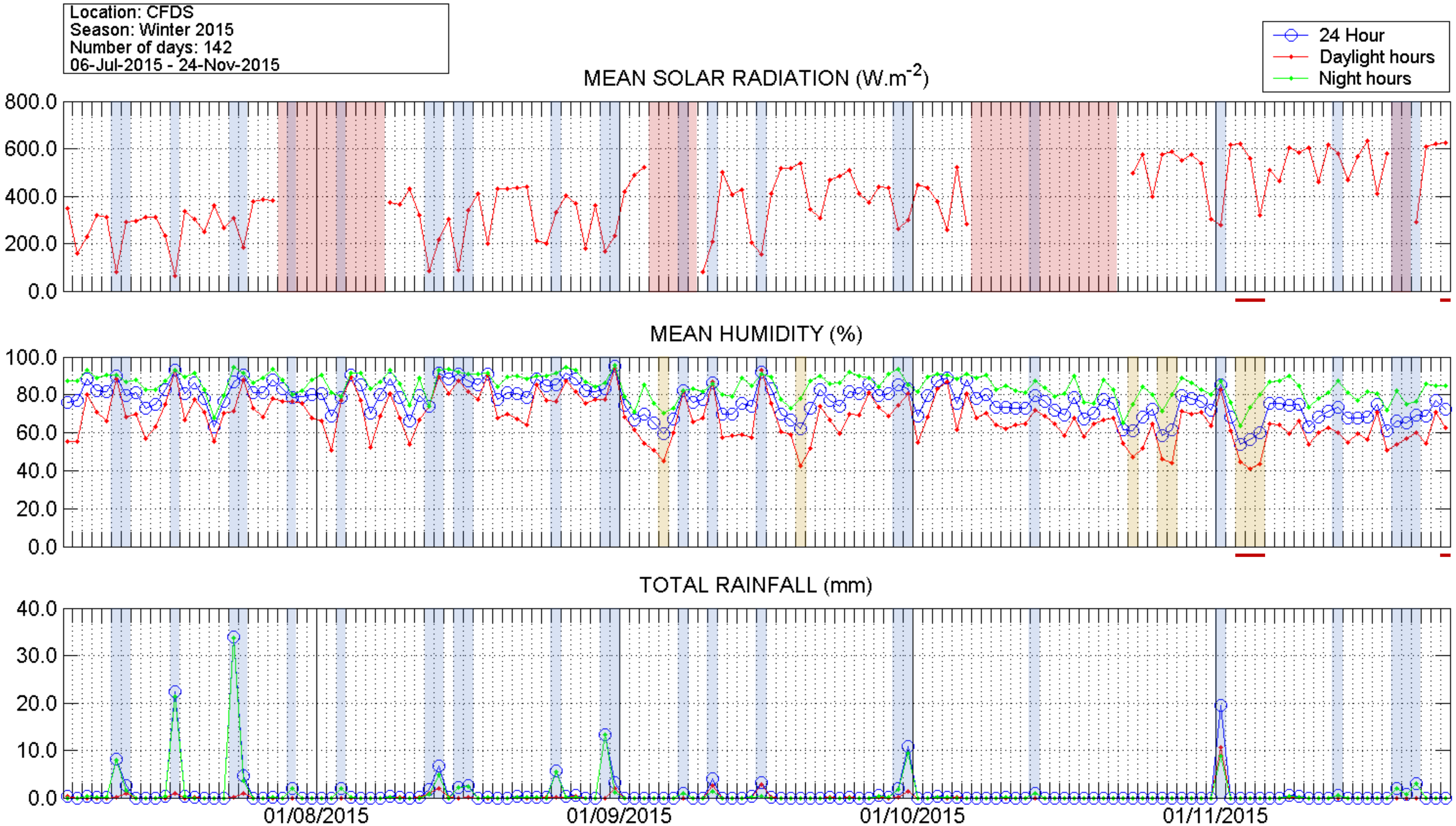
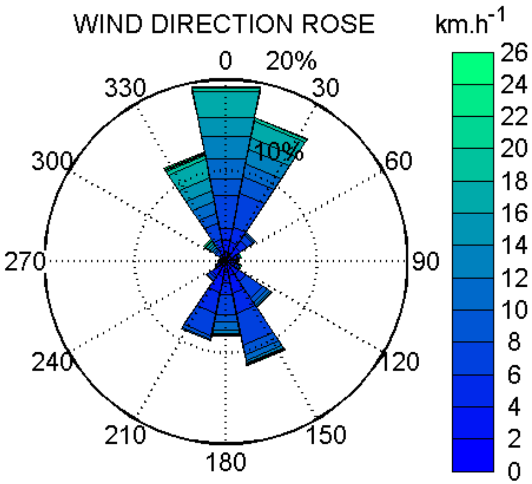


Figure 3.9: *Mean solar radiation (W.m^{-2}), 24hr, daytime, and night time mean humidity (%), and total rainfall (mm) for Cycle 3 (W-2015). 17 cold fronts are highlighted with ▭, eight days with mean daytime humidity < 50% are highlighted with ▭, four days with near-mummification-inducing conditions are indicated with ▬, and gaps in the original data which could not be interpolated are indicated with ▭.*

Location: CFDS
Season: Winter 2015
Number of days: 142
06-Jul-2015 - 24-Nov-2015

JOINT DISTRIBUTION OF WIND SPEED AND DIRECTION

	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Σ
0-2	2.11	1.18	1.04	1.11	1.04	0.79	0.90	1.80	1.49	2.66	1.95	1.38	1.37	0.80	0.73	1.97	22.32
2-4	1.13	1.34	0.99	0.51	0.37	0.31	0.94	1.85	1.03	1.65	0.58	0.28	0.19	0.15	0.27	0.69	12.28
4-6	1.28	1.48	0.85	0.17	0.17	0.35	0.86	1.95	1.27	2.05	0.30	0.13	0.06	0.07	0.30	0.75	12.03
6-8	1.77	1.69	0.42	0.13	0.05	0.17	0.98	1.95	1.15	1.34	0.29	0.09	0.07	0.12	0.30	0.69	11.21
8-10	3.20	3.31	0.45	0.10	0.02	0.17	1.49	2.26	1.58	1.26	0.15	0.04	0.02	0.08	0.27	1.90	16.30
10-12	2.00	1.33	0.08				0.32	0.52	0.79	0.14	0.02	0.01	0.02	0.05	0.33	1.10	6.70
12-14	2.25	1.48	0.01				0.19	0.26	0.39	0.02			0.01	0.03	0.21	1.14	5.99
14-16	1.82	1.12	0.01				0.05	0.16	0.11	0.02				0.02	0.24	1.26	4.81
16-18	2.69	1.62						0.08	0.04	0.01					0.25	1.84	6.53
18-20	0.28	0.36						0.01							0.08	0.38	1.10
20-22	0.05	0.06						0.02							0.07	0.18	0.38
22-24	0.02														0.07	0.13	0.22
24-26	0.04														0.02	0.06	0.12
Σ	18.64	14.99	3.85	2.02	1.65	1.78	5.73	10.85	7.86	9.15	3.28	1.93	1.74	1.31	3.12	12.09	100.00



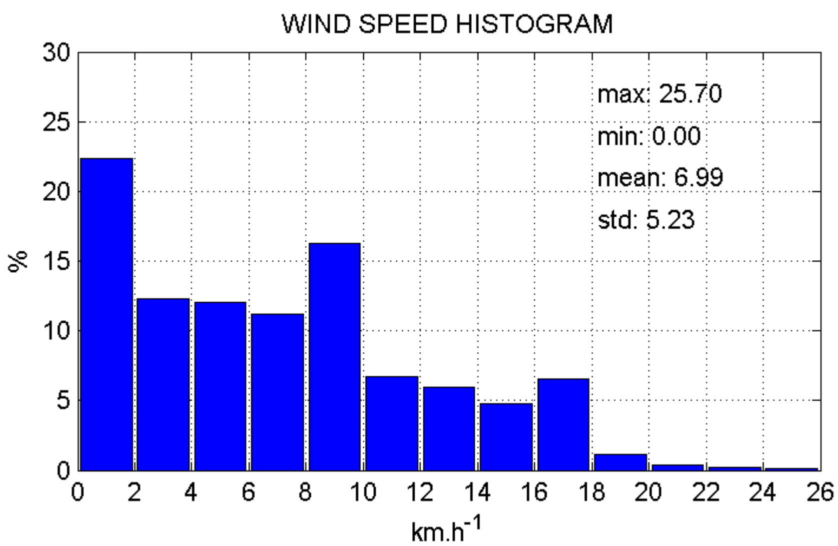


Figure 3.10: Summary of wind conditions (magnitude and direction) recorded for Cycle 3 (W-2015).

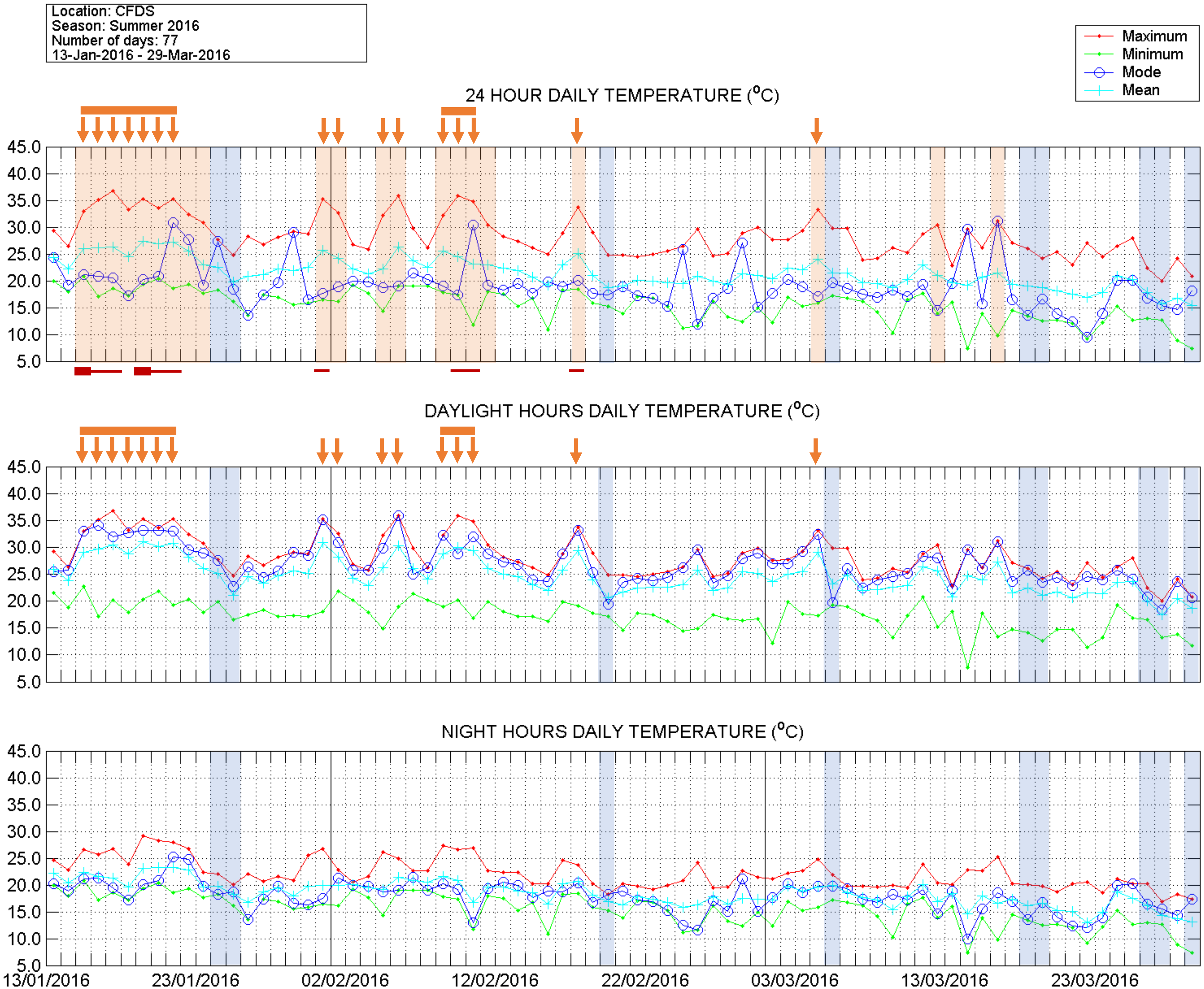


Figure 3.11: *24hr, daytime, and night time maximum, minimum, modal, and mean ambient temperatures (°C) for Cycle 4 (S-2016). 16 hot days are indicated with ↓, two hot spells are denoted by ▬ (the length of which indicates duration), six cold fronts are highlighted with ▭, 21 days with a maximum ambient temperature > 30°C are highlighted with ▭, two days with mummification-inducing conditions are indicated with ■, and eight days with near-mummification-inducing conditions are indicated with ▬.*

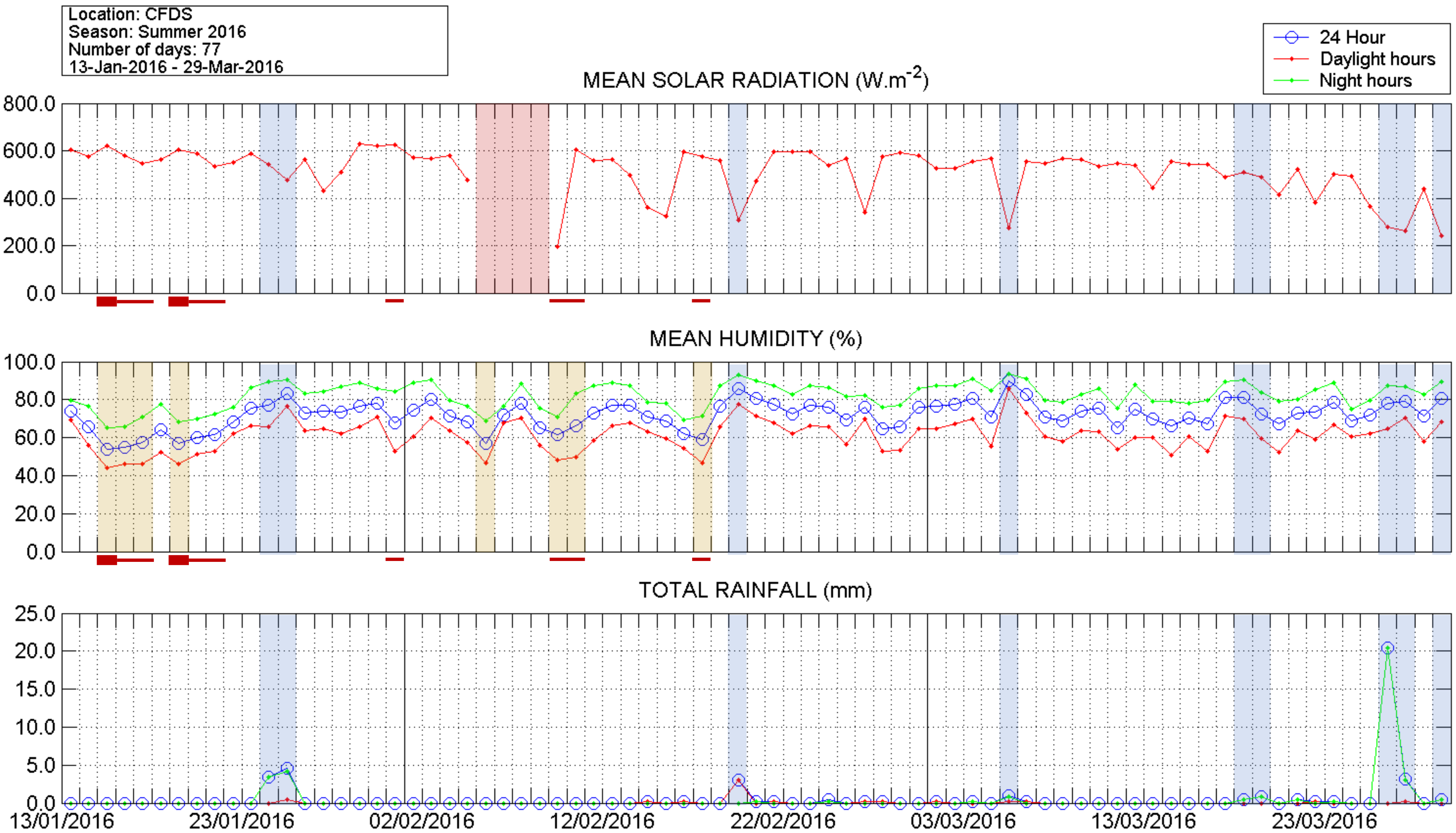


Figure 3.12: *Mean solar radiation (W.m^{-2}), 24hr, daytime, and night time mean humidity (%), and total rainfall (mm) for Cycle 4 (S-2016). Six cold fronts are highlighted with , eight days with mean daytime humidity < 50% are highlighted with , two days with mummification-inducing conditions are indicated with , and eight days with near-mummification-inducing conditions are indicated with , and gaps in the original data which could not be interpolated are indicated with .*

Location: CFDS
Season: Summer 2016
Number of days: 77
13-Jan-2016 - 29-Mar-2016

JOINT DISTRIBUTION OF WIND SPEED AND DIRECTION

	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Σ
0-2	1.42	1.36	1.66	1.68	1.66	0.59	1.63	2.50	1.14	1.25	1.26	0.91	0.46	0.47	0.56	0.87	19.42
2-4	0.90	0.88	1.14	1.19	0.50	0.06	0.84	1.95	0.37	1.14	0.20	0.03	0.06	0.03	0.17	0.27	9.73
4-6	1.05	1.17	1.90	1.01	0.32		0.91	1.39	0.30	0.82	0.12	0.02		0.02	0.12	0.50	9.65
6-8	1.02	2.18	2.27	0.76	0.09	0.02	1.01	1.04	0.15	0.49			0.02		0.26	0.65	9.94
8-10	1.74	4.96	4.37	0.59	0.06		1.74	1.16	0.26	0.69					0.59	1.77	17.92
10-12	0.55	2.24	1.60	0.37			0.11	0.17	0.27	0.41				0.02	0.30	0.84	6.87
12-14	1.13	2.92	1.16	0.05			0.08	0.08	0.11	0.09					0.26	1.08	6.94
14-16	0.72	3.24	0.88	0.02			0.03	0.18	0.05	0.05					0.27	1.32	6.76
16-18	1.20	5.33	0.69					0.11	0.02	0.05					0.23	1.43	9.05
18-20	0.35	1.52	0.08					0.03								0.05	2.03
20-22	0.15	0.91						0.09									1.16
22-24	0.02	0.26															0.27
24-26		0.24															0.24
26-28																	0.00
28-30		0.02															0.02
Σ	10.23	27.24	15.75	5.65	2.63	0.67	6.33	8.68	2.66	4.98	1.58	0.96	0.53	0.53	2.77	8.79	100.00

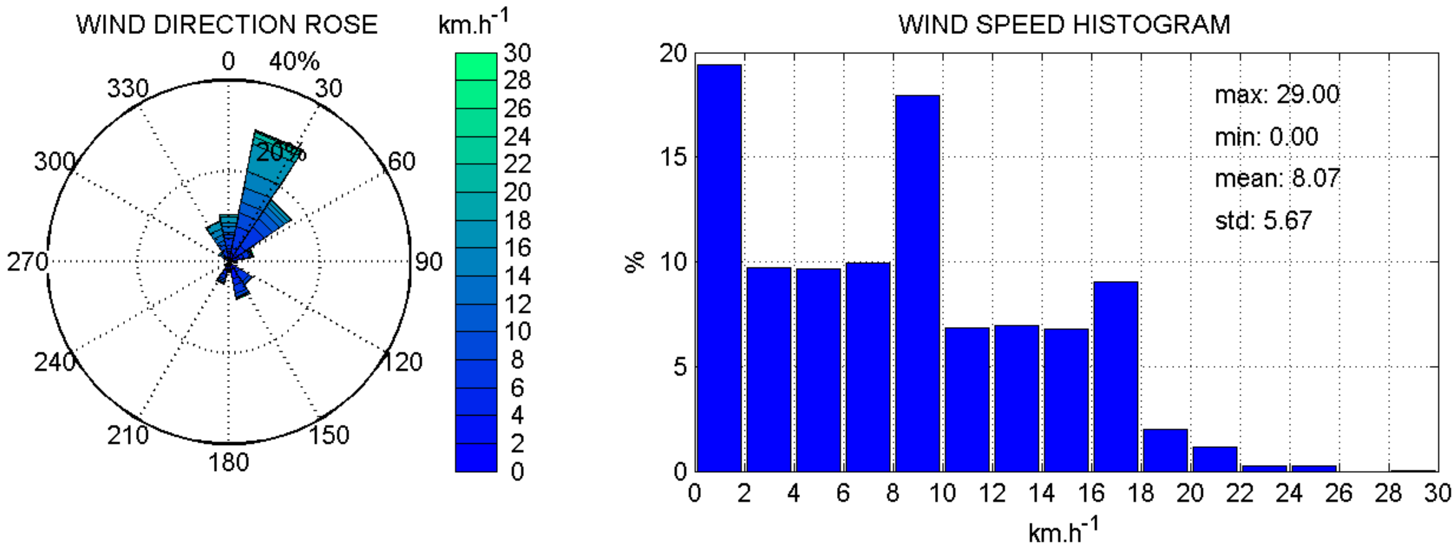


Figure 3.13: *Summary of wind conditions (magnitude and direction) recorded for Cycle 4 (S-2016).*

Table 3.4.1: Categorisation of wind speed and wind gust entries for Cycle 1 (W-2014), by Beaufort Scale rating. One entry corresponds to the average value recorded over a 15-minute interval.

		Wind speed		Wind gusts	
Beaufort Scale Rating	Wind Speed ($km.h^{-1}$)	Count	% of total measures	Count	% of total measures
0	< 1	2548	19.56	580	4.52
1	1-5	5257	40.36	3286	25.59
2	6-11	4038	31.00	2884	22.46
3	12-19	1159	8.90	3564	27.76
4	20-28	24	0.18	1883	14.67
5	29-38	0	0.00	624	4.86
6	39-49	0	0.00	18	0.14
7	50-61	0	0.00	0	0.00
8	62-74	0	0.00	0	0.00
9	75-88	0	0.00	0	0.00
10	89-102	0	0.00	0	0.00
11	103-117	0	0.00	0	0.00
12	≥ 118	0	0.00	0	0.00

Table 3.4.2: Summary of number of days during which specific wind conditions were observed for Cycle 1 (W-2014).

	Windspeed			Wind gusts		
	Moderate Breeze	Fresh Breeze	Strong Breeze	Moderate Breeze	Fresh Breeze	Strong Breeze
# days condition observed	4	0	0	96	50	7
% total # days	2.82	0.00	0.00	67.61	35.21	4.93

Table 3.4.3: Categorisation of wind speed and wind gust entries for Cycle 2 (S-2015), by Beaufort Scale rating. One entry corresponds to the average value recorded over a 15-minute interval.

		Wind speed		Wind gusts	
Beaufort Scale Rating	Wind Speed ($km.h^{-1}$)	Count	% of total measures	Count	% of total measures
0	< 1	1261	17.15	0	0.00
1	1-5	1818	24.73	1089	15.89
2	6-11	2613	35.55	1078	15.73
3	12-19	1556	21.17	2177	31.77
4	20-28	103	1.40	1686	24.60
5	29-38	0	0.00	809	11.81
6	39-49	0	0.00	14	0.20
7	50-61	0	0.00	0	0.00
8	62-74	0	0.00	0	0.00
9	75-88	0	0.00	0	0.00
10	89-102	0	0.00	0	0.00
11	103-117	0	0.00	0	0.00
12	≥ 118	0	0.00	0	0.00

Table 3.4.4: Summary of number of days during which specific wind conditions were observed for Cycle 2 (S-2015).

	Windspeed			Wind gusts		
	Moderate Breeze	Fresh Breeze	Strong Breeze	Moderate Breeze	Fresh Breeze	Strong Breeze
# days condition observed	16	0	0	71	49	6
% total # days	20.78	0.00	0.00	92.21	63.64	7.79

Table 3.4.5: Categorisation of wind speed and wind gust entries for Cycle 3 (W-2015), by Beaufort Scale rating. One entry corresponds to the average value recorded over a 15-minute interval.

		Wind speed		Wind gusts	
Beaufort Scale Rating	Wind Speed (km.h^{-1})	Count	% of total measures	Count	% of total measures
0	< 1	2010	18.35	831	8.26
1	1-5	3577	32.66	1578	15.68
2	6-11	3440	31.41	2066	20.52
3	12-19	1853	16.92	2870	28.51
4	20-28	72	0.66	1949	19.36
5	29-38	0	0.00	745	7.40
6	39-49	0	0.00	26	0.26
7	50-61	0	0.00	1	0.0.1
8	62-74	0	0.00	0	0.00
9	75-88	0	0.00	0	0.00
10	89-102	0	0.00	0	0.00
11	103-117	0	0.00	0	0.00
12	≥ 118	0	0.00	0	0.00

Table 3.4.6: Summary of number of days during which specific wind conditions were observed for Cycle 3 (W-2015).

	Windspeed			Wind gusts		
	Moderate Breeze	Fresh Breeze	Strong Breeze	Moderate Breeze	Fresh Breeze	Strong Breeze
# days condition observed	11	0	0	85	47	7
% total # days	7.75	0.00	0.00	59.86	33.10	4.93

Table 3.4.7: Categorisation of wind speed and wind gust entries for Cycle 4 (S-2016), by Beaufort Scale rating. One entry corresponds to the average value recorded over a 15-minute interval.

		Wind speed		Wind gusts	
Beaufort Scale Rating	Wind Speed (km.h^{-1})	Count	% of total measures	Count	% of total measures
0	< 1	1125	16.04	442	6.42
1	1-5	1868	26.64	914	13.28
2	6-11	2281	32.53	1272	18.47
3	12-19	1627	23.20	1933	28.08
4	20-28	110	1.57	1583	22.99
5	29-38	1	0.01	722	10.49
6	39-49	0	0.00	19	0.28
7	50-61	0	0.00	0	0.00
8	62-74	0	0.00	0	0.00
9	75-88	0	0.00	0	0.00
10	89-102	0	0.00	0	0.00
11	103-117	0	0.00	0	0.00
12	≥ 118	0	0.00	0	0.00

Table 3.4.8: Summary of number of days during which specific wind conditions were observed for Cycle 4 (S-2016).

	Windspeed			Wind gusts		
	Moderate Breeze	Fresh Breeze	Strong Breeze	Moderate Breeze	Fresh Breeze	Strong Breeze
# days condition observed	14	1	0	68	39	5
% total # days	18.18	1.30	0.00	88.31	50.65	6.49

Chapter 4
Results – Decomposition Data

INTRODUCTION

SAMPLE CHARACTERISTICS

To understand and correctly interpret the decompositional, entomological, and zoological results of this study, it is necessary to first examine the study's sample. The biographic details of the 16 pig carcasses employed in this study are summarised by sex, season, and habitat in Tables 4.1, 4.2, and 4.3, respectively. The sample was split evenly between sexes, with one male and one female deployed in each habitat during each seasonal cycle.

All carcasses were largely comparable in starting weight, leanness (as measured by subcutaneous fat depth), and size (as measured by width, length, and stature) with respect to sex, season of deployment, and habitat of deployment. Only one significant difference – in width – was noted between carcasses with respect to season, with the carcasses deployed in summer marginally narrower on average than those deployed in winter (F = 7.09, *p* = 0.019). Taken together, these results indicate that the carcass biographics are not likely to confound further tests. Detailed biographical data for all carcasses are available in Table A4.1 of Appendix A4.1.

Table 4.1: Sample biographics by sex.

		Male (n=8)	**Female (n=8)**	**TOTAL (N=16)**	***H(1)/F***	***p*-value**
Starting weight [kg]	Median (IQR) (Range)	62.8 (5.6) (55.0-68.0)	64.5 (5.6) (59.0-66.5)	64.0 (4.9) (55.0-68.00)	0.01	0.916
Subcutaneous fat [cm]	Median (IQR) (Range)	6.0 (1.0) (5.0-8.0)	6.0 (1.0) (6.0-8.0)	6.0 (1.0) (5.0-8.0)	0.53	0.467
Width [cm]	Mean (SD) (Range)	30.3 (4.6) (24.0-38.0)	29.4 (3.9) (26.0-36.0)	29.8 (4.1) (24.0-38.0)	0.17	0.686
Length [cm]	Mean (SD) (Range)	122.4 (4.7) (114.0-128.0)	121.6 (2.8) (117.0-125.0)	122.0 (3.7) (114.0-128.0)	0.16	0.699
Stature [cm]	Mean (SD) (Range)	54.9 (2.0) (51.0-57.0)	55.3 (1.4) (54.0-58.0)	55.1 (1.7) (51.0-58.0)	0.19	0.673

kg** = kilograms; **mm** = millimetres; **cm** = centimetres; **F** statistic from Univariate ANOVA test for parametric data; **IQR** = Interquartile Range; **SD** = Standard Deviation; **H** statistic from Kruskal-Wallis test for nonparametric data, with degrees of freedom denoted in parenthesis;* **p-*value *significant when p<0.05 and is denoted by **bold** type and an asterisk (*).*

Table 4.2: Sample biographics by season.

		Summer (n=8)	Winter (n=8)	TOTAL (N=16)	*H(1)/F*	*p*-value
Starting weight [kg]	Median (IQR) (Range)	64.5 (7.3) (55.0-68.0)	63.5 (4.1) (59.0-66.5)	64.0 (4.9) (55.0-68.00)	0.07	0.792
Subcutaneous fat [cm]	Median (IQR) (Range)	6.0 (2.0) (5.0-8.0)	6.0 (1.0) (6.0-7.0)	6.0 (1.0) (5.0-8.0)	0.13	0.716
Width [cm]	Mean (SD) (Range)	27.5 (2.6) (24.0-33.0)	32.1 (4.2) (27.0-38.0)	29.8 (4.1) (24.0-38.0)	**7.09**	***0.019**
Length [cm]	Mean (SD) (Range)	121.3 (4.4) (114.0-126.0)	122.8 (2.9) (119.0-128.0)	122.0 (3.7) (114.0-128.0)	0.65	0.435
Stature [cm]	Mean (SD) (Range)	54.9 (2.1) (51.0-57.0)	55.3 (1.3) (54.0-58.0)	55.1 (1.7) (51.0-58.0)	0.19	0.673

kg *= kilograms;* ***mm*** *= millimetres;* ***cm*** *= centimetres;* ***F*** *statistic from Univariate ANOVA test for parametric data;* ***H*** *statistic from Kruskal-Wallis test for nonparametric data, with degrees of freedom denoted in parenthesis;* **p-value** *significant when p<0.05 and is denoted by* **bold** *type and an asterisk (*).*

Table 4.3: Sample biographics by habitat.

		CFDS/O (n=8)	CFDS/C (n=8)	TOTAL (N=16)	*H(1)/F*	*p*-value
Starting weight [kg]	Median (IQR) (Range)	64.5 (3.4) (55.0-68.0)	62.5 (6.5) (59.0-67.5)	64.0 (4.9) (55.0-68.00)	0.40	0.527
Subcutaneous fat [cm]	Median (IQR) (Range)	6.0 (1.0) (5.0-8.0)	6.0 (1.0) (6.0-8.0)	6.0 (1.0) (5.0-8.0)	0.00	0.952
Width [cm]	Mean (SD) (Range)	30.4 (3.4) (26.0-36.0)	29.3 (4.7) (24.0-38.0)	29.8 (4.1) (24.0-38.0)	0.28	0.602
Length [cm]	Mean (SD) (Range)	121.5 (3.5) (114.0-125.0)	122.5 (4.0) (117.0-128.0)	122.0 (3.7) (114.0-128.0)	0.82	0.605
Stature [cm]	Mean (SD) (Range)	54.6 (1.8) (51.0-57.0)	55.5 (1.6) (53.0-58.0)	55.1 (1.7) (51.0-58.0)	1.08	0.317

kg *= kilograms;* ***mm*** *= millimetres;* ***cm*** *= centimetres;* ***F*** *statistic from Univariate ANOVA test for parametric data;* ***H*** *statistic from Kruskal-Wallis test for nonparametric data, with degrees of freedom denoted in parenthesis;* **p-value** *significant when p<0.05 and is denoted by* **bold** *type and an asterisk (*).*

Decompositional data processing

In this study, both the rate and process of soft-tissue decomposition were assessed. The rate of decay was quantified by measuring both mass loss and Total Body Score (TBS) progression over time, the latter also serving to inform the decomposition pattern. TBS scoring definitions employed were those stipulated by Megyesi, Nawrocki and Haskell (2005) with no alterations. Decomposition scoring ceased when all four carcasses had reached skeletonisation per the definition provided by Simmons, Adlam and Moffatt (2010). As a result, some carcasses did not reach skeletonisation as defined by Megyesi and colleagues (2005) within the experimental period, but all reached it within a maximum of three weeks thereafter, regardless of season. Weight loss measurement did not necessarily proceed until the end of the cycle and was terminated when bony elements began falling through the weighing grid, confounding further accurate weight measurement.

Logistical limitations, occasional equipment failure, and adverse weather conditions resulted in gaps in the weight and TBS data. For the purposes of analysis, the former were filled using linear regression interpolation in *RStudio* (Version 1.0.153). The source code for the interpolation protocol is available in Appendix A4.2. The linear regression coefficients (R^2 values), correct to three decimal places, are provided in Table 4.4. These values indicate that the model interpolated missing weight values with a high degree of accuracy (94.9-99.7%), meaning that subsequent analyses using the filled weight values are not biased as a result of the interpolation.

Table 4.4: Linear regression coefficients (R^2) from interpolation of weight loss data, heat-mapped to show strength of regression agreement.

	1. W-2014	2. S-2015	3. W-2015	4. S-2016
CFDS/O-1	0.982	0.959	0.982	0.966
CFDS/O-2	0.956	0.982	0.986	0.967
CFDS/C-1	0.949	0.993	0.997	0.991
CFDS/C-2	0.976	0.984	0.987	0.986

OBSERVATIONS ON DECOMPOSITION: WEIGHT LOSS

Weight loss progression over time for each carcass in each seasonal cycle is presented graphically in Figure 4.1. The raw data are available in Appendices A4.3-A4.6.

Three major observations are clear from the plots: firstly, weight loss is almost twice as fast in summer compared to winter. Secondly, in winter, the CFDS/C carcasses lose weight more steadily and quickly compared to the CFDS/O carcasses. Thirdly, there is greater variability in the pattern of weight loss in summer compared to winter. Specifically, the difference between the rates of carcass weight loss in the CFDS/O and CFDS/C is less pronounced in summer.

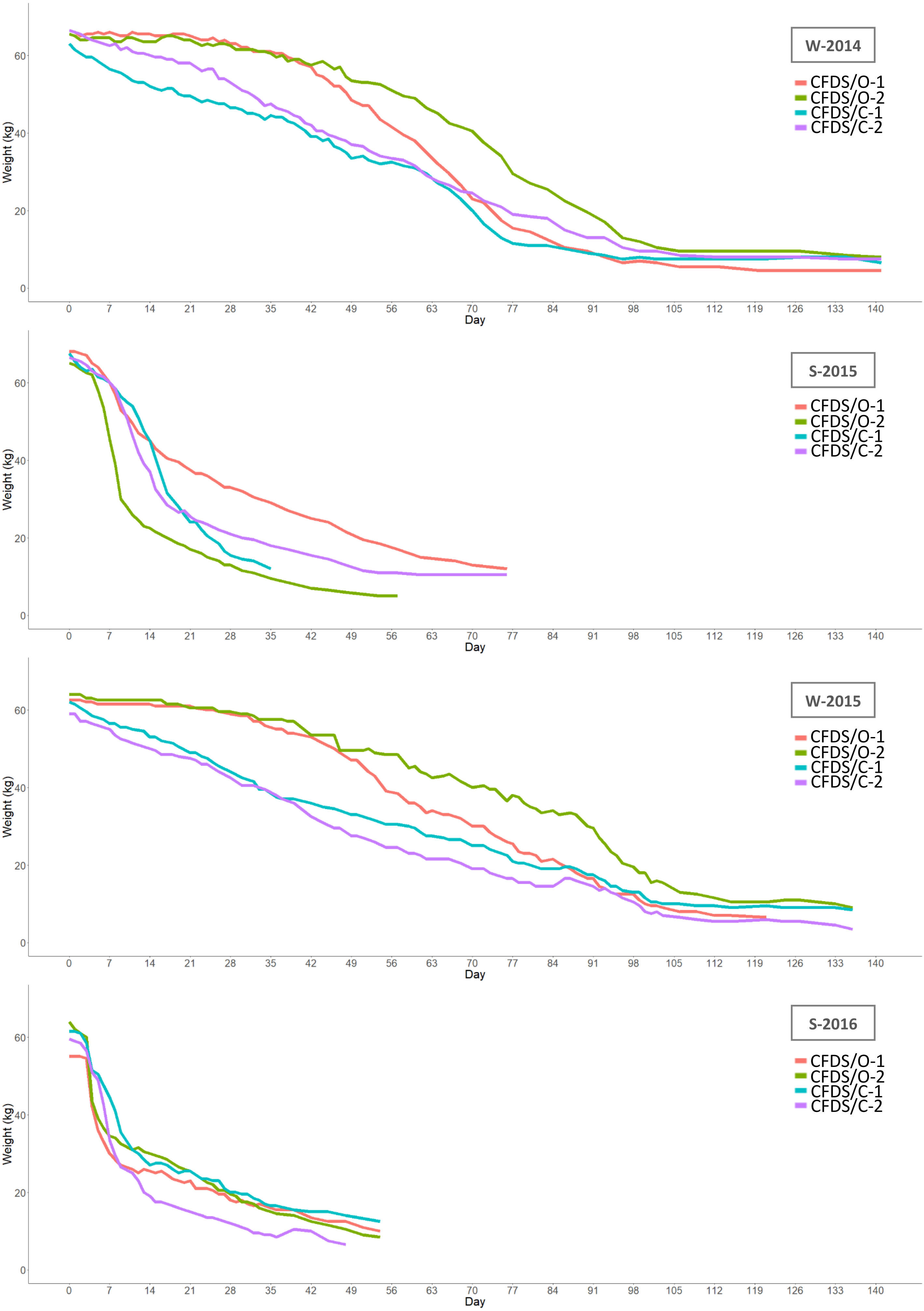


Figure 4.1: Weight loss curves for each carcass in each seasonal cycle. ***kg*** *= kilograms;* ***Day*** *= cycle day number.*

To explore these findings further, one may assess the time (in 24-hour days) to specific weight loss milestones, namely 25%, 50%, and 75% weight loss. These measures are henceforth referred to as TT25%, TT50%, and TT75%. These measures, contrasting season and habitat, are presented in complementary formats in Figures 4.2 & 4.3. Three observations, reinforcing those deduced from Figure 4.1, are clear:

(1) It takes significantly less time to reach these milestones in summer compared to winter, regardless of habitat (**TT25%**: H(1) = 11.327, ***p* = 0.001**, median time of 7.00 days for summer, 40.50 days for winter; **TT50%**: H(1) = 11.327, ***p* = 0.001**, median time of 11.50 days for summer, 61.00 days for winter; **TT75%**: H(1) = 11.36, ***p* = 0.001**, median time of 37.50 days for summer, 89.00 days for winter).

(2) In winter, the difference in time to these milestones between habitats is larger than in summer, the gap declining as decomposition progresses (**TT25%**: H(1) = 5.333, ***p* = 0.021**, median time of 55.00 days for CFDS/O, 27.00 days for CFDS/C; **TT50%**: H(1) = 5.398, ***p* = 0.020**, median time of 73.50 days for CFDS/O, 56.50 days for CFDS/C; **TT75%**: H(1) = 11.36, *p* = 0.248, median time of 94.00 days for CFDS/O, 83.50 days for CFDS/C).

(3) Time to 75% weight loss is the only measure which is not significantly different between habitats in winter.

Statistical outputs are available in Appendix A4.7.

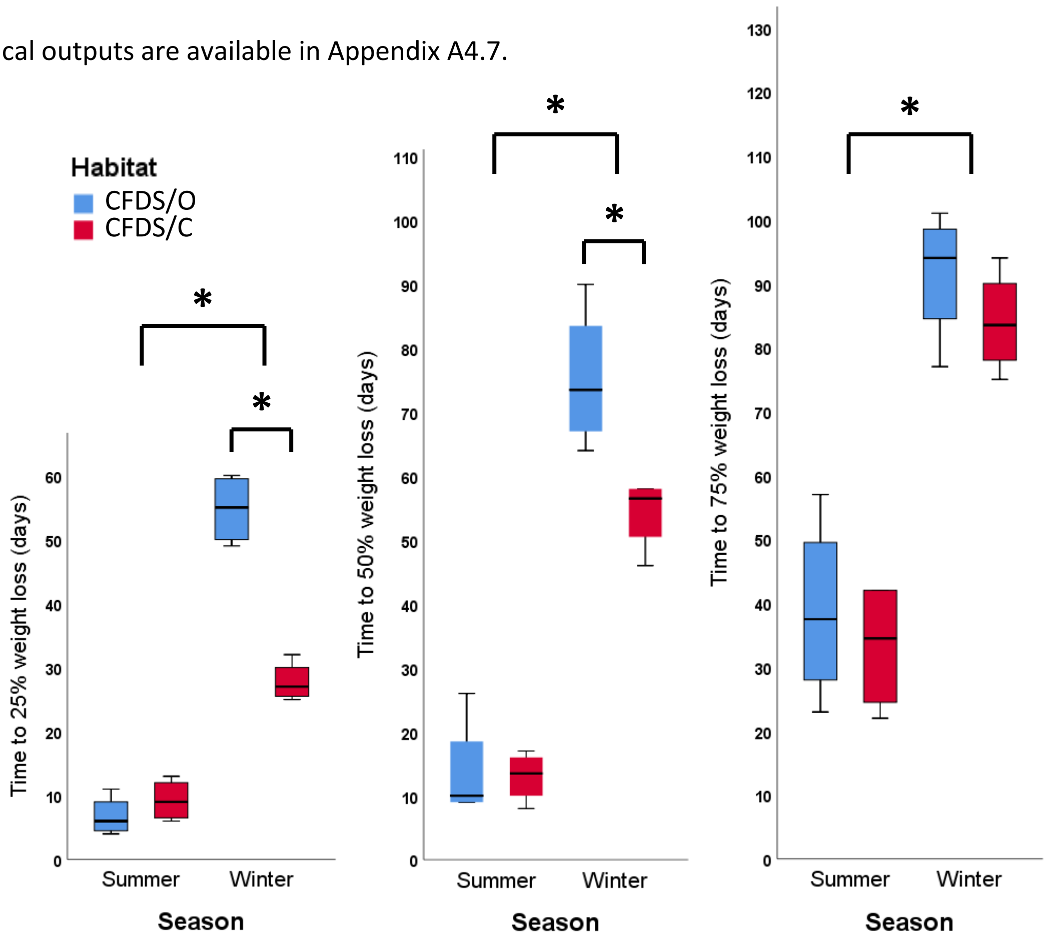


Figure 4.2: *Boxplots of time (in days) to 25%, 50% and 75% weight loss of carcasses in each habitat, seasonally contrasted. Significant differences (*p *≤ 0.05) denoted with an asterisk (*).*

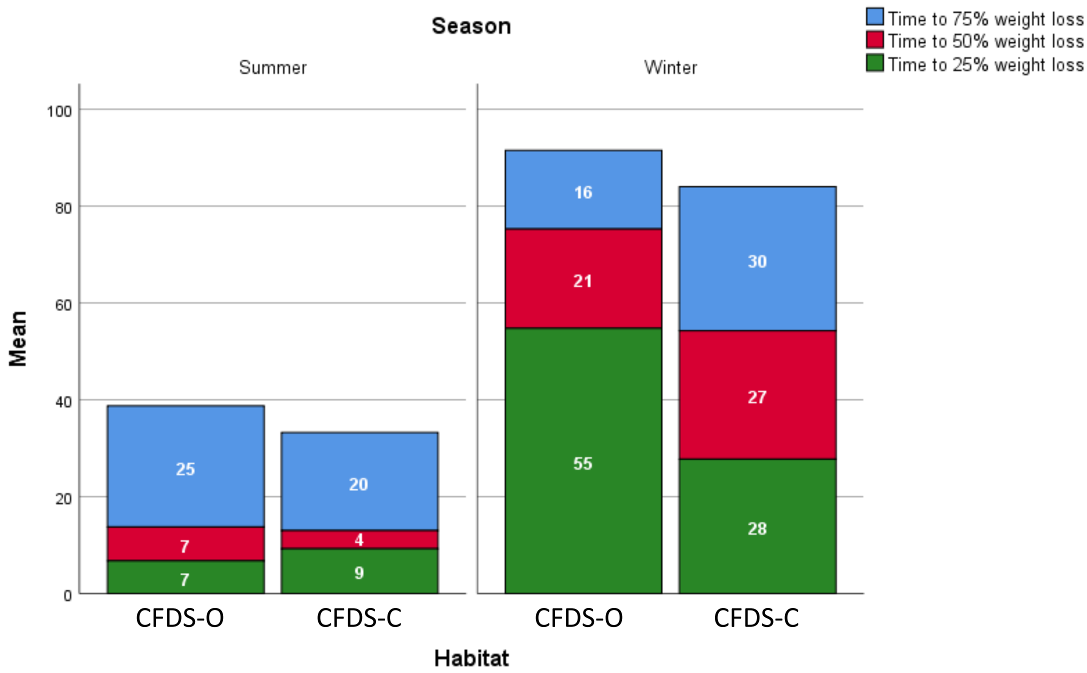


Figure 4.3: *Mean number of days to 25%, 50%, and 75% weight loss.*

Observations on decomposition: Total Body Score (TBS)

Decomposition stage progression, as measured using the transitional TBS values of 6, 19, and 27, is presented alongside weight loss in Figures 4.4 and 4.5. The raw TBS data are available in Appendix A4.8.

The timing of decomposition stage transition is variable between different carcasses even within-season, but certain broad patterns are evident: the fresh stage (<TBS6) is, on average, ⅔ longer in winter compared to summer (**time to TBS=6 [TT-TBS6]**: H(1) = 3.507, p = 0.061, median time of 2.00 days for summer, 6.00 days for winter). Similarly, the early decomposition stage (TBS7-19) lasts, on average, significantly (and proportionately) longer in winter compared to summer (**time to TBS=19 [TT-TBS=19]**: H(1) = 3.507, ***p* = 0.001**, median time of 17.00 days [22% of overall cycle] for summer, 58.00 days [41% of overall cycle] for winter). The average time to the onset of skeletonisation (TBS27) was significantly longer in winter compared to summer (**time to TBS=27 [TT-TBS27]**: H(1) = 7.534, ***p* = 0.001**, median time of 48.00 days for summer, 134.00 days for winter). Although differences in these measures between habitats do exist, the only significant difference observed is for TT-TBS19 in winter, wherein it took less time to reach the transition from early to advanced decomposition in the CFDS/C compared to in the CFDS/O (H(1) = 4.288, ***p* = 0.038**, median time of 60.00 days in the CFDS/O, 57.00 days in the CFDS/C). The earliest instance of a carcass entering the skeletonisation phase as defined by Megyesi and colleagues (2005) was 39 days (S-2016), ranging up to 69 days in the same season (summer). In winter, per the same definition, the same takes a minimum of 102 days, ranging up to 160 days, at least for those carcasses which were observed to enter the skeletonisation phase.

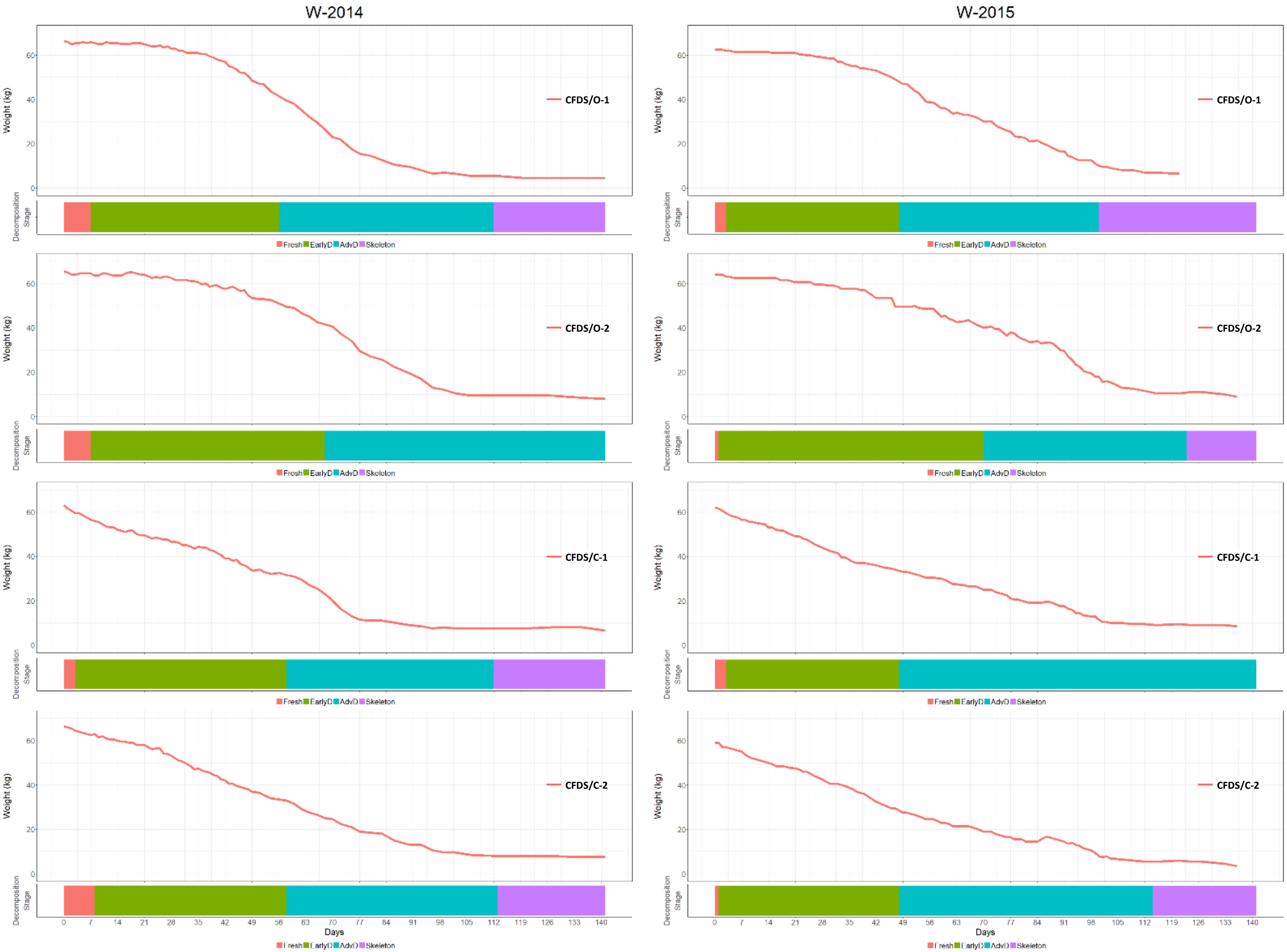


Figure 4.4: *Weight loss curves for each carcass in each winter seasonal cycle, benchmarked against decomposition stage progression.* ***kg*** *= kilograms;* ***Day*** *= cycle day number. Decomposition stages:* ***Fresh*** *= fresh;* ***EarlyD*** *= early decomposition;* ***AdvD*** *= advanced decomposition;* ***Skeleton*** *= skeletonisation.*

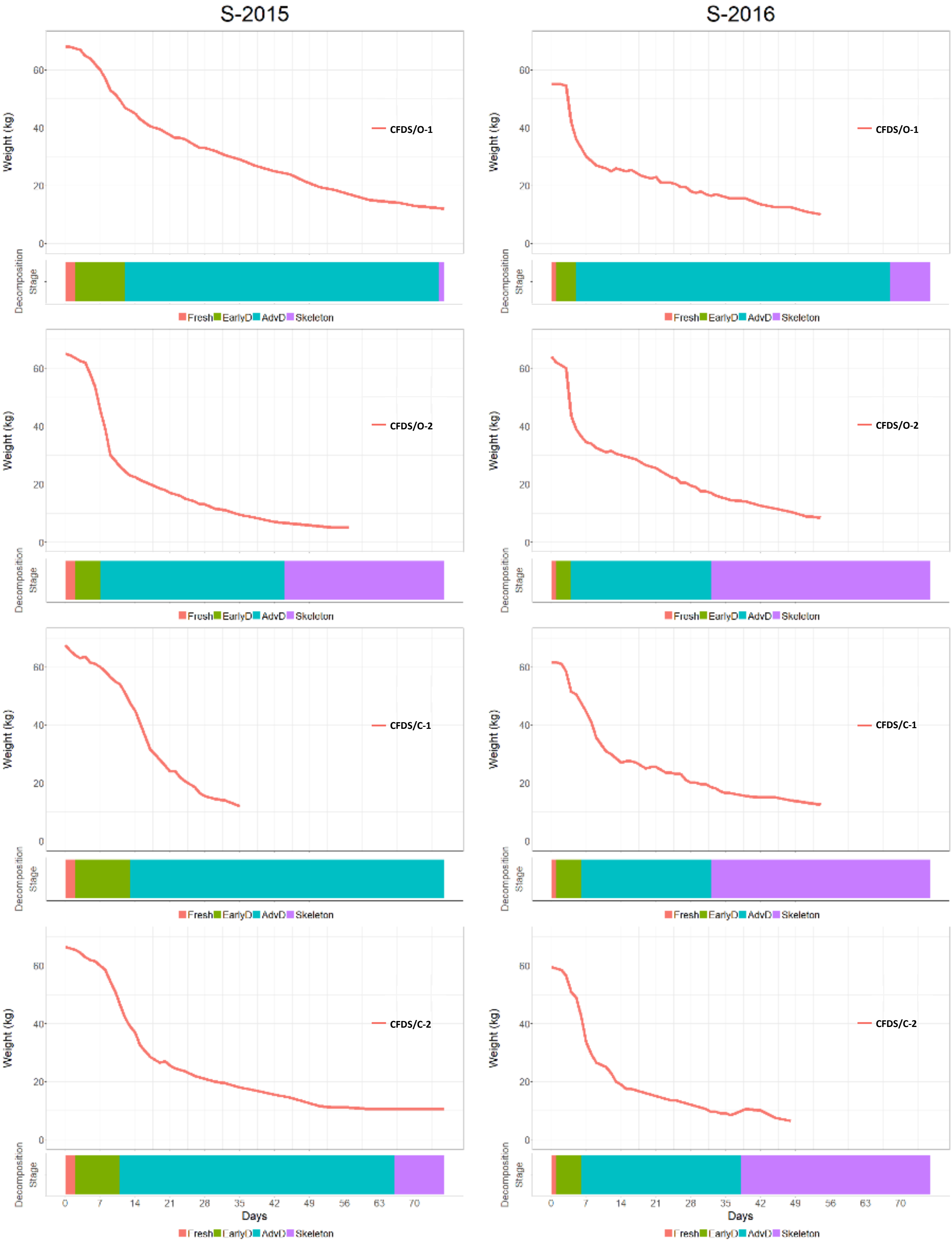


Figure 4.5: *Weight loss curves for each carcass in each summer seasonal cycle, benchmarked against decomposition stage progression.* ***kg*** *= kilograms;* ***Day*** *= cycle day number. Decomposition stages:* ***Fresh*** *= fresh;* ***EarlyD*** *= early decomposition;* ***AdvD*** *= advanced decomposition;* ***Skeleton*** *= skeletonisation. Stages defined by TBS score.*

Weight loss in each TBS-defined decomposition stage is presented in Tables 4.5 (comparing seasons), 4.6 (comparing habitats) and 4.7 (comparing habitats within-season). Most weight is lost during the early decomposition stage, true for all seasons in both habitats, although more is lost during this stage in summer compared to winter, with little variation between habitats. This pattern reverses with weight loss during the advanced decomposition stage. Specifically, more weight is lost in winter compared to summer, and weight loss in each habitat is more comparable. Weight loss during the fresh and skeletonisation phases is largely comparable, with only minor, non-significant differences between seasons and habitats with respect to this measure. The only significant difference in the amount of weight lost in any stage was recorded between habitats in winter during advanced decomposition, although this is not strongly significant (Table 4.7).

Table 4.5: Weight loss per TBS-defined decomposition stage by season.

		Summer (n=8)	**Winter (n=8)**	**TOTAL (N=16)**	***H(1)***	***p*-value**
Total weight loss during fresh stage [kg]	Median (IQR)	0.00 (0.50)	0.75 (4.38)	0.25 (2.13)	1.675	0.196
	(Range)	(0.00-2.96)	(0.00-7.50)	(0.00-7.50)		
Total weight loss during early decomposition stage [kg]	Median (IQR)	30.88 (19.81)	27.00 (3.31)	27.75 (9.06)	0.398	0.528
	(Range)	(20.50-52.95)	(23.50-32.50)	(20.50-52.95)		
Total weight loss during advanced decomposition stage [kg]	Median (IQR)	22.75 (11.82)	26.06 (7.06)	25.56 (5.95)	1.335	0.248
	(Range)	(11.84-31.53)	(21.83-35.00)	(11.84-35.00)		
Total weight loss during skeletonisation stage [kg]	Median (IQR)	0.00 (4.54)	0.03 (1.47)	0.00 (1.51)	0.000	1.000
	(Range)	(0.00-5.99)	(0.00-3.00)	(0.00-5.99)		

kg** = kilograms; **H** statistic from Kruskal-Wallis test for nonparametric data, with degrees of freedom denoted in parenthesis; **IQR** = Interquartile Range;* **p-*value *significant when p<0.05 and is denoted by **bold** type and an asterisk (*).*

Table 4.6: Weight loss per TBS-defined decomposition stage by habitat.

		CFDS/O (n=8)	**CFDS/C (n=8)**	**TOTAL (N=16)**	***H(1)***	***p*-value**
Total weight loss during fresh stage [kg]	Median (IQR)	0.00 (0.50)	1.50 (4.49)	0.25 (2.13)	2.309	0.129
	(Range)	(0.00-1.00)	(0.00-7.50)	(0.00-7.50)		
Total weight loss during early decomposition stage [kg]	Median (IQR)	27.00 (10.00)	28.63 (9.81)	27.75 (9.06)	0.044	0.834
	(Range)	(22.00-43.75)	(20.50-52.95)	(20.50-52.95)		
Total weight loss during advanced decomposition stage [kg]	Median (IQR)	27.00 (13.55)	24.00 (4.18)	25.56 (5.95)	0.706	0.401
	(Range)	(11.84-35.00)	(19.23-31.53)	(11.84-35.00)		
Total weight loss during skeletonisation stage [kg]	Median (IQR)	0.50 (2.55)	0.00 (1.23)	0.00 (1.51)	0.214	0.643
	(Range)	(0.00-5.66)	(0.00-5.99)	(0.00-5.99)		

kg** = kilograms; **H** statistic from Kruskal-Wallis test for nonparametric data, with degrees of freedom denoted in parenthesis; **IQR** = Interquartile Range;* **p-*value *significant when p<0.05 and is denoted by **bold** type and an asterisk (*).*

Table 4.7: Weight loss per TBS-defined decomposition stage, comparing habitats within-season.

		Winter					***Summer***				
		CFDS/O (n=8)	**CFDS/C (n=8)**	**TOTAL (N=16)**	***H(1)***	***p*-value**	**CFDS/O (n=8)**	**CFDS/C (n=8)**	**TOTAL (N=16)**	***H(1)***	***p*-value**
Total weight loss during fresh stage [kg]	Median (IQR)	0.25 (0.88)	3.75 (6.25)	0.75 (4.38)	2.188	0.139	0.00 (0.38)	0.25 (2.34)	0.00 (0.50)	0.694	0.405
	(Range)	(0.00-1.00)	(0.00-7.50)	(0.00-7.50)			(0.00-0.50)	(0.00-2.96)	(0.00-2.96)		
Total weight loss during early decomposition stage [kg]	Median (IQR)	26.00 (1.75)	28.63 (6.94)	27.00 (3.31)	1.349	0.245	33.00 (18.81)	28.88 (26.78)	30.88 (19.81)	0.083	0.773
	(Range)	(25.50-27.50)	(23.50-32.50)	(23.50-32.50)			(22.00-43.75)	(20.50-52.95)	(20.50-52.95)		
Total weight loss during advanced decomposition stage [kg]	Median (IQR)	29.25 (7.25)	23.88 (3.66)	26.06 (7.06)	5.33	***0.021**	18.80 (14.23)	24.39 (10.17)	22.75 (11.82)	0.750	0.386
	(Range)	(26.50-35.00)	(21.83-25.63)	(21.83-35.00)			(11.84-28.02)	(19.23-31.53)	(11.84-31.53)		
Total weight loss during skeletonisation stage [kg]	Median (IQR)	0.50 (2.50)	0.03 (1.23)	0.03 (1.47)	0.095	0.758	0.60 (4.54)	0.00 (4.49)	0.00 (4.54)	0.109	0.741
	(Range)	(0.00-3.00)	(0.00-1.62)	(0.00-3.00)			(0.00-5.66)	(0.00-5.99)	(0.00-5.99)		

***kg** = kilograms; **H** statistic from Kruskal-Wallis test for nonparametric data, with degrees of freedom denoted in parenthesis; **IQR** = Interquartile Range; **p-value** significant when p<0.05 and is denoted by **bold** type and an asterisk (*).*

Total Body Score (TBS) values ranging from a minimum of 3 to a maximum of 31 were recorded during the experimental period. Differences in final TBS values for carcasses within-season ranged from as little as 3 points (S-2016) to as many as 7 points (W-2015). This variation is evident in Figure 4.6 which indicates TBS values plotted against Accumulated Degree Days (ADD). It serves to note that although differences exist, none are significant when comparing either season or habitat overall, or habitat within-season (see Appendix A4.7). Several other observations may be made from this plot: firstly, the relationship between these variables resembles that of weight loss over time (i.e. non-linear but progressive; accelerated in summer compared to winter). It is also clear that the most change in TBS occurs during early decomposition. These observations reaffirm the observed general pattern of decomposition made from weight loss over time. Secondly, reversal of TBS values is evident, more commonly in winter compared to summer. Technically, this indicates a reversal of decomposition, but, in reality, it only reflects rehydration of desiccated tissues due to rainfall which alters the physical appearance of the carcasses (Suckling, Spradley & Godde, 2016). Thirdly, periods of stasis in TBS can be seen throughout each seasonal cycle but are particularly prominent in the advanced stage of decomposition in summer, and during early decomposition in winter. Fourthly, deductions about the contribution of temperature to the progression of decomposition may be made: significantly more heat energy (as measured in ADD units) is associated with the advancement of carcasses to and through advanced decomposition and skeletonisation in winter compared to summer (**ADD@TBS19**: $H(1) = 11.311$, $\boldsymbol{p = 0.001}$, median ADD of 329.70 in summer, 740.19 in winter; **ADD@TBS27**: $H(1) = 6.533$, $\boldsymbol{p = 0.011}$, median ADD of 1,016.35 in summer, 2,121.66 in winter; **ADD@TBSEoT (end of trial)**: $H(1) = 11.429$, $\boldsymbol{p = 0.001}$, median ADD of 1,646.32 in summer, 2,357.10 in winter).

Comparing habitats, less heat energy, on average, is associated with advancement of the carcasses through the decomposition stages in the CFDS/O compared to the CFDS/C, with the exception of the early decomposition stage (represented by ADD@TBS19). However, none of these differences are significant (see Appendix A4.7). Interestingly, this pattern does not always hold true if season is factored in. Specifically, less heat energy is associated with the advancement of carcasses through the decomposition stages in the CFDS/C compared to the CFDS/O in summer. In winter, the opposite is true, with *greater* differences in the amount of heat energy associated with decompositional advancement compared to summer. However, and as with the general pattern observed, none of these differences are significant (see Appendix A4.7).

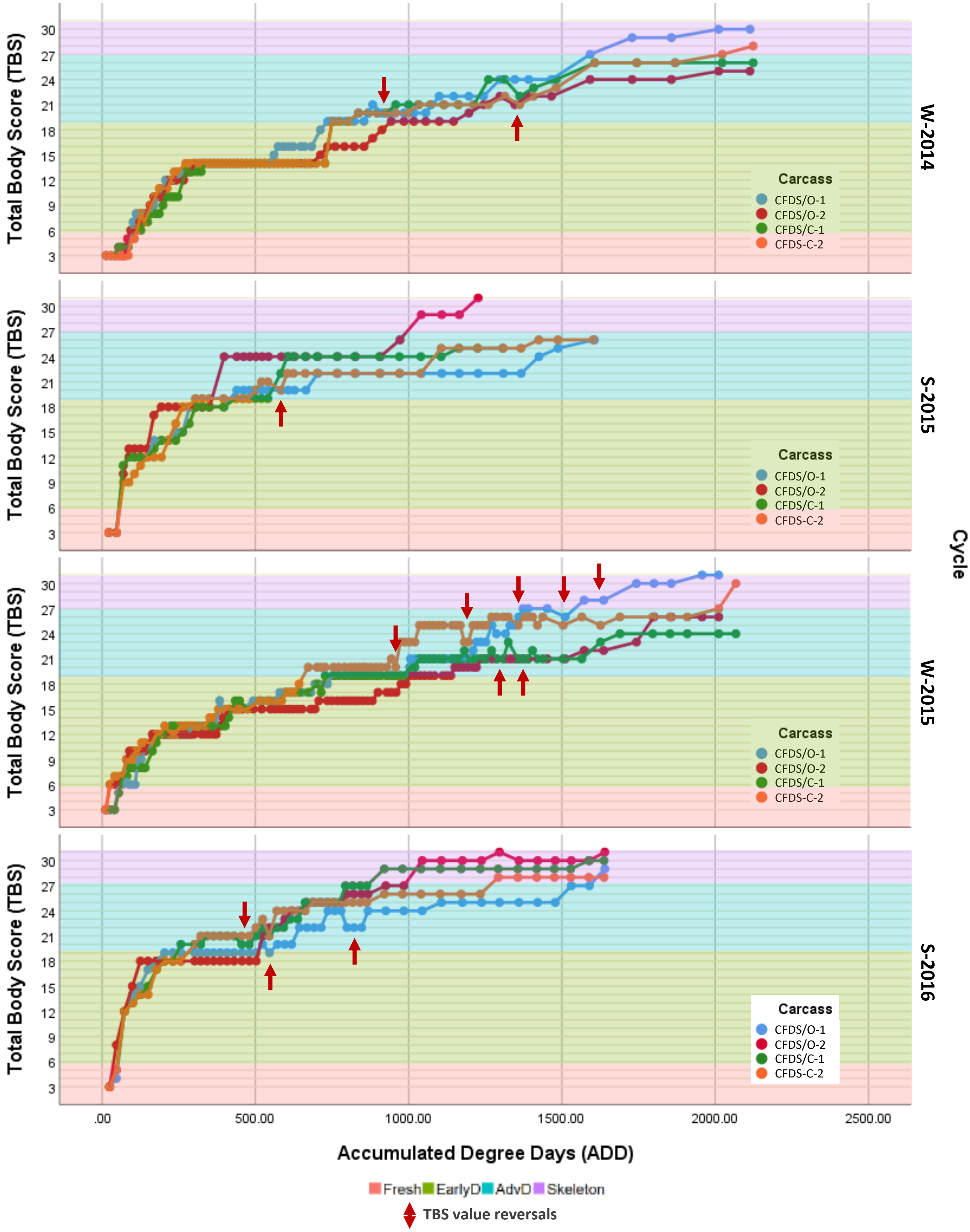


Figure 4.6: *Grouped scatter plot of Total Body Score (TBS) against Accumulated Degree Days (ADD), grouped by seasonal cycle. Decomposition stages:* ***Fresh*** *= fresh;* ***EarlyD*** *= early decomposition;* ***AdvD*** *= advanced decomposition;* ***Skeleton*** *= skeletonisation.*

Averaging the ADD values associated with each TBS value within-habitat, by season, as presented in Figure 4.7, exemplifies these observations. Herein it is clear that the amount of heat energy associated with the progression of decomposition is similar, with only minor differences. The pattern followed in each habitat is also largely similar, with greater deviation in the trends – and between habitats – noted later in decomposition (i.e. at higher TBS values). This is true for both seasons. Interestingly, reversals of TBS are still observed in the averaged data. However, this is more likely attributable to disparities between replicate seasons with respect to the ADD values associated with specific TBS values seasons, rather than rainfall rehydrating carcasses as observed with the individualised data. The same reason is likely responsible for the absence of periods of absolute stasis as observed with the individualised data.

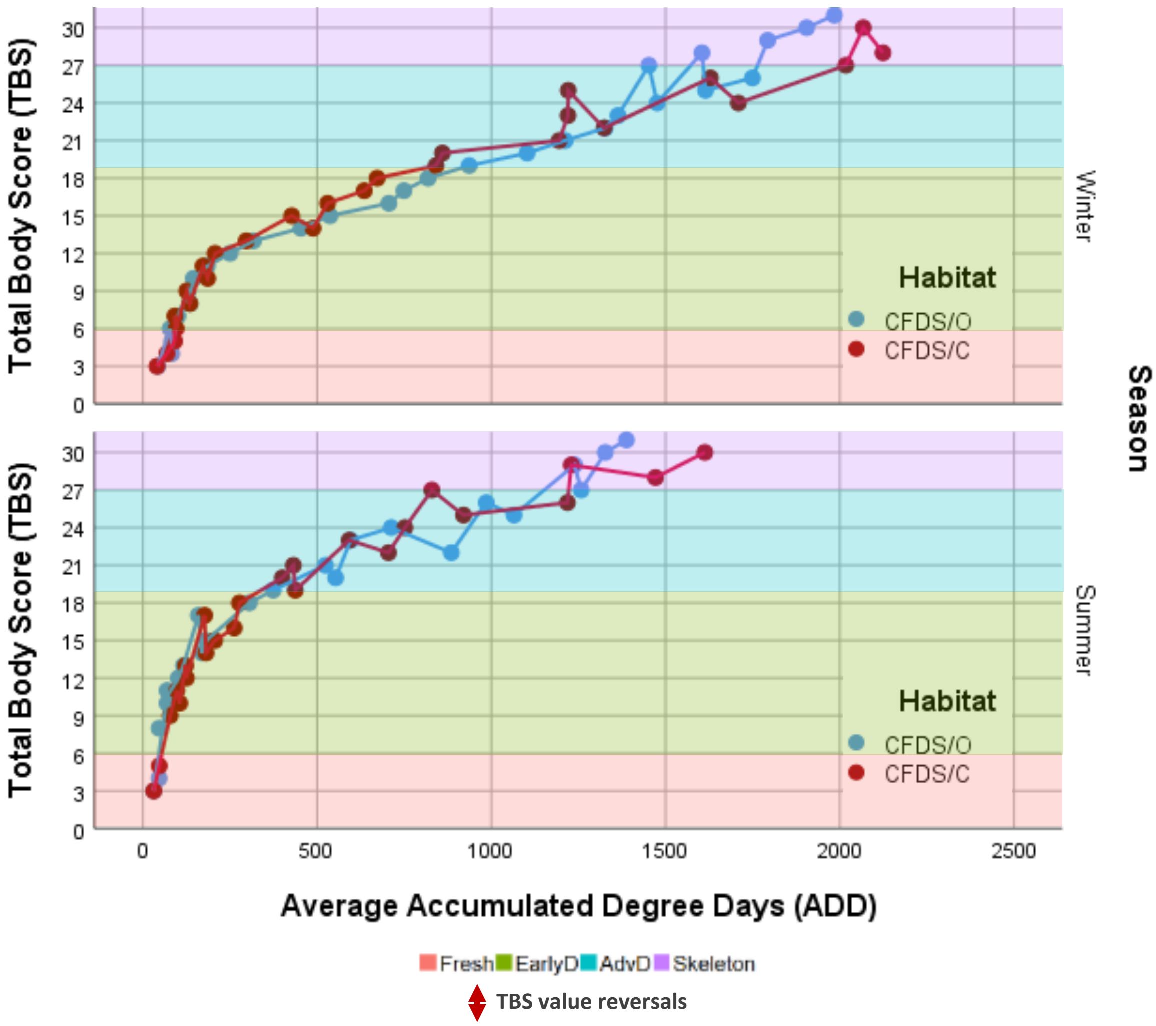


Figure 4.7: *Grouped scatter plot of average Accumulated Degree Days (ADD) in each habitat for each Total Body Score (TBS) value, grouped by seasonal cycle. Decomposition stages:* ***Fresh*** *= fresh;* ***EarlyD*** *= early decomposition;* ***AdvD*** *= advanced decomposition;* ***Skeleton*** *= skeletonisation.*

OBSERVATIONS ON DECOMPOSITION: PRESERVATION STATES

The only preservation state observed during the experimental period was natural mummification via desiccation of soft tissues. This preservation state was observed to occur on every carcass in both habitats and in both seasons. Mummification was most frequently observed to begin in the head region, although there were some instances where it began on the limbs.

The time to onset of mummification as defined using Megyesi and colleagues' (2005) definitions was longer compared to that when using this study's definitions (which were more specific), the results of which are presented in Tables 4.8, 4.9 and 4.10. Using Megyesi *et al.*'s (2005) definitions, the onset of mummification (i.e. when any one region of the carcass assumed a state of mummification) occurred as early as 17 days in summer (73 in winter). Using this study's definitions, the earliest onset of mummification (i.e. where any portion of the body comprising ≥1% of total body surface area mummified) occurred within 8 days in summer (49 days in winter). Completion of mummification occurred as early as 17 days in summer, and within at least 77 days in winter. Five of the 16 carcasses studied were completely mummified within one month (30 days) post-mortem, all during summer cycles (two in Cycle 2 | S-2015, and three in Cycle 3 | S-2016). Three of these were from the CFDS/O habitat; the other two were from the CFDS/C habitat; all from summer. Illustrations of what these carcasses looked like at the onset (own study definitions) and completion of mummification are presented in Figure 4.8. Seasonal differences in the timing of these milestones are significant, but between habitats (including within-season) they are not. That said, the onset of mummification occurs sooner, on average, in the CFDS/O, but reaches a state of completion sooner, on average, in the CFDS/C.

Table 4.8: Time (in 24-hour days) to onset and completion (~totality) of mummification per Megyesi et al.'s (2005) and this study's definitions, comparing season.

		Summer (n=8)	Winter (n=8)	TOTAL (N=16)	*H(1)*	*p*-value
Onset of mummification (Megyesi)	Median (IQR) (Range)	20.50 (3.00) (17-26)	92.00 (25.00) (73-112)	49.50 (72.00) (17-112)	11.344	***0.001**
Onset of mummification (this study)	Median (IQR) (Range)	12.50 (11.00) (8-20)	65.50 (14.00) (49-75)	34.50 (55.00) (8-75)	11.344	***0.001**
Completion of mummification (Megyesi)	Median (IQR) (Range)	28.50 (23.00) (17-67)	109.50 (19.00) (77-124)	72.00 (84.00) (17-124)	11.311	***0.001**

***H** statistic from Kruskal-Wallis test for nonparametric data, with degrees of freedom denoted in parenthesis* **p-value** *significant when p<0.05 and is denoted by* **bold** *type and an asterisk (*).*

Table 4.9: Time (in 24-hour days) to onset and completion (~totality) of mummification per Megyesi et al.'s (2005) and this study's definitions, comparing habitat.

		CFDS/O (n=8)	CFDS/C (n=8)	TOTAL (N=16)	*H(1)*	*p*-value
Onset of mummification (Megyesi)	Median (IQR) (Range)	52.00 (71.00) (17-112)	49.50 (79.00) (20-112)	49.50 (72.00) (17-112)	0.335	0.563
Onset of mummification (this study)	Median (IQR) (Range)	31.50 (54.00) (8-68)	41.00 (50.00) (8-75)	34.50 (55.00) (8-75)	0.543	0.461
Completion of mummification (Megyesi)	Median (IQR) (Range)	70.88 (83.00) (17-124)	68.13 (83.00) (23-115)	72.00 (84.00) (17-124)	0.003	0.958

***H** statistic from Kruskal-Wallis test for nonparametric data, with degrees of freedom denoted in parenthesis;* **p-value** *significant when p<0.05 and is denoted by* **bold** *type and an asterisk (*).*

Table 4.10: Time (in 24-hour days) to onset and completion (~totality) of mummification per Megyesi et al.'s (2005) and this study's definitions, comparing habitats within-season.

		Winter					***Summer***				
		CFDS/O (n=8)	**CFDS/C (n=8)**	**TOTAL (N=16)**	***H(1)***	***p*-value**	**CFDS/O (n=8)**	**CFDS/C (n=8)**	**TOTAL (N=16)**	***H(1)***	***p*-value**
Onset of mummification (Megyesi)	Median (IQR) (Range)	90.50 (22.00) (83-112)	97.50 (32.00) (73-112)	92.00 (25.00) (73-112)	0.190	0.663	20.00 (4.00) (17-21)	21.50 (5.00) (20-26)	20.50 (3.00) (17-26)	1.366	0.243
Onset of mummification (this study)	Median (IQR) (Range)	59.00 (18.00) (49-68)	65.50 (11.00) (62-75)	65.50 (14.00) (49-75)	0.527	0.468	10.00 (5.00) (8-14)	17.50 (10.00) (8-20)	12.50 (11.00) (8-20)	1.729	0.189
Completion of mummification (Megyesi)	Median (IQR) (Range)	104.50 (26.00) (95-124)	109.50 (30.00) (77-115)	109.50 (19.00) (77-124)	0.021	0.885	27.50 (39.00) (17-67)	30.00 (23.00) (23-51)	28.50 (23.00) (17-67)	0.083	0.773

H** statistic from Kruskal-Wallis test for nonparametric data, with degrees of freedom denoted in parenthesis;* ***p-value *significant when p<0.05 and is denoted by* ***bold*** *type and an asterisk (*).*

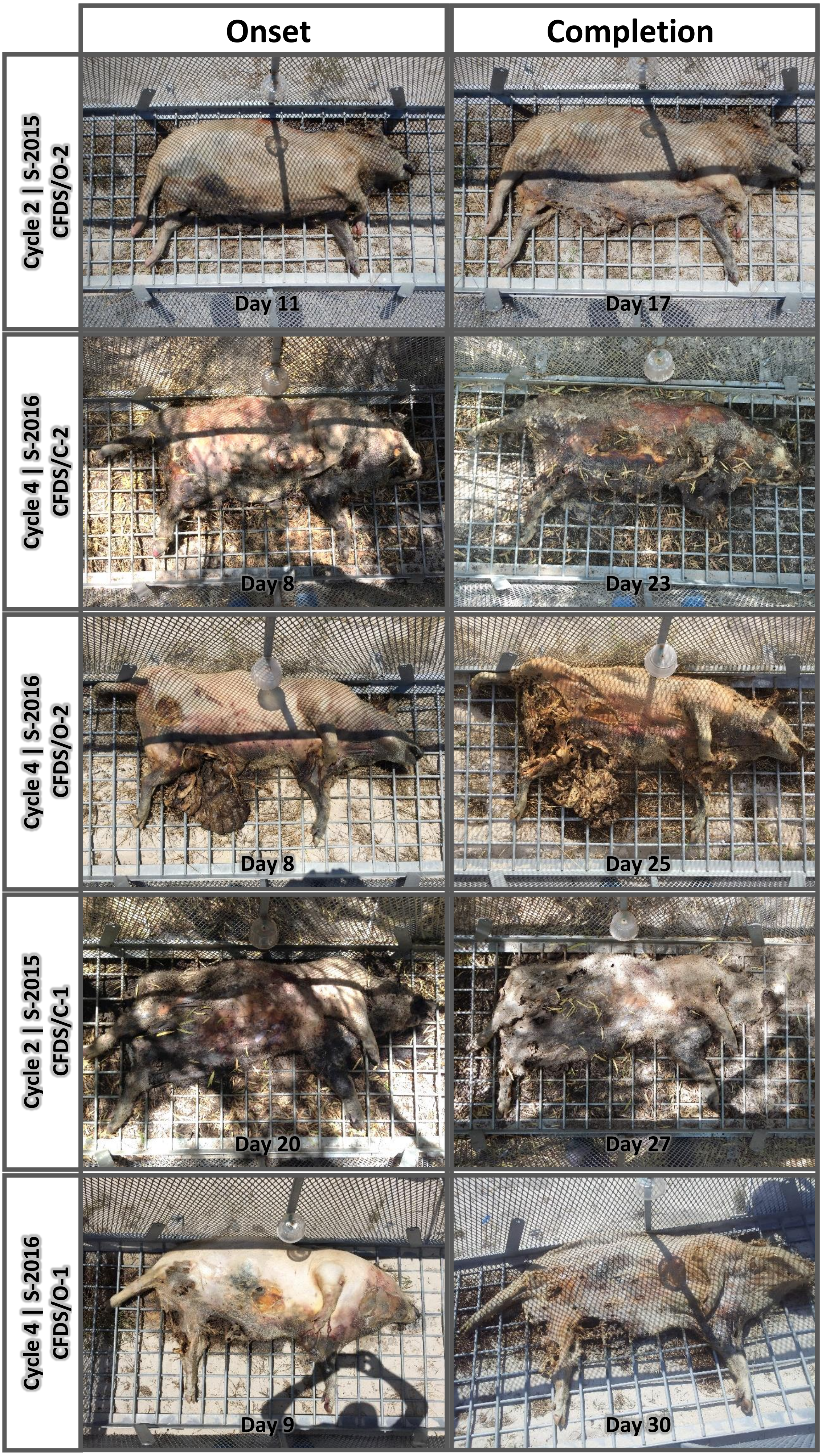


Figure 4.8: *The five carcasses which were completely mummified within one month (30 days), shown at the onset (this study's definition) and completion of mummification.*

Chapter 5
Results – Insect Data

INTRODUCTION

Decomposing vertebrate remains are attended by a wide variety of insect fauna who, in the absence of vertebrate scavengers, are the principle drivers of decay. Even if scavengers are present, necrophagous insect species which feed and breed on the remains contribute considerably to the decay process. As such, a baseline understanding of decomposition in any biogeoclimatic region must include an investigation into the attendant insect populations, particularly those of known forensic importance. That said, a comprehensive analysis and characterisation of the carcass-based entomofauna is not the focus or purpose of this research. Accordingly, the following report is not, and does not purport to be, exhaustive in its depth and scope. The focus is rather on those insect families and species of known forensic importance.

INSECTS IDENTIFIED

Over the duration of the experimental period, 15 forensically significant taxa were noted, comprising four fly families (Calliphoridae, Muscidae, Piophilidae, and Sarcophagidae), and seven beetle families (Cleridae, Dermestidae, Histeridae, Silphidae, Staphylinidae, Trogidae, and Scarabaeidae). Given the magnitude of their role in decay, the blow fly (Diptera: Calliphoridae) taxa were further distinguished to species level. Species observed included *Chrysomya albiceps*, *Chrysomya chloropyga*, *Chrysomya marginalis*, *Calliphora vicina*, and the two local Lucilia species: *Lucilia sericata* and *Lucilia cuprina* (grouped at genus level for the purpose of this study due to their morphological similarities). The same was effected for the bone beetles (Coleoptera: Cleridae), represented by *Necrobia rufipes*, and the Dermestid beetles (Coleoptera: Dermestidae), represented by *Dermestes maculatus*. Although the burying beetles (Coleoptera: Silphidae) are henceforth considered only at family level, two species were identified to occur locally: *Thanatophilus micans* and *Thanatophilus mutilatus*.

GENERAL TRENDS OF SPECIES RICHNESS AND ABUNDANCE

The presence or absence of these taxa, together with their abundances where the former was concerned, were noted during each site visit. As a reminder, abundance was scored in one of five categories: 0-5 | 6-20 | 21-50 | 51-100 | >100. This yielded data on the daily species richness (SR; number of species present) and total abundance (TA; number of insects present). These data, summarised by decomposition stage, are presented in Figures 5.1 (seasonal comparison) and 5.2 (habitat comparison). Both measures display a trend for increase as decomposition progresses in both habitats and seasons.

SEASONAL COMPARISON

Referring to Figure 5.1a, species richness initially increases faster in summer compared to winter. Specifically, in summer, SR is significantly greater than in winter in early decomposition ($H(1) = 8.133$, ***p* = 0.004**, median SR of 4.00 in summer, 3.00 in winter). Proceeding into advanced decomposition, species richness stays largely constant in summer, but climbs significantly higher in winter ($H(1) = 29.651$, ***p* = 0.000**, median SR of 4.00 in summer, 5.00 in winter). Species richness declines as decomposition proceeds into skeletonisation, being slightly lower in summer compared to winter. Referring to Figure 5.1b, total abundance increases with decomposition progression in a similar manner to that observed with species richness: total abundance is significantly higher in summer compared to winter in early decomposition ($H(1) = 4.476$, ***p* = 0.034**, median TA of 38.50 in summer, 19.00 in winter), and advanced decomposition ($H(1) = 58.506$, ***p* = 0.000**, median TA of 132.00 in summer, 61.00 in winter). The only difference exists in that, where total abundance declines in summer as the carcasses enter skeletonisation, it increases in winter (median TA of 79.00 in summer, 87.00 in winter). Considered overall, only total abundance differs significantly between seasons, with slightly higher total abundance in summer compared to winter ($H(1) = 5.412$, ***p* = 0.020**, median TA of 6.00 in winter, 6.00 in summer), arising from significant differences in total abundance in the CFDS/O habitat (Table 5.1). Species richness in the CFDS/O is also significantly different between winter and summer (Table 5.1), but when considered together with that of the CFDS/C, the difference is no longer significant ($H(1) = 5.412$, $p = 0.125$, median SR of 1.00 in winter, 1.00 in summer).

Referring to Figure 5.1b, attention is drawn to the large number of outliers in winter, especially for abundance in early and advanced decomposition. This may seem anomalous, but it is simply an artefact of the way insects colonise the carcasses in winter and the way the statistical software interprets the raw data thereof. Specifically, the conditions of winter contribute to the notable reduction in the number of insects present overall. Moreover, the cold fronts tend to supress insect activity (a fact which will be elaborated on in due course), resulting in sporadic periods with large numbers of insects separated by periods where insect activity is generally low. This yields many datum entries with few insects noted on the carcasses, and considerably fewer with large numbers of insects. A box plot registers these as outliers when the majority of entries contain small numbers of insects.

HABITAT COMPARISON

Comparing habitats with respect to species richness (Figure 5.2a) and total abundance (Figure 5.2b), both habitats exhibit the same general trend: increase in the measures as decomposition progresses up to advanced decomposition, and then reducing to skeletonisation. The only exception to this is the total abundance in the CFDS/O, which increased very slightly going into skeletonisation (median TA of 128.50 in advanced decomposition up to 136.00 in skeletonisation). The other notable pattern is that the CFDS/O measures are consistently higher than those from the CFDS/C, and in some cases significantly so. Species richness was significantly higher in the CFDS/O during early and advanced decomposition (**early decomposition:** H(1) = 107.026, ***p* = 0.000**, median SR of 4.00 in the CFDS/O, 1.00 in the CFDS/C; **advanced decomposition:** H(1) = 20.030, ***p* = 0.000**, median SR of 5.00 in the CFDS/O, 4.00 in the CFDS/C). Total abundance was significantly higher in the CFDS/O during early and advanced decomposition, and skeletonisation (**early decomposition:** H(1) = 129.682, ***p* = 0.000**, median TA of 58.00 in the CFDS/O, 6.00 in the CFDS/C; **advanced decomposition:** H(1) = 70.297, ***p* = 0.000**, median TA of 128.50 in the CFDS/O, 58.00 in the CFDS/C; **skeletonisation:** H(1) = 34.333, ***p* = 0.000**, median TA of 136.00 in the CFDS/O, 35.00 in the CFDS/C). Indeed, such are the magnitudes of these differences that overall species richness and total abundance is significantly higher in the CFDS/O compared to the CFDS/C (**SR:** H(1) = 30.603, ***p* = 0.000**, median SR of 2.00 in the CFDS/O, 1.00 in the CFDS/C; **TA:** H(1) = 54.373, ***p* = 0.000**, median TA of 19.00 in the CFDS/O, 3.00 in the CFDS/C). Considered overall, both species richness and total abundance differ significantly between habitats, with higher measures of both in the CFDS/O compared to the CFDS/C (**species richness:** H(1) = 30.603, ***p* = 0.000**, median SR of 2.00 in the CFDS/O, 1.00 in the CFDS/C; **total abundance:** H(1) = 54.373, ***p* = 0.000**, median TA of 19.00 in the CFDS/O, 3.00 in the CFDS/C). The biggest differences occur in summer (Table 5.1).

Table 5.1: Tests for differences in species richness and total abundance between habitats, and between seasons.

	Habitat	Species Richness		Total Abundance		Season	Species Richness		Total Abundance	
		Winter	Summer	Winter	Summer		CFDS/O	CFDS/C	CFDS/O	CFDS/C
Median (IQR)	CFDS/O	2.00 (6.00)	3.00 (4.00)	17.50 (94.00)	35.50 (165.00)	Winter	2.00 (6.00)	1.00 (4.00)	17.50 (94.00)	3.00 (35.00)
Range		0-10	0-8	0-441	0-417		0-10	0-9	0-441	0-164
Kruskal-Wallis H		3.993		4.494			24.821		35.322	
df		1		1			1		1	
Asymp. Sig.		0.046		0.034			0.000		0.000	
Median (IQR)	CFDS/C	1.00 (4.00)	1.00 (4.00)	3.00 (35.00)	3.00 (61.00)	Summer	3.00 (4.00)	1.00 (4.00)	35.50 (165.00)	3.00 (61.00)
(Range)		0-9	0-8	0-164	0-325		0-8	0-8	0.417	0-325
Kruskal-Wallis H		0.135		1.796			6.880		21.012	
df		1		1			1		1	
Asymp. Sig.		0.713		0.180			0.009		0.000	
	a. Kruskal Wallis Test					a. Kruskal Wallis Test				
	b. Grouping Variable: Season					b. Grouping Variable: Habitat				

***IQR** = Interquartile Range; **df** = degrees of freedom; Significance denoted by red-coloured text;* $p \leq 0.05$.

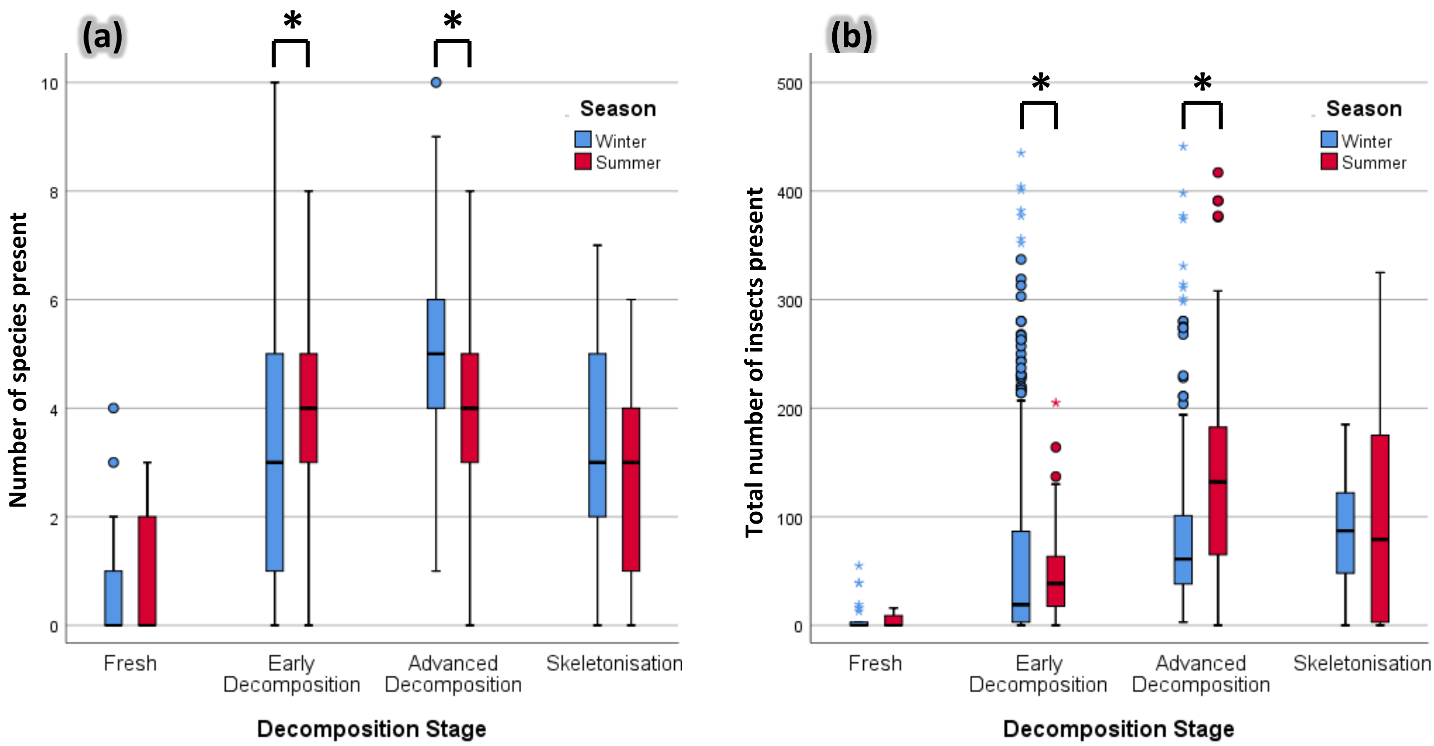


Figure 5.1: *Boxplots of number of species present (**a**) total number of insects present (**b**) across the four decomposition stages, comparing seasons. Each box represents the interquartile range, with the median value denoted by a line across the box. The whiskers extend to the maximum and minimum values no greater than 1.5 times the interquartile range. Outliers (1.5-3x greater than the interquartile range) are indicated with circles; extreme values (>3x the interquartile range) are indicated with coloured asterisks. Significant differences (p ≤ 0.05) denoted with an asterisk (*).*

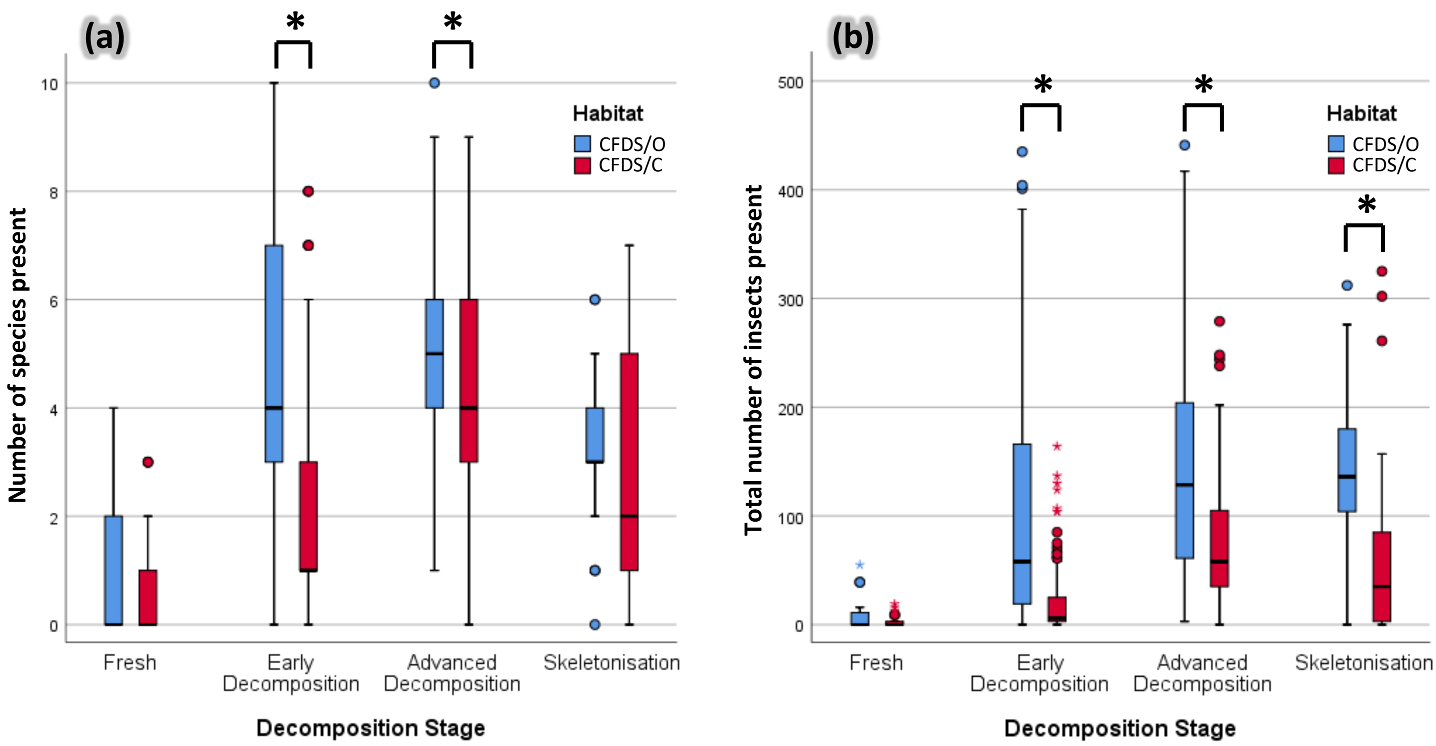


Figure 5.2: *Boxplots of number of species present (**a**) and total number of insects present (**b**) across the four decomposition stages, comparing habitats. Each box represents the interquartile range, with the median value denoted by a line across the box. The whiskers extend to the maximum and minimum values no greater than 1.5 times the interquartile range. Outliers (1.5-3x greater than the interquartile range) are indicated with circles; extreme values (>3x the interquartile range) are indicated with coloured asterisks. Significant differences (p ≤ 0.05) denoted with an asterisk (*).*

INSECT SUCCESSION PATTERNS

To investigate the patterns above in more detail, the presence/absence and abundance data were used to generate abundance plots for each carcass. An example of one of these is presented in Figure 5.3 (top plot, built with abundance data derived from CFDS/O-1 in Cycle 3 | W-2015). The change in thickness of each species' line corresponds to that species' change in abundance over time. For analytical purposes, these data were benchmarked against decomposition stage, and the major weather variables which act upon the insect populations (namely, temperature, rainfall, wind, and solar radiation load). These plot clusters were built using an original script coded specifically for this purpose in *R*. An example of the source code to build one of these plot clusters is available in Appendix A5.1. All 16 plot clusters were analysed in detail for observations on species occurrence and succession patterns, as well as possible qualitative correlations between these patterns and those of the weather. A detailed analysis for each carcass may be found in Appendix A5.2, and all 16 abundance plots may be found in Appendix A5.3. A summary of the forensically-relevant findings follows:

FIRST ARRIVALS

Calliphora vicina, Lucilia spp., *Necrobia rufipes* and Trogidae were the first species/families noted to arrive (i.e. on the first or second day) during winter. Lucilia spp. were the first to arrive during summer, sometimes together with or closely followed by *Chrysomya albiceps* and the Muscidae. This pattern is largely conserved between habitats. All were first noted on the carcasses during the morning (after 09h00).

BLOW FLY COLONISATION

Blow fly colonisation of carcasses (i.e. presence of adult blow flies on the carcasses) lasts between one and four weeks in summer, and 12 and 15 weeks in winter. The former covers the fresh/early decomposition stages, with persistence of low numbers of the Lucilia spp. a couple of days into advanced decomposition. The latter extends approximately midway into advanced decomposition, give or take a few days. This effect is more pronounced in the CFDS/C than in the CFDS/O. These colonisation patterns are inclusive of emergent adults, and thus represent the total time the carcasses are viable resources for the blow fly species studied. The time between the end of initial colonisation by adults and the onset of emergence of new adults is, on average, one week in summer, and two weeks in winter. Emergence events are short, rarely lasting more than a week. It serves to note that emergence events were rarely observed in winter, and then only in the CFDS/C habitat. In summer, emergence events were observed in both habitats, but were noted to be smaller (with respect to abundance) in the CFDS/C compared to the CFDS/O.

During summer, *Chrysomya albiceps* populations (excluding emergent individuals) are almost entirely confined to early decomposition, alongside other blow fly species. During winter, they arrive noticeably later than the Lucilia spp. and *Calliphora vicina*, overlapping to a large degree with the populations of *Chrysomya chloropyga*. *Chrysomya chloropyga* is the species which persists the longest in the CFDS/C habitat in winter compared to other species; in the CFDS/O it is usually the Lucilia spp., but the possibility exists for *Chrysomya albiceps* to persist for a longer time, albeit arriving closer to springtime when the carcasses are in the late phases of early decomposition or early phases of advanced decomposition. In summer, *Chrysomya albiceps* and the Lucilia spp. persist equally as long – longer by a few days than *Chrysomya marginalis*, with *C. marginalis* confined to advanced decomposition. Again, this pattern is consistent between habitats.

With respect to occurrence and abundances, overall blow fly abundances are more spread out in winter compared to summer (i.e. maximal abundance occurs over a shorter period of time in summer, both literally and relative to the length of the season). However, it is lower in the former compared to the latter. In summer, the blow fly abundances are greater in the CFDS/C than in the CFDS/O. There are some species/family-specific patterns, too: *Calliphora vicina* is an exclusively winter species, with greater abundances in the CFDS/C than the CFDS/O. *Chrysomya marginalis* and *Chrysomya albiceps* are predominantly summer species: *C. marginalis* was only observed only once in winter (Cycle 3 | W-2015), and then only late in the decomposition cycle, around end-September/early October; *C. albiceps* populations are definitively larger in summer compared to winter, with winter populations colonising the remains much later in the decomposition sequence compared to summer populations. *Chrysomya chloropyga* is entirely absent in summer, being present only in late-winter/early-spring. The Lucilia spp. are present in both seasons; in winter, their abundances are greater in the CFDS/O than in the CFDS/C. In the same season, Muscidae populations are general low across habitats, and are larger in the CFDS/C than in the CFDS/O in summer. Sarcophagidae individuals were rarely and only sporadically observed.

BEETLE COLONISATION

Necrobia rufipes, *Dermestes maculatus*, and the Histeridae are the only beetles present in both habitats in both seasons. They arrive sooner (by several weeks) in the CFDS/O compared to the CFDS/C in winter, and around the same time in both habitats in summer. In both seasons, these species are more consistently present, and for longer, in the CFDS/O compared to the CFDS/C. *Dermestes maculatus* populations, in particular, were noted to be consistently *larger* in the CFDS/O compared to the CFDS/C, regardless of season. The pattern is reversed for Histeridae populations in winter, wherein they are larger in the CFDS/C compared to the CFDS/O. The Trogidae are an exclusively winter species, arriving approximately two weeks later in the CFDS/O compared to the CFDS/C, and present only in the fresh and early decomposition stages, always in low numbers. The Silphidae spp. are a predominantly winter species, arriving relatively early in the decomposition sequence. The populations are larger and more persistent in the CFDS/C compared to the CFDS/O – with individuals still present well into advanced decomposition in the former. Their summer populations are small and sporadic, and then only present in the CFDS/C. A general trend noted is that the beetle populations are larger in the CFDS/C than in the CFDS/O in winter.

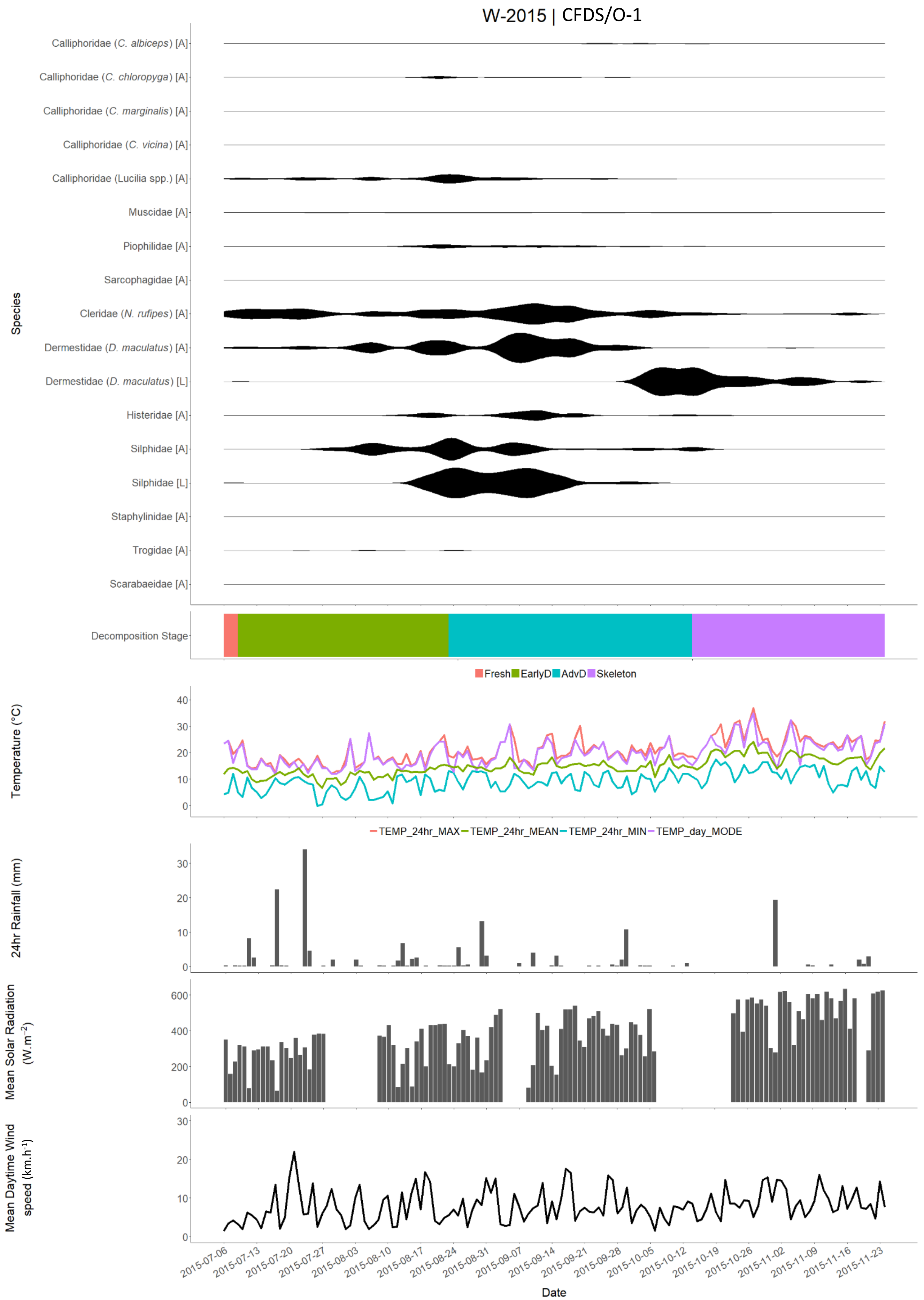


Figure 5.3: *Example of an abundance plot (top) from a winter cycle (Cycle 3), benchmarked against decomposition stage and daily weather data (24hr maximum, mean, minimum, and modal temperatures [°C]; 24hr rainfall [mm], mean daily solar radiation [W.m^{-2}], and mean daytime wind speed [km.h^{-1}]).*

Occurrence matrices

Abundance and succession data were assimilated into occurrence matrices for each carcass, where presence/absence is denoted with a binary code (i.e. 0 for absent; 1 for present) for each sampling interval (7 days ±1 day). To establish baseline occurrence matrices which are seasonally- and habitat-specific, the occurrence matrices for each carcass in each habitat in each seasonal cycle were combined. For each sampling interval, a taxon was only noted as present if it was observed at both carcasses during both seasonal cycles. The resultant seasonally- and habitat-specific occurrence matrices are presented in Tables 5.2-5.5. The raw data from which these are derived are available in Appendices A5.4-A5.7.

While the succession plots provide detail on carcass-specific insect occurrence, and many of the patterns noted from the succession plots are also evident in the seasonally- and habitat-specific occurrence matrices, the value of latter lies in their general applicability. That is, they are a starting point for any forensic analysis in the local context which is reliant on entomological evidence, telling you which taxa are most likely to be found at any point in the decomposition sequence given circumstances similar to those under which the experiment was performed. Notable observations in this regard include:

<u>Tables 5.2 & 5.3 (winter decomposition)</u>

- Very little blow fly activity may be expected in the first two weeks of decay in winter, regardless of habitat. Blow fly activity only starts picking up five weeks into decay. It is, however, more sustained in the CFDS/O compared to the CFDS/C, with the Lucilia spp. being the dominant taxa.
- *Chrysomya albiceps* is definitively associated with the transition to warmer seasons, only arriving eight weeks into decay (~beginning of September which is the start of spring). Their presence is short-lived, only around two weeks.
- *Chrysomya chloropyga* exhibits a similar occurrence pattern to *C. albiceps* but persists in a more sustained manner and for longer.
- Muscidae may be expected to be rarely present, if at all, in both habitats.
- The Piophilidae are present for 30% longer in the CFDS/O compared to the CFDS/C; their continued presence may be expected from five weeks into decay.
- Beetle populations, in general, are present for longer in the CFDS/O compared to the CFDS/C. This is especially evident with *Necrobia rufipes* (presence expected from week 4 in the CFDS/O; week 7 in the CFDS/C), and *Dermestes maculatus* (sustained presence of adults expected from week 3 in the CFDS/O; week 12 in the CFDS/C).

- The Silphidae spp. arrive earlier in the CFDS/O compared to the CFDS/C, by seven weeks (week 2 vs. week 9, respectively). The Histeridae display a similar pattern of earlier arrival in the CFDS/O (week 6 vs. week 12).
- The Trogidae exhibit the reversed pattern, arriving two weeks earlier in the CFDS/C compared to the CFDS/O, the former from the first week of decay.

Tables 5.4 & 5.5 (summer decomposition)

- There is no delay in blow fly colonisation in either habitat in summer. *Chrysomya albiceps* and the Lucilia spp. are present in both, but not for longer than four weeks post-mortem.
- *Chrysomya marginalis* is present only in the CFDS/C, and then only definitively for the first week of decay.
- The Muscidae and Piophilidae are similarly present from the first week of decay for similar amounts of time, but not for longer than five weeks post-mortem.
- Only three of the beetle taxa noted can generally be expected in summer: *Necrobia rufipes*, *Dermestes maculatus*, and the Histeridae. Collectively, they are present for longer in the CFDS/O compared to the CFDS/C, persisting until week 9 in the former, and week 6 in the latter. It serves to note, though, that *Necrobia rufipes* may be expected in isolation in week 9 in the CFDS/C.
- It also serves to note that *Dermestes maculatus* adults are present in the CFDS/C in only two discrete periods: in week 1 and week 5. This, in contrast to the CFDS/O where there is a continuous presence from week 2, broken only by absence in week 6.

Table 5.2: Insect occurrence matrix for the CFDS/O habitat in winter.

	Taxon			Sampling Interval	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	Order	Family	Species	Cycle Days	0 - 7	8 - 14	15 - 21	22 - 28	29 - 35	36 - 42	43 - 49	50 - 56	57 - 63	64 - 70	71 -77	78 -84	85 -91	92 - 98	99 -105	106 - 112	113 - 119	120 - 126	127 - 133	134 - 141
CFDS/O | WINTER	Diptera		*Chrysomya albiceps*	Adult	0	0	0	0	0	0	0	1	1	0	0	1	0	0	0	0	0	0	0	0
			Chrysomya chloropyga	Adult	0	0	0	0	0	1	0	1	1	1	1	1	0	0	0	0	0	0	0	0
		Calliphoridae	*Chrysomya marginalis*	Adult	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			Lucillia spp.	Adult	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0
			Calliphora vicina	Adult	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Muscidae	-	Adult	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Piophilidae	-	Adult	0	0	0	0	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0
		Sarcophagidae	-	Adult	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Coleoptera	Cleridae	*Necrobia rufipes*	Adult	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	0
		Dermestidae	*Dermestes maculatus*	Adult	0	0	1	1	1	1	1	1	1	1	1	0	0	1	1	0	0	0	0	0
		Dermestidae	*Dermestes maculatus*	Larva	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	1	1
		Histeridae	-	Adult	0	0	0	0	0	1	1	0	1	0	1	1	0	1	1	1	1	0	0	0
		Silphidae	-	Adult	0	0	1	1	1	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0
		Silphidae	-	Larva	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0
		Staphylinidae	-	Adult	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Trogidae	-	Adult	0	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Scarabaeidae	-	Adult	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = absent; 1 = present

Table 5.3: Insect occurrence matrix for the CFDS/C habitat in winter.

	Taxon			Sampling Interval	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	Order	Family	Species	Cycle Days	0 - 7	8 - 14	15 - 21	22 - 28	29 - 35	36 - 42	43 - 49	50 - 56	57 - 63	64 - 70	71 -77	78 -84	85 -91	92 - 98	99 -105	106 - 112	113 - 119	120 - 126	127 - 133	134 - 141
CFDS/C | WINTER	Diptera		*Chrysomya albiceps*	Adult	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0
			Chrysomya chloropyga	Adult	0	0	0	0	0	0	0	0	1	1	1	0	1	0	0	0	0	0	0	0
		Calliphoridae	*Chrysomya marginalis*	Adult	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			Lucillia spp.	Adult	0	0	0	0	1	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0
			Calliphora vicina	Adult	0	0	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
		Muscidae	-	Adult	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Piophilidae	-	Adult	0	0	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0
		Sarcophagidae	-	Adult	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Coleoptera	Cleridae	*Necrobia rufipes*	Adult	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	0	0	1	1	0
		Dermestidae	*Dermestes maculatus*	Adult	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
		Dermestidae	*Dermestes maculatus*	Larva	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
		Histeridae	-	Adult	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0
		Silphidae	-	Adult	0	0	0	0	0	0	0	0	1	1	0	0	1	0	1	1	0	0	0	0
		Silphidae	-	Larva	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0
		Staphylinidae	-	Adult	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Trogidae	-	Adult	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Scarabaeidae	-	Adult	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = absent; 1 = present

Table 5.4: Insect occurrence matrix for the CFDS/O habitat in summer.

	Taxon			Sampling Interval	1	2	3	4	5	6	7	8	9	10	11
	Order	Family	Species	Cycle Days	0 - 7	8 - 14	15 - 21	22 - 28	29 - 35	36 - 42	43 - 49	50 - 56	57 - 63	64 - 70	71 -77
CFDS/O | SUMMER	Diptera	Calliphoridae	*Chrysomya albiceps*	Adult	1	1	1	0	0	0	0	0	0	0	0
			Chrysomya chloropyga	Adult	0	0	0	0	0	0	0	0	0	0	0
			Chrysomya marginalis	Adult	0	0	0	0	0	0	0	0	0	0	0
			Lucillia spp.	Adult	1	1	0	0	0	0	0	0	0	0	0
			Calliphora vicina	Adult	0	0	0	0	0	0	0	0	0	0	0
		Muscidae	-	Adult	1	1	1	1	0	0	0	0	0	0	0
		Piophilidae	-	Adult	1	0	0	1	1	0	0	0	0	0	0
		Sarcophagidae	-	Adult	0	0	0	0	0	0	0	0	0	0	0
	Coleoptera	Cleridae	*Necrobia rufipes*	Adult	1	1	1	1	1	1	1	1	1	0	0
		Dermestidae	*Dermestes maculatus*	Adult	0	1	1	1	1	0	1	1	1	0	0
		Dermestidae	*Dermestes maculatus*	Larva	0	0	1	1	1	1	1	1	1	0	0
		Histeridae	-	Adult	0	1	1	1	0	0	1	0	0	0	0
		Silphidae	-	Adult	0	0	0	0	0	0	0	0	0	0	0
		Silphidae	-	Larva	0	0	0	0	0	0	0	0	0	0	0
		Staphylinidae	-	Adult	0	0	0	0	0	0	0	0	0	0	0
		Trogidae	-	Adult	0	0	0	0	0	0	0	0	0	0	0
		Scarabaeidae	-	Adult	0	0	0	0	0	0	0	0	0	0	0

0 = absent; 1 = present

Table 5.5: Insect occurrence matrix for the CFDS/C habitat in summer.

	Taxon			Sampling Interval	1	2	3	4	5	6	7	8	9	10	11
	Order	Family	Species	Cycle Days	0 - 7	8 - 14	15 - 21	22 - 28	29 - 35	36 - 42	43 - 49	50 - 56	57 - 63	64 - 70	71 -77
CFDS/C | SUMMER	Diptera	Calliphoridae	*Chrysomya albiceps*	Adult	1	0	1	1	0	0	0	0	0	0	0
			Chrysomya chloropyga	Adult	0	0	0	0	0	0	0	0	0	0	0
			Chrysomya marginalis	Adult	1	0	0	0	0	0	0	0	0	0	0
			Lucillia spp.	Adult	1	0	1	1	0	0	0	0	0	0	0
			Calliphora vicina	Adult	0	0	0	0	0	0	0	0	0	0	0
		Muscidae	-	Adult	1	1	1	0	0	0	0	0	0	0	0
		Piophilidae	-	Adult	0	1	0	1	0	0	0	0	0	0	0
		Sarcophagidae	-	Adult	0	0	0	0	0	0	0	0	0	0	0
	Coleoptera	Cleridae	*Necrobia rufipes*	Adult	0	1	1	1	1	1	0	0	1	0	0
		Dermestidae	*Dermestes maculatus*	Adult	1	0	0	0	1	0	0	0	0	0	0
		Dermestidae	*Dermestes maculatus*	Larva	0	0	1	1	1	1	0	0	0	0	0
		Histeridae	-	Adult	0	1	0	0	0	0	0	0	0	0	0
		Silphidae	-	Adult	0	0	0	0	0	0	0	0	0	0	0
		Silphidae	-	Larva	0	0	0	0	0	0	0	0	0	0	0
		Staphylinidae	-	Adult	0	0	0	0	0	0	0	0	0	0	0
		Trogidae	-	Adult	0	0	0	0	0	0	0	0	0	0	0
		Scarabaeidae	-	Adult	0	0	0	0	0	0	0	0	0	0	0

0 = absent; 1 = present

BLOW FLY LARVAE

In addition to carcass-based insect occurrence, blow fly larvae migration magnitude and directionality were documented via analysis of pitfall trap collections. Overall numbers obtained from the pitfall traps in each habitat, comparing seasons, are presented in Figure 5.4. It is immediately clear that more migrating larvae were captured in winter compared to summer. Within winter, the majority of those were captured in the CFDS/O. The opposite is true in summer, where more migrating larvae were captured in the CFDS/C than in the CFDS/O.

Inferences about directionality cannot be made directly from these data due to differences in the population sizes of the blow fly larvae migrating away from the carcasses. To enable comparison, for each carcass in each season, the number of larvae captured in each directional trap (i.e. north, east, south, west) was translated into a percentage of the total number captured. These values were then averaged across carcasses by habitat within-season (e.g. all CFDS/O carcasses in summer). These results are summarised in Figure 5.5, which indicates habitat-specific directionality in each season, as well as the overall average directionality.

In summer, west is the dominant direction for migration in the CFDS/O, with an average of almost 40% of the total number of blow fly larvae captured at CFDS/O carcasses in summer migrating in that direction. There does not appear to be any directional preference in the CFDS/C. In winter, the pattern reverses in the CFDS/O, with east the dominant direction for migration, this time with almost 60% of the total number of blow fly larvae captured at CFDS/O carcasses in winter. By contrast, west was the dominant migratory direction in the CFDS/C. Combining all data, west emerged as the dominant migratory direction (42% of total blow fly larvae captured), followed by east (29%), then north (17%), and lastly south (12%).

To round off the analysis of blow fly larvae migration, the timing of migration events during each seasonal cycle was assessed. Figures 5.6 – 5.9 represent the number of blow fly larvae captured in each directional pitfall trap at each carcass during each seasonal cycle. Several general observations may be made:

- During winter cycles, more migratory events were recorded in the CFDS/O compared to the CFDS/C, and migration also starts sooner in the former compared to the latter.
- Migrations occurred over a longer portion of the cycle during the second winter (Cycle 3 | W-2015) compared to the first (Cycle 1 | W-2014). However, migratory events were generally smaller in magnitude in the former than in the latter – true for both habitats.
- Summer cycles displayed less variation in the number of migratory events between habitats compared to that observed during winter cycles.
- Migratory events were definitively larger in the CFDS/C compared to the CFDS/O during the first summer cycle (Cycle 2 | S-2015), but all migratory events largely coincided

temporally. The reverse is true for the second summer cycle (Cycle 4 | S-2016), where migratory events were generally larger in the CFDS/O compared to the CFDS/C. Again, however, the events largely coincided temporally.

- With respect to all four cycles, migratory events largely coincide with each other, with few exceptions.

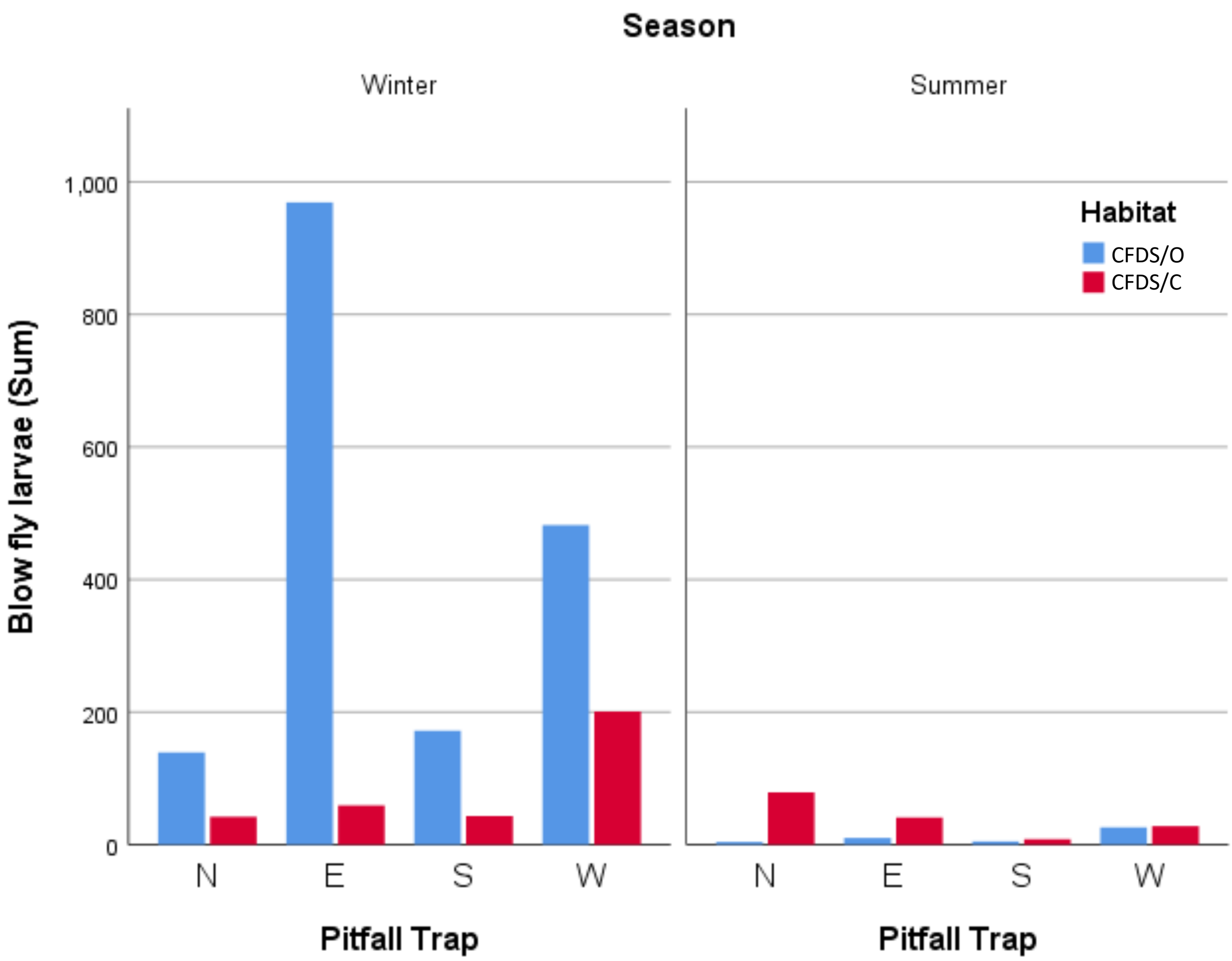


Figure 5.4: *Habitat and seasonal comparison of total number of blow fly larvae captured in the pitfall traps across the four directionalities sampled.*

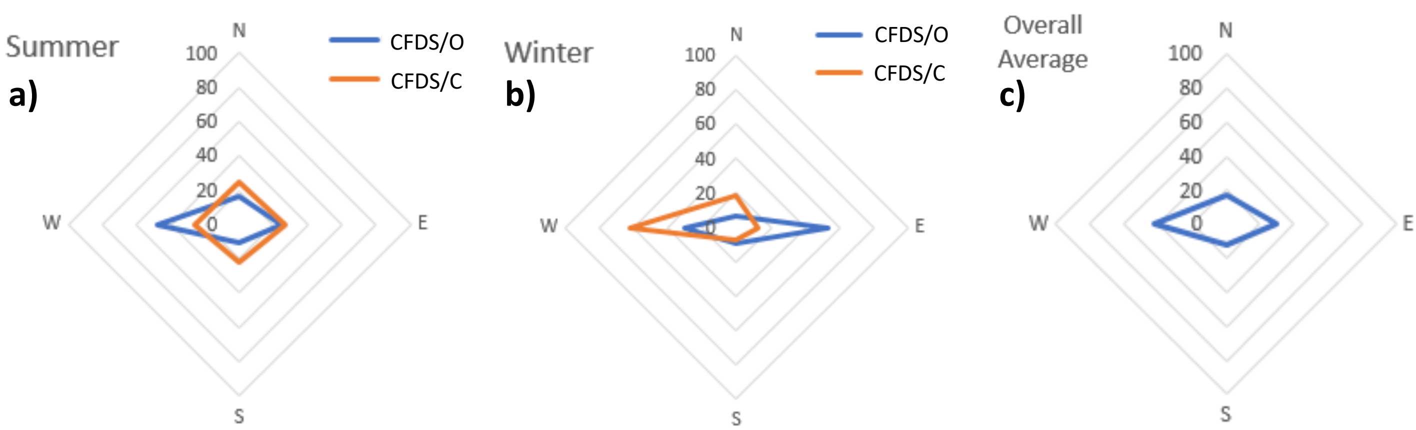


Figure 5.5: *Average directionality of blow fly larvae migration in summer **(a)**, winter **(b)**, and overall **(c)**. Values represent percentage of total sample, respectively.*

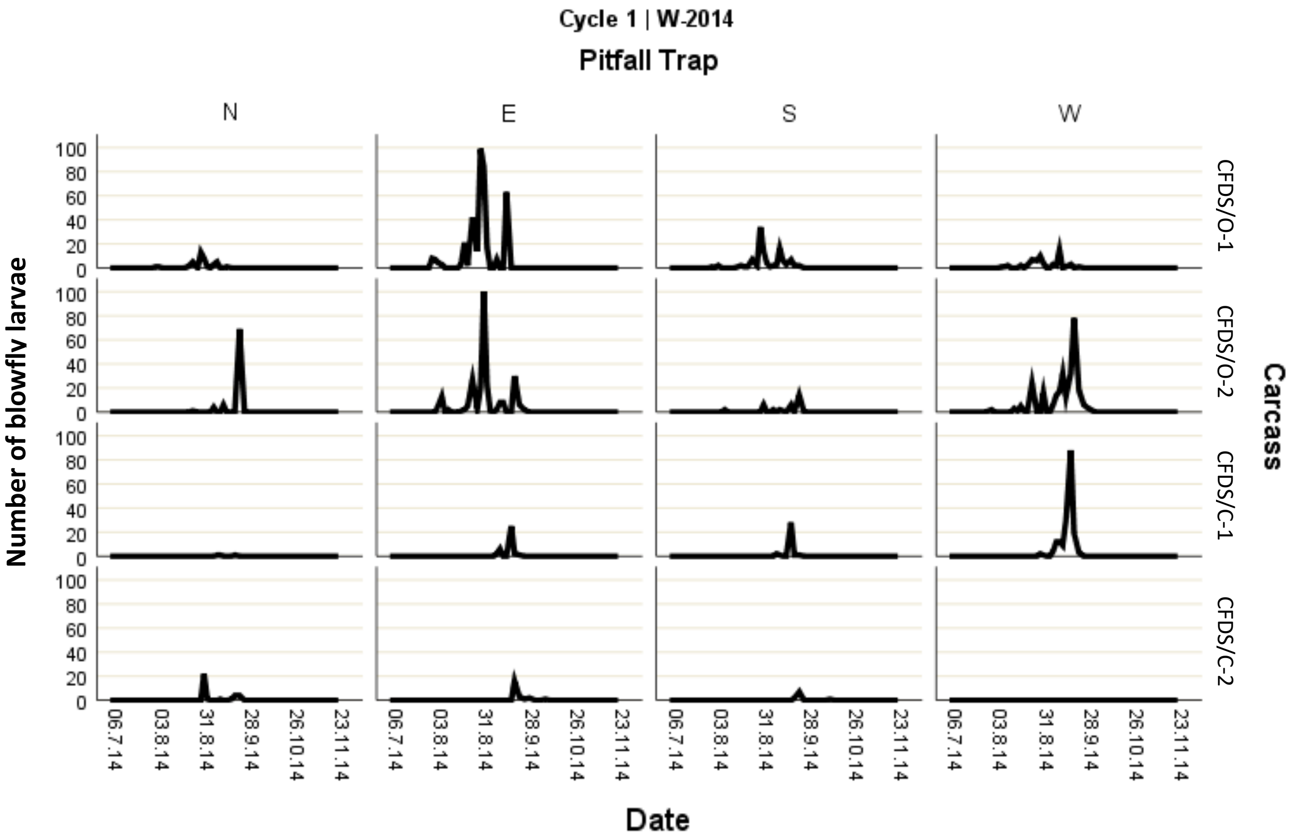


Figure 5.6: *Number of blowfly larvae migrating away from carcasses during Cycle 1 (W-2014), showing timing of migration events and directionality.*

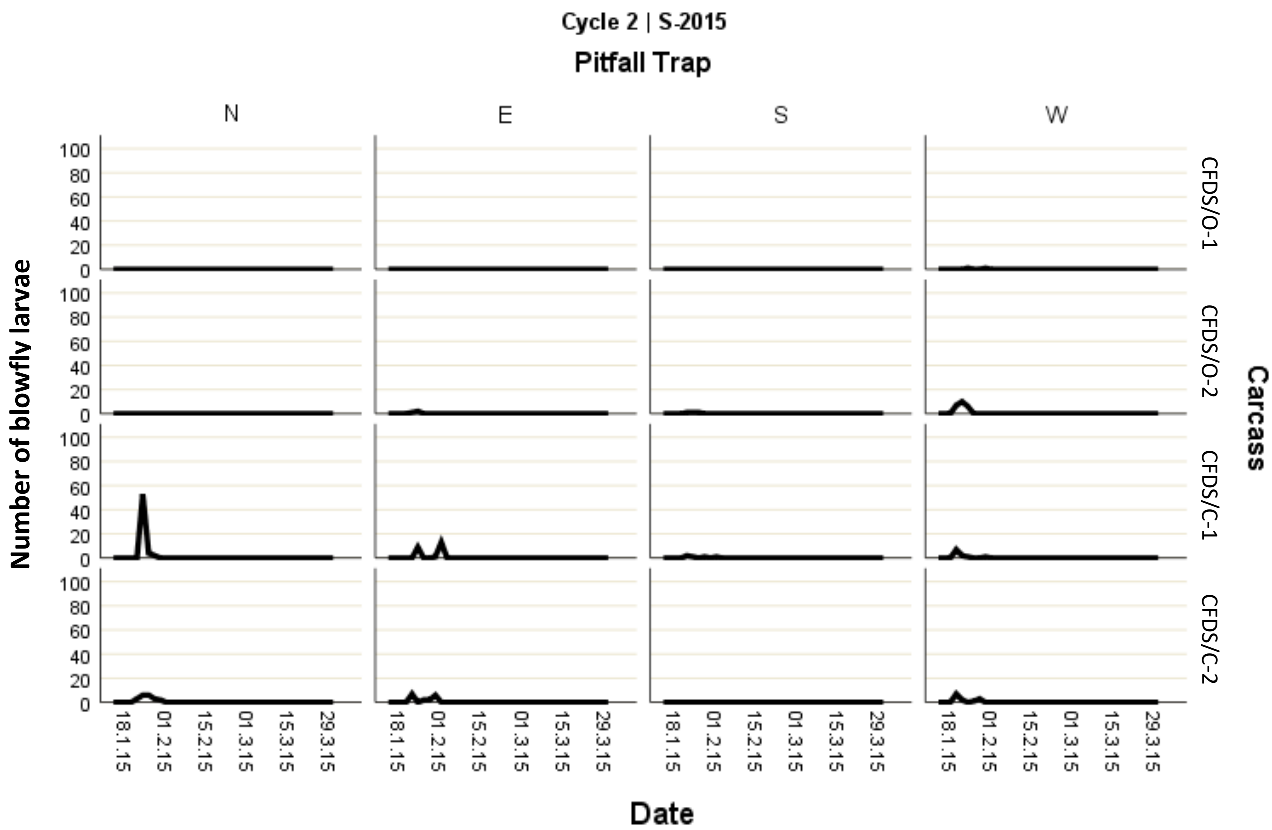


Figure 5.7: *Number of blowfly larvae migrating away from carcasses during Cycle 2 (S-2015), showing timing of migration events and directionality.*

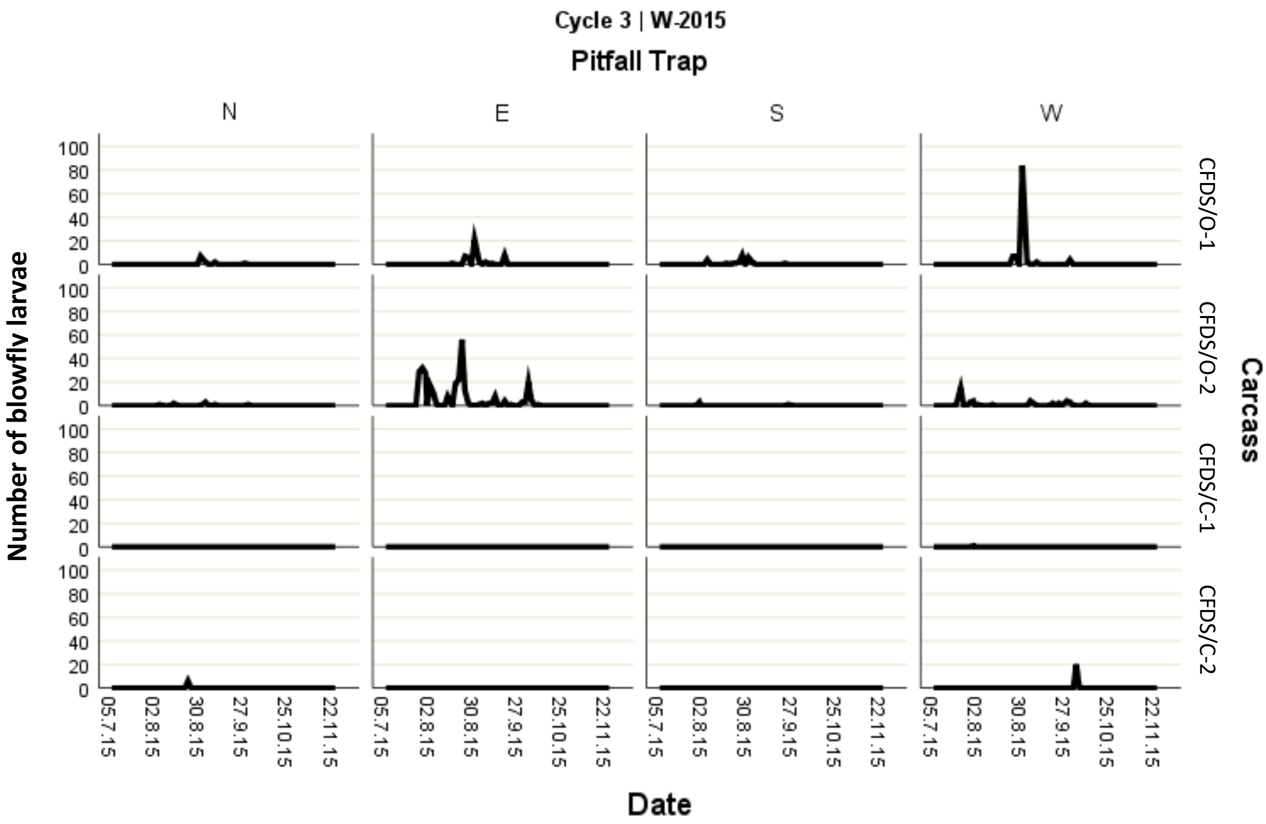


Figure 5.8: Number of blowfly larvae migrating away from carcasses during Cycle 3 (W-2015), showing timing of migration events and directionality.

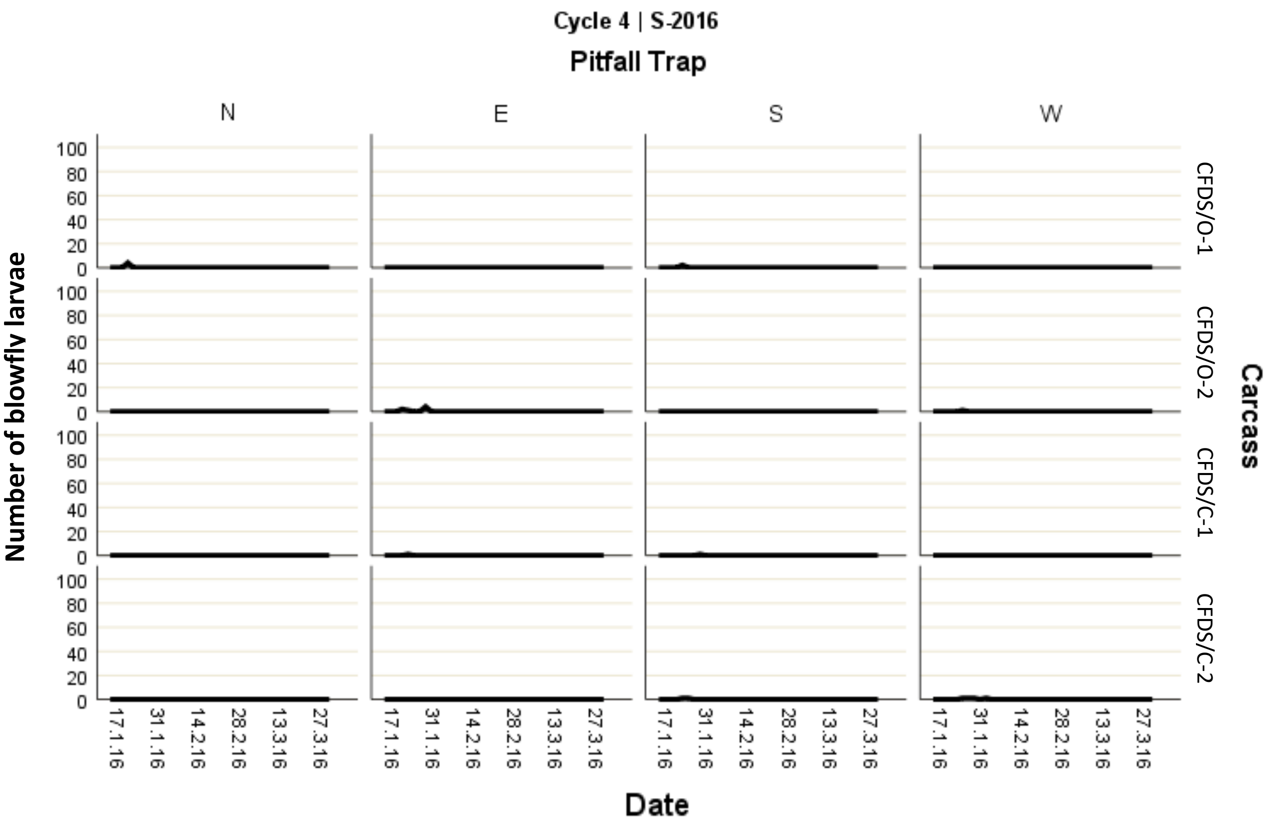


Figure 5.9: Number of blowfly larvae migrating away from carcasses during Cycle 4 (S-2016), showing timing of migration events and directionality.

Chapter 6
Results – Small Mammal Scavenging

INTRODUCTION

Scavenging of the porcine carcasses was observed in both habitats during Cycles 1 (W-2014), 3 (W-2015), and 4 (S-2016), and only in the CFDS/C habitat during Cycle 2 (S-2015). It was an unexpected occurrence given the caging of the carcasses which was designed, in-part, to keep scavengers out to prevent dispersal of the remains. It was noted from the start of Cycle 1 that scavenger(s) gained access to the carcasses by digging underneath the perimeter of the cages and entering through the gaps in the weighing grid. One Bushnell® TrophyCam® (model 119436) and one Cuddeback® Capture™ 1125 motion-activated infrared camera trap was deployed in the CFDS/C habitat during the second week of Cycle 1 to determine which scavenger species were active. Analysis of the first set of camera trap photographs revealed the presence of Cape grey mongoose (*Galerella pulverulenta*) at both carcasses (Figure 6.1). Subsequent deployment of the camera traps inside the cages at both carcasses capturing photo- and videographic evidence confirmed scavenging activity by this species. The Bushnell® camera trap was relocated to the CFDS/O habitat the following month. Again, Cape grey mongoose was observed to be the scavenger (Figure 6.2).

Across Cycles 1 and 2, scavenging activity was observed to be considerably more intensive in the CFDS/C habitat compared to the CFDS/O habitat. This, paired with limited availability of photographic/videographic monitoring equipment, resulted in a decision to establish baseline data on scavenger activity in the CFDS/C habitat only. This was effected via the deployment of two Bushnell® TrophyCam® camera traps (models 119436 and 119676) in the CFDS/C habitat; one in each cage. The camera traps photographically documented scavenger activity for the entire duration of Cycles 3 and 4, generating 44,340 photographs. Not all photographs indicated scavenger activity; tree branch shadow movement during periods of high wind, insect movement during periods of significant insect activity, and the occasional presence of a Cape robin chat (*Cossypha caffra*) (Figure 6.3a) within the cages all resulted in triggers. Only Cape grey mongooses were documented to feed on the carcasses. Most triggers by Cape grey mongoose indicated only one individual in the cage at a time, but up to three individuals were noted in single frames (Figure 6.3b). Simultaneous feeding at both carcasses was also observed on multiple occasions in both seasonal cycles. The raw visitation data is available in Appendix A6.1.

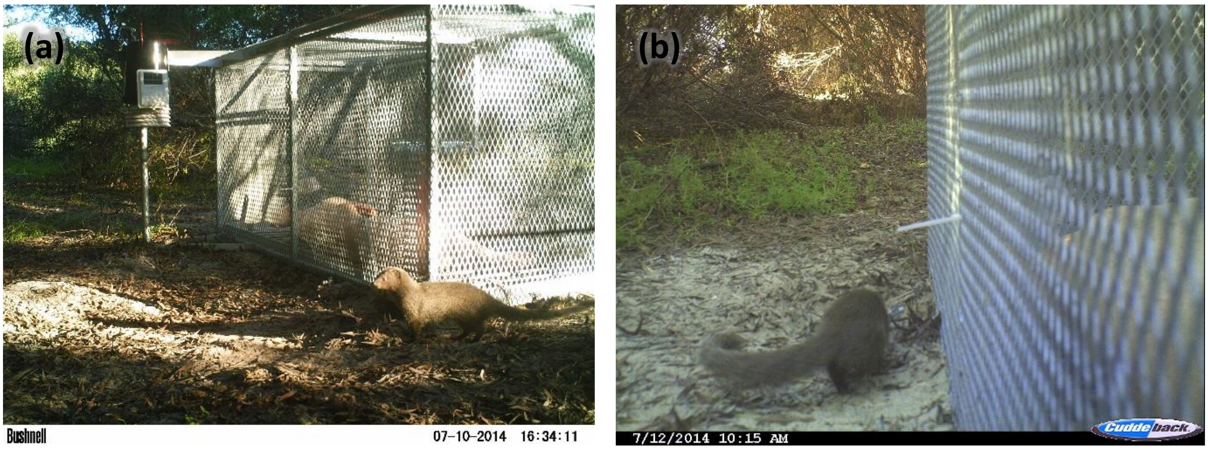


Figure 6.1: *Cape grey mongoose present at **(a)** CFDS/C-1 on Day 10 - Cycle 1 (2014/07/10) and at **(b)** CFDS/C-2 on Day 12 - Cycle 1 (2014/07/12).*

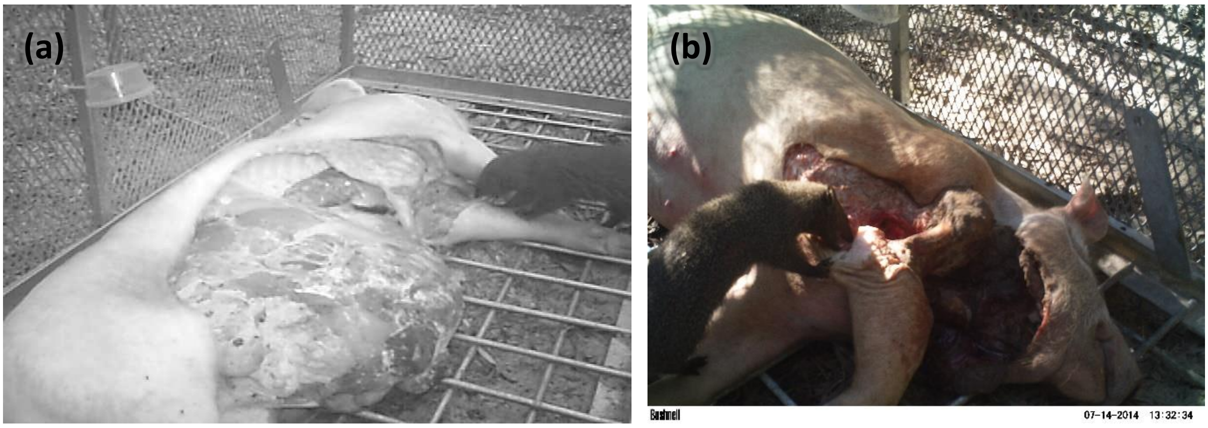


Figure 6.2: *Cape grey mongoose eating carcasses at **(a)** CFDS/C-1 on Day 13 - Cycle 1 (2014/07/13) and at **(b)** CFDS/C-2 on Day 14 - Cycle 1 (2014/07/14).*

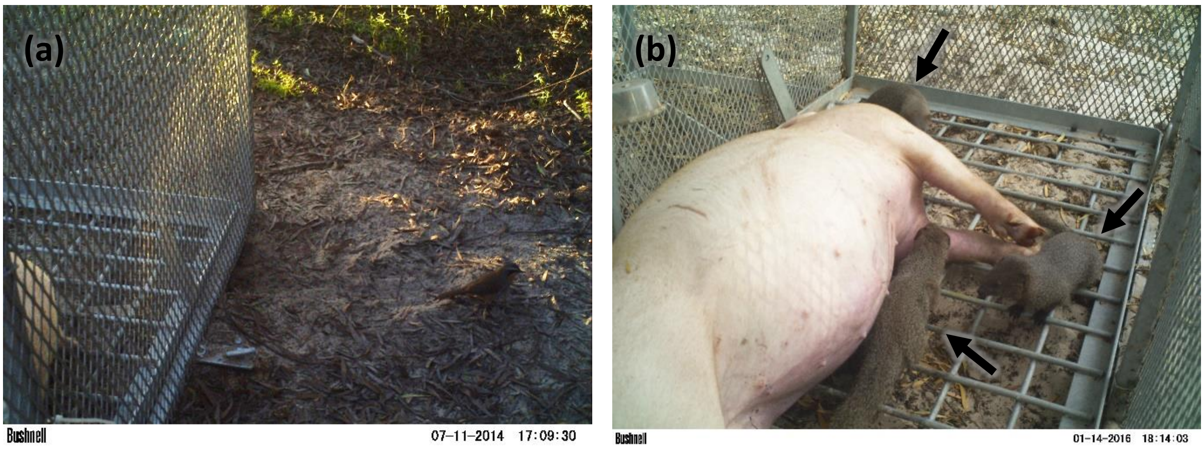


***Figure 6.3:** **(a)** Cape robin chat (*Cossypha caffra*) identified on camera trap footage; **(b)** Example of three Cape grey mongoose individuals simultaneously feeding.*

Patterns of carcass destruction

Patterns of carcass destruction were tracked via photographic and illustrative documentation during daily visits to the carcasses. A detailed account of such is given is Tables 6.1-6.4 with accompanying reference figures.

Table 6.1: Patterns of carcass destruction for Cycle 1 (W-2014).

Cycle 1 | W-2014					
Cycle Day/Period	**Carcass**	**Location of scavenging activity**	**% exposure of carcass**	**Notes**	**Reference figures**
0	CFDS/C-1	Groin.	~1%	First scavenging of this carcass; removal of skin and subcutaneous fat only.	6.4a
1	CFDS/C-2	Neck.	~1%	First scavenging of this carcass; removal of skin and subcutaneous fat only.	6.4b
2	CFDS/C-1	Groin & abdomen.	~15%	Enlargement of original scavenging lesion with exposure of visceral structures.	6.4c
	CFDS/C-2	Neck/right anterior shoulder.	~7%	Enlargement and deepening of original lesion.	6.4d
4	CFDS/C-1	Abdomen/posterior chest.	~25%	First bone exposure (inferior margin of right ribs).	6.4e
5		Neck/right shoulder.	~8%	First bone exposure (right humerus).	6.4f
5-23		Abdomen/chest/neck.	~45%	Extensive scavenging, spreading to neck region on down medial aspect of left forelimb.	6.5a
	CFDS/C-2	Abdomen/chest/neck.	~45%	Extensive scavenging, with exposure of entire abdominal cavity and most of right ribs, with linkage to original neck lesion. More scavenging at this carcass compared to CFDS/C-1.	6.5b
24-30	CFDS/C-1	Neck.	~49%	Enlargement of neck scavenging lesion.	6.5c
	CFDS/C-2	Neck/right shoulder/back.	~56%	Enlargement of neck/right shoulder lesion, extending superiorly into back region.	6.5d
51	CFDS/O-2	Groin.	~1%	First scavenging of this carcass; removal of skin and subcutaneous fat only.	6.5e, f
31-60	CFDS/C-1	Groin/rump/hindlimbs.	~65%	Consumption of entire rump/groin region, with only thin layer of soft tissue covering bone not already exposed.	6.6a
	CFDS/C-2		~70%		6.6b
62	CFDS/O-2	Groin/abdomen.	~6%	Enlargement of original scavenging lesion.	6.5g, h
61-90	CFDS/C-1	Hind-/forelimbs/pelvic area	~85%	Scavenging concentrated on hindlimb/pelvic area of carcasses, resulting in partial skeletonisation of hindlimbs.	6.6c
	CFDS/C-2		~90%		6.6d
72	CFDS/O-2	Abdomen.	~6%	Extraction of visceral contents from existing scavenging lesion. No further scavenging observed of this carcass.	6.6e
91-120	CFDS/C-1	Whole carcass.	~95%	Only occasional picking of carcasses. No major changes.	N/A
	CFDS/C-2		~90%		
121-127		Limbs.	~95%	Disarticulation of left forefoot, with movement south; disarticulation and skeletonisation of right forefoot with scattering in immediate vicinity.	6.7a, b
128-141		Limbs.	~97%	Skeletonisation and scattering of left forefoot. No further scavenging of this carcass.	6.7c, d
128-141	CFDS/C-1	Limbs.	~92%	No further scavenging of this carcass.	6.7e, f

Table 6.2: Patterns of carcass destruction for Cycle 2 (S-2015).

Cycle 2 | S-2015					
Cycle Day/Period	**Carcass**	**Location of scavenging activity**	**% exposure of carcass**	**Notes**	**Reference figures**
1	CFDS/C-1	Anus.	~1%	First scavenging of this carcass; removal of skin and subcutaneous fat only.	N/A
	CFDS/C-2	Abdomen.	~1%	First scavenging of this carcass; removal of skin and subcutaneous fat only.	6.8a
2	CFDS/C-1	Anus.	~2%	Enlargement and deepening of original lesion.	N/A
	CFDS/C-2	Abdomen.	~4%	Enlargement of original lesion.	6.8b
3-8	CFDS/C-1	Anus/left hindlimb.	~3%	Slight deepening of original lesion; new lesion on medial aspect of left hind limb.	6.8c, d
	CFDS/C-2	Abdomen.	~15%	Extensive enlargement and deepening of original lesion; viscera exposed.	6.8e
9		Abdomen/right hindlimb.	~16%	First bone exposure (right knee).	6.8f
10-27	CFDS/C-1	Left hind limb.	~3%	Complete disarticulation and slightly southerly movement of left hindfoot.	6.9a, b
10-30	CFDS/C-2	Right forelimb.	~18%	Complete disarticulation and partial skeletonisation of right forefoot.	6.9c, d
35-38	CFDS/C-1	Left & right hindlimbs.	~3%	Complete disarticulation and slight north-westerly movement of left hindfoot; partial disarticulation and slight northerly movement of right hindfoot.	6.9e, f
	CFDS/C-2	Right hindlimb.	~18%	Complete disarticulation and slight northerly movement of right hindfoot and ankle.	6.9g, h
39-76	CFDS/C-1	Whole carcass.	~7%	Minimal scavenging of carcass in general; partial disarticulation of right hindfoot & movement of disarticulated left hindfoot.	6.9i
	CFDS/C-2		~24%	Minimal scavenging of carcass in general; complete disarticulation and scatter of remaining feet and ankles.	6.9j

Table 6.3: Patterns of carcass destruction for Cycle 3 (W-2015).

Cycle 3 | W-2015					
Cycle Day/Period	**Carcass**	**Location of scavenging activity**	**% exposure of carcass**	**Notes**	**Reference figures**
1	CFDS/C-1	Anus.	~0.5%	First scavenging of this carcass; removal of tissue in anal region.	6.10a
2		Anus.	~1%	Deepening and slight enlargement of original lesion.	6.10c
	CFDS/C-2	Groin/abdomen.	~2%	First scavenging of this carcass; removal of skin and subcutaneous fat only.	6.10b
3		Groin/abdomen.	~5%	Enlargement and deepening of original lesion.	6.10d
4-10		Groin/abdomen/chest.	~40%	Extensive scavenging of groin, abdominal and chest region; viscera and inferior aspect of right ribs exposed (first bone exposure).	6.11a
	CFDS/C-1	Anus & abdomen.	~9%	Deepening and slight enlargement of anal lesion; new lesion on posterior abdomen with removal of skin and subcutaneous fat.	6.11b, c
11-13		Abdomen.	~30%	Extensive scavenging; viscera exposed.	6.11d
14		Abdomen/chest.	~35%	First bone exposure (inferior aspect of right ribs).	6.11e
11-14	CFDS/C-2	Chest.	~47%	Consumption of intercostal muscle tissue from between posterior right ribs.	6.11f
15-22	CFDS/C-1	Groin/abdomen/chest.	~40%	Expansion of lesion between hind limbs, covering entire groin region and most of anal region. Some scavenging of abdominal viscera & removal of intercostal muscle tissue from between right ribs.	6.12a
	CFDS/C-2	Groin.	~50%	Expansion of lesion into posterior neck region. Some scavenging of abdominal viscera & removal of intercostal muscle tissue from between right ribs.	6.12b
22	CFDS/O-1	Groin.	~1%	First scavenging of this carcass; removal of skin and subcutaneous fat.	6.12c
23-28		Groin.	~5%	Enlargement of original lesion.	6.12d
29		Groin/abdomen.	~8%	Enlargement of original lesion.	6.12e
30-37		Abdomen/chest.	~35%	Extensive scavenging with enlargement of lesion across entire abdominal/chest region and exposure of bone (right ribs).	6.12f
22-37	CFDS/C-1	Chest/neck.	~57%	Enlargement of lesions across chest and into neck regions, with further exposure of ribs and consumption of throat viscera.	6.13a
	CFDS/C-2	Abdomen.	~58%		6.13b
29		Neck.	~58%	Right gonial angle of mandible of exposed.	6.13c
38-50	CFDS/C-1	Neck.	~59%	Minimal scavenging; slight enlargement of neck lesion.	6.13d
	CFDS/C-2	Anus/groin/chest/neck.	~70%	Extensive scavenging; consumption of entire groin and anal region and exposure of right femur, right tibia, and portion of pelvis.	6.13e
	CFDS/O-1	Chest.	~45%	Expansion and deepening of lesion; viscera exposed and partially consumed.	6.13f
51-70	CFDS/C-1	Abdomen/chest.	~60%	Consumption of abdominal viscera and right posterior ribs.	6.14a
	CFDS/C-2	Whole carcass.	~85%	Extensive scavenging; pelvis and hindlimbs mostly skeletonised; partial skeletonisation of right proximal forelimb.	6.14b
	CFDS/O-1	Chest/neck.	~50%	Expansion of lesion into neck area with consumption of underlying viscera; no further notable scavenging at this carcass hereafter.	6.14c
71-73	CFDS/C-2	Left hindlimb.	~85%	Partial disarticulation of left hindfoot.	6.15a
74			~86%	Complete disarticulation of left hindfoot. Skeletonisation of lower left hindlimb with disarticulation of left fibula.	6.15b
79			~88%	Remainder of left hindlimb completely disarticulated and mostly skeletonised.	6.15c
71-79	CFDS/C-1	Abdomen.	~60%	Small amount of abdominal viscera consumed. Slow-down of scavenging from this point onwards; occasional picking only.	6.15d
127-133	CFDS/C-2	Right hindlimb.	~90%	Complete disarticulation and partial skeletonisation of distal half of right hindlimb.	6.16a, b
134-136			~92%	Complete disarticulation and skeletonisation of right femur.	6.16c
136-146			~97%	Disarticulation of cranium, mandible, numerous ribs, and left humerus.	6.16d
80-91	CFDS/C-1	Left hindlimb.	~63%	Partial skeletonisation of left hindlimb; complete disarticulation of left hindfoot on Day 91.	6.16e
136-146		Right hind- and forelimbs/chest.	~85%	Complete disarticulation of right hindlimb at knee; complete disarticulation of right forelimb at shoulder; displacement of several right ribs.	6.16f, g

Table 6.4: Patterns of carcass destruction for Cycle 4 (S-2016).

Cycle 4 | S-2016					
Cycle Day/Period	**Carcass**	**Location of scavenging activity**	**% exposure of carcass**	**Notes**	**Reference figures**
0	CFDS/C-2	Anus.	~0.5%	First scavenging of this carcass; consumption of tissue in anal region.	6.17b
1	CFDS/C-1	Face.	~0.5%	First scavenging of this carcass; removal of facial tissue.	6.17a
2		Groin.	~1.5%	New lesion opened in groin region.	6.17c
3		Groin/Face.	~5%	Enlargement of lesion; extrusion of abdominal viscera.	6.17d
1-3	CFDS/C-2	Anus.	~3%	Deepening of original lesion.	N/A
7	CFDS/C-1	Left forelimb.	~5.5%	New small lesion opened on medial aspect of left forelimb.	6.18a
	CFDS/C-2	Chest/neck.	~3.5%	Three new small lesions opened: one on chest, two on neck.	6.18b
8		Abdomen.	~4.5%	Expansion of abdominal lesion.	6.18c
9			~5.5%	New small lesion opened adjacent existing abdominal lesion.	6.18d
13		Abdomen/left forelimb.	~7%	Expansion of second abdominal lesion; new lesions on anterior and medial aspects of left wrist.	6.18e
19		Left forelimb.	~8%	Further scavenging of medial aspect of left wrist.	6.19a
23			~10%	Complete disarticulation of left wrist.	6.19b
24-28		Left hindlimb	~14%	Scavenging of left hindlimb until complete disarticulation and scatter by Day 28.	6.19c
8-24	CFDS/C-1	Left hindlimb/right forelimb	~8%	Scavenging of left knee region and right wrist, with first bone exposure (left hindlimb bones) on Day 24.	6.19d
25		Right forelimb	~9%	Complete disarticulation of right forefoot.	6.19e
26-29		Left hindlimb/right forelimb	~12%	Partial skeletonisation of left lower hindlimb and complete disarticulation of left forefoot.	6.19f
30		Left hindlimb/right hindlimb	~15%	Complete disarticulation of left hindlimb and right hindfoot.	6.20a
31	CFDS/C-2	Right hindlimb	~15%	Complete disarticulation of right hindfoot.	6.20b
32-76	CFDS/C-1	Whole carcass	~35%	Minimal scavenging; mainly disarticulation and scatter of smaller skeletal elements and skeletonisation of crania.	6.20c
	CFDS/C-2		~45%		6.20d

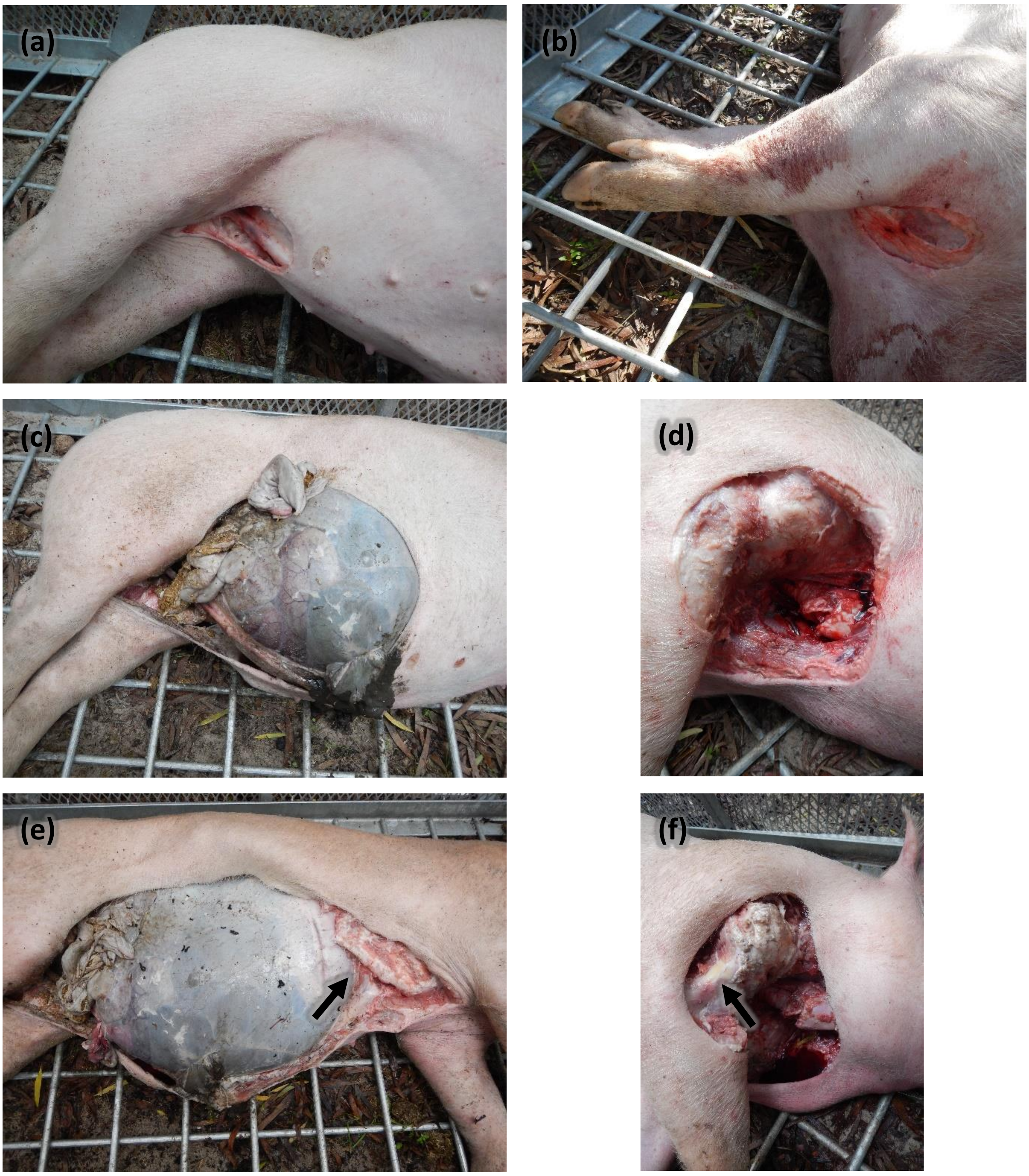


Figure 6.1: *Point of initial scavenging in the groin area of CFDS/C-1 on Day 0 – Cycle 1 (2014/07/01)* ***(a)*** *and in the neck region of CFDS/C-2 on Day 1 – Cycle 1 (2014/07/02)* ***(b)****; Enlargement and deepening of abdominal lesion on CFDS/C-1 by Day 2 – Cycle 1 (2014/07/03)* ***(c)*** *and of neck lesion on CFDS/C-2 by Day 2 – Cycle 1 (2014/07/03)* ***(d)****; First bone exposure on CFDS/C-1 (right ribs) by Day 5 – Cycle 1 (2014/07/06)* ***(e)*** *and on CFDS/C-2 (right humerus) by Day 4 – Cycle 1 (2014/07/05)* ***(f)****.*

***Figure 6.2**: Extent of scavenging lesion on CFDS/C-1 and CFDS/C-2 by Day 23 – Cycle 1 (2014/07/24) **(a,b, respectively)** and Day 30 – Cycle 1 (2014/07/31) **(c,d, respectively)**; **(e)** Point of initial scavenging in groin region of CFDS/O-2 on Day 51 – Cycle 1 (2014/08/21), with removal of skin and subcutaneous adipose tissue only **(f)**; **(g,h)** Extent of scavenging lesion on CFDS/O-2 by Day 62 – Cycle 1 (2014/09/01).*

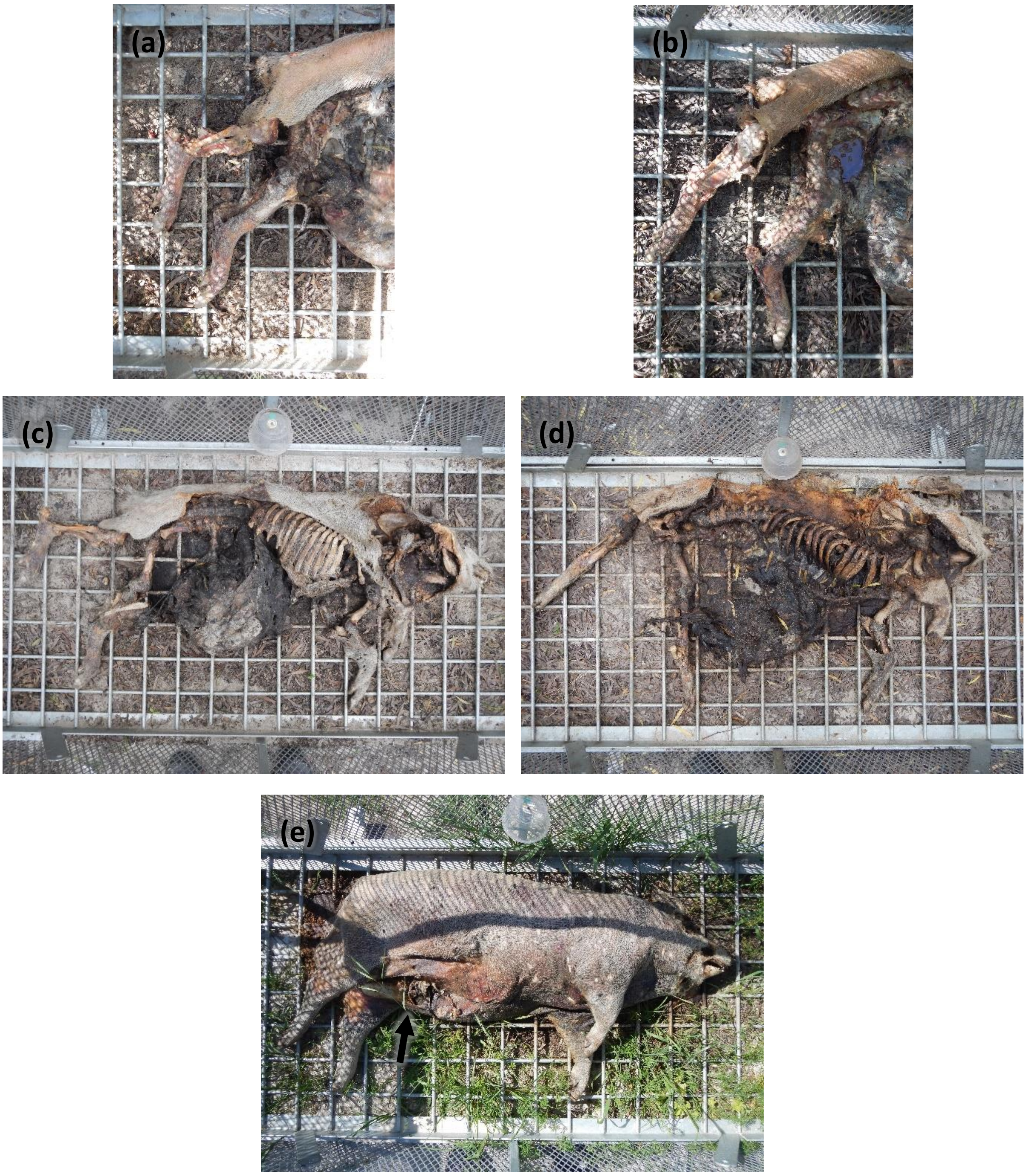


Figure 6.3: *Rump regions of CFDS/C-1* ***(a)*** *and CFDS/C-2* ***(b)*** *entirely consumed by Day 60 – Cycle 1 (2014/08/30) with only skin remaining over bones; Further scavenging over leading up to Day 90 – Cycle 1 (2014/09/29) saw partial skeletonisation of the hind quarters of CFDS/C-1* ***(c)*** *and CFDS/CJ-2* ***(d)****; Day 72 – Cycle 1 (2014/09/11) saw a small amount of scavenging at CFDS/O-2* ***(e)*** *which resulted in extrusion of desiccated abdominal viscera.*

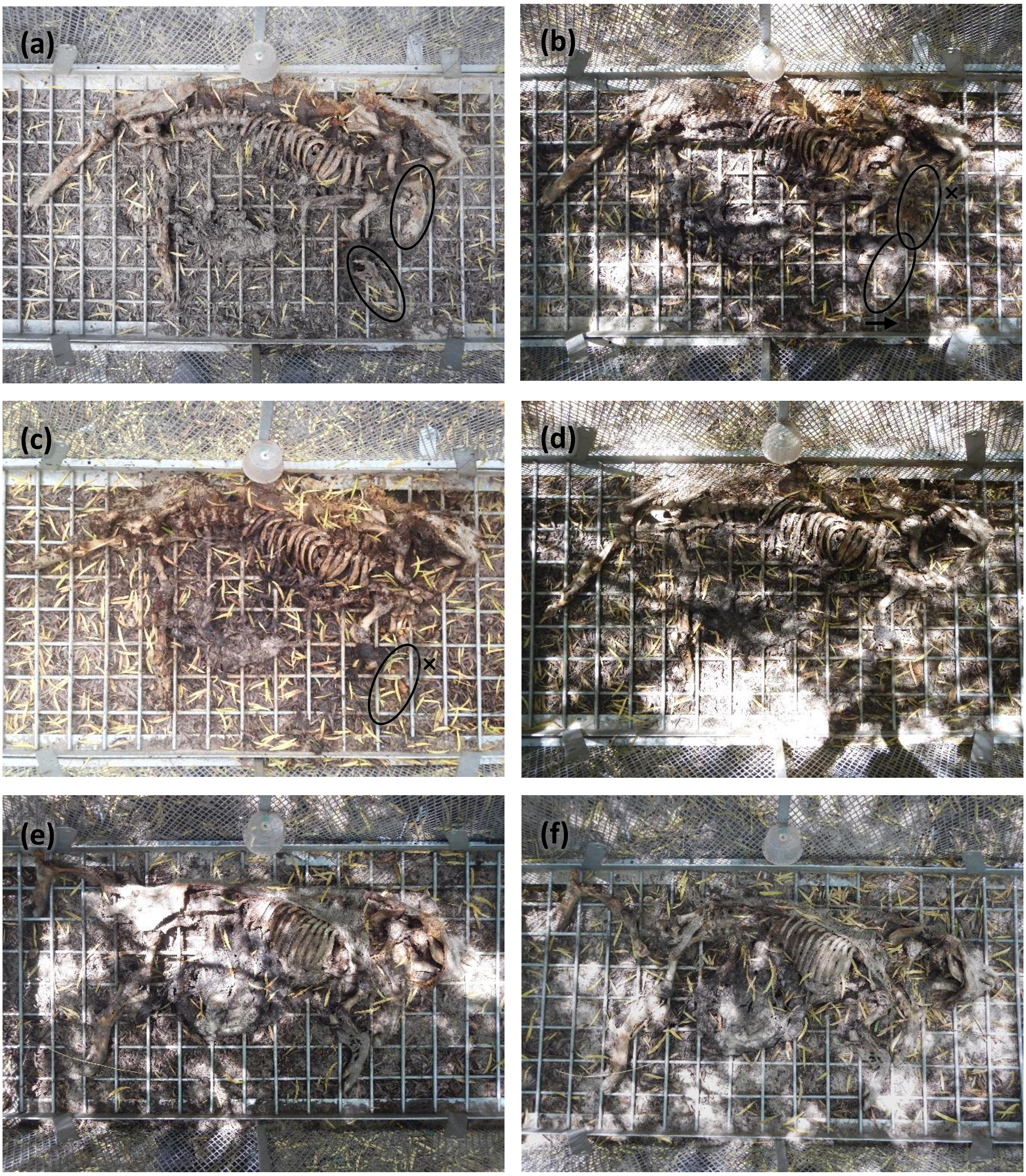


Figure 6.4: *CFDS/C-2 on Day 120 – Cycle 1 (2014/10/29), showing left and right forefeet in place* ***(a)****; on Day 127 – Cycle 1 (2014/11/05), with the left forefoot disarticulated and moved slightly south, and the right forefoot absent following disarticulation and scattering* ***(b)****; on Day 135 – Cycle 1 (2014/11/13) with left forefoot striped of desiccated soft tissue and scattered in immediate vicinity* ***(c)****; and on Day 141 – Cycle 1 (2014/11/19) with no further changes attributable to scavenging activity* ***(d)****; CFDS/C-1 on Day 127 – Cycle 1 (2014/11/05)* ***(e)*** *and Day 141 – Cycle 1 (2014/11/19)* ***(f)*** *with no changes attributable to scavenging activity.*

Figure 6.1: ***(a)*** *Point of initial scavenging in the posteroinferior abdominal region of CFDS/C-2 on Day 1 – Cycle 2 (2015/01/14), enlarged over the next 24 hours* ***(b)****;* ***(c)*** *Point of initial scavenging in the anal region of CFDS/C-1, viewed here on Day 3 – Cycle 2 (2014/01/16) indicating the depth and size of the scavenging lesion;* ***(d)*** *Secondary scavenging entry point on medial-proximal aspect of left hindfoot of CFDS/C-1 on Day 8 – Cycle 2 (2015/01/21);* ***(e)*** *Considerably enlargement of abdominal scavenging lesion of CFDS/C-2 by Day 8 – Cycle 2 (2015/01/21), with first bone exposure (right knee) on Day 9 – Cycle 2 (2014/01/22)* ***(f)****.*

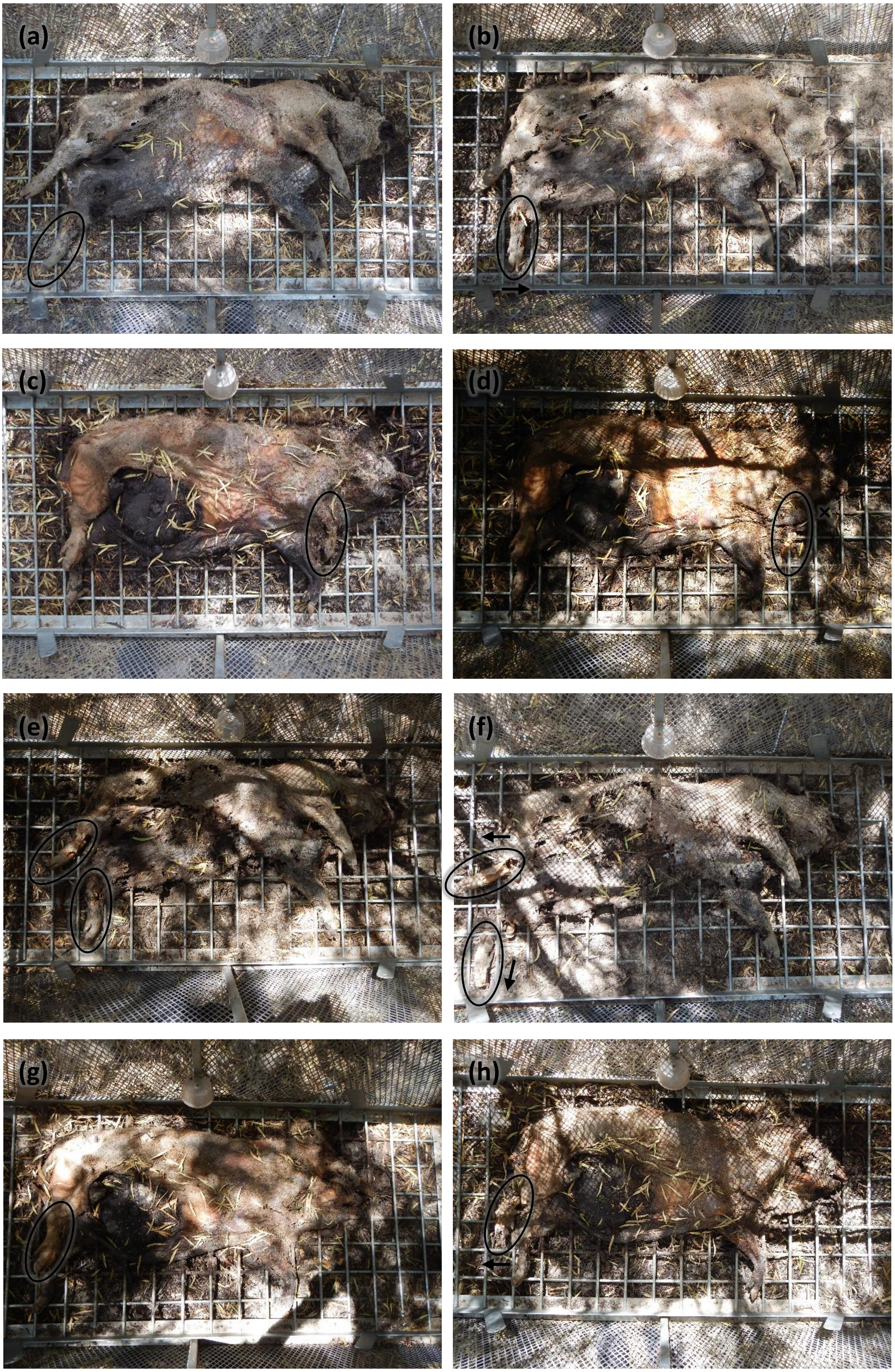

(a)
(b)
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Figure 6.9: *CFDS/C-1 on Day 26 – Cycle 2 (2015/02/08)* ***(a)*** *compared to Day 27 – Cycle 2 (20145/02/09)* ***(b)****, the latter showing partial disarticulation of the left hindfoot and movement slightly south; CFDS/C-2 on Day 28 – Cycle 2 (2015/02/10)* ***(c)*** *compared to Day 30 – Cycle 2 (2015/02/20)* ***(d)****, the latter showing complete disarticulation and scavenging of right forefoot; CFDS/C-1 on Day 35 – Cycle 2 (2015/02/25)* ***(e)*** *compared to Day 38 – Cycle 2 (2015/02/28)* ***(f)****, the latter showing complete disarticulation of the left hindfoot with movement slightly north, and partial disarticulation of the right hindfoot with movement slightly north; CFDS/C-2 on Day 35 – Cycle 2 (2015/02/25)* ***(g)*** *compared to Day 38 – Cycle 2 (2015/02/28)* ***(h)****, the latter showing complete disarticulation of the right hindfoot with movement slightly north; CFDS/C-1* ***(i)*** *and CFDS/C-2* ***(j)*** *at the end of the cycle on Day 76 (2015/03/30), the former with partial disarticulation of the right hindfoot and movement of the left hindfoot, the latter with disarticulation and scatter of the remaining feet and ankles.*

Figure 6.10: *Point of initial scavenging in the anal region of CFDS/C-1 on Day 1 – Cycle 3 (2015/07/07)* ***(a)****, and in the abdominal region of CFDS/C-2 on Day 2 – Cycle 3 (2015/07/08)* ***(b)****; 24-hour enlargement of the anal scavenging lesion of CFDS/C-1* ***(c)*** *and abdominal scavenging lesion of CFDS/C-2* ***(d)****.*

*Figure 6.11: The abdominal scavenging lesion of CFDS/C-2 expanded to cover the entire abdominal and thoracic regions **(a)** by Day 10 – Cycle 3 (2015/07/16); The anal scavenging lesion of CFDS/C-1 deepened and expanded only slightly inferiorly **(b)**, and a new scavenging lesion opened up in the posterior abdominal region **(c)** by Day 10 – Cycle 3 (2015/07/16); The peritoneal cavity of CFDS/C-1 opened and the abdominal viscera exposed on Day 13 – Cycle 3 (2015/07/19) **(d)**, and the inferior aspect of the right ribs exposed on Day 14 – Cycle 3 (2015/07/20) **(e)**; The intercostal muscle tissue between the inferior right ribs of CFDS/C-2 consumed by Day 14 – Cycle 3 (2015/07/20) **(f)**.*

Figure 6.12: *The similarly-sized lesions of CFDS/C-1* ***(a)*** *and CFDS/C-2* ***(b)*** *by Day 22 – Cycle 3 (2015/07/28);* ***(c)*** *Point of initial scavenging in the groin region of CFDS/O-1 on Day 22 – Cycle 3 (2015/07/28), slightly expanded by Day 28 – Cycle 3 (2015/08/03)* ***(d)****, and an increase in scavenging activity from Day 29 – Cycle 3 (2015/08/04)* ***(e)*** *with considerable enlargement of the abdominal scavenging lesion by Day 37 – Cycle 3 (2015/08/12)* ***(f)****.*

*Figure 6.13: CFDS/C-1 **(a)** and CFDS/C-2 **(b)** on Day 37 – Cycle 3 (2015/08/12) showing scavenging of the neck regions; **(c)** bone exposure of the right gonial angle of CFDS/C-2 on Day 29 – Cycle 3 (2015/08/04); CFDS/C-1 **(d)** and CFDS/C-2 **(e)** on Day 50 – Cycle 3 (2015/08/25), the former showing little change from Day 37, the latter showing consumption of the entire anal and groin region exposing the right femur, tibia, and portions of the pelvis; **(f)** CFDS/O-1 on Day 50 – Cycle 3 (2015/08/25) showing opening up of the thoracic cavity by the scavenger with partial consumption of the thoracic viscera.*

Figure 6.14: *CFDS/C-1* ***(a)****, CFDS/C-2* ***(b)****, and CFDS/O-1* ***(c)*** *on Day 70 – Cycle 3 (2015/09/14); CFDS/C-2 had been scavenged much more heavily than CFDS/C-1; The extensive bone exposure on CFDS/C-2 is evident; The scavenging lesion on CFDS/O-1 had been extended into the neck region in a similar manner to that of the CFDS/C carcasses.*

Figure 6.15: Partial disarticulation of the left hindfoot of CFDS/C-2 on Day 73 – Cycle 3 (2015/09/17) ***(a)***, fully disarticulated on Day 74 – Cycle 3 (2015/09/18) ***(b)***, and stripped and scattered by Day 79 – Cycle 3 (2015/09/23) ***(c)***; ***(d)*** CFDS/C-1 showing only a small amount of scavenging activity of the desiccated abdominal viscera.

Figure 6.16: *CFDS/C-2 on Day 127 – Cycle 3 (2015/11/10)* ***(a)****, Day 133 – Cycle 3 (2015/11/16)* ***(b)****, Day 136 – Cycle 3 (2015/11/19)* ***(c)****, and Day 146 – Cycle 3 (2015/11/29)* ***(d)****, showing disarticulation of the distal half of the right hind limb with partial consumption of the adherent desiccated soft tissue by Day 133, disarticulation of the right femur by Day 136, and disarticulation and scatter of the cranium, mandible, numerous ribs, and the left humerus by Day 146; CFDS/C-2 on Day 91 – Cycle 3 (2015/10/05)* ***(e)****, Day 136 – Cycle 3 (2015/11/19)* ***(f)****, and Day 146 – Cycle 3 (2015/11/29)* ***(g)****, showing disarticulation of the left foot on Day 91, the right hind limb at the knee, and the right forelimb at the shoulder, and displacement of several ribs, between Day 136 and Day 146.*

Figure 6.17: (a) *Point of initial scavenging at CFDS/C-1 on Day 1 – Cycle 4 (2015/01/14);* ***(b)*** *Scavenger observed feeding in the anal region of CFDS/C-2 on Day 0 – Cycle 4 (2015/01/13);* ***(c)*** *Secondary lesion opened up on CFDS/C-1 on Day 2 – Cycle 4 (2015/01/15), enlarged together with the facial lesion by Day 3 – Cycle 4 (2015/01/16)* ***(d)****.*

Figure 6.18: ***(a)*** *Small scavenging lesion on medial aspect of left forelimb of CFDS/C-1 on Day 7 – Cycle 4 (2015/01/20);* ***(b)*** *Two small scavenging lesions in neck region and one small scavenging lesion in thorax region of CFDS/C-2 on Day 7 – Cycle 4 (2015/01/20);* ***(c)*** *Expansion of abdominal scavenging lesion of CFDS/C-2 on Day 8 – Cycle 4 (2015/01/21), and addition of new abdominal scavenging lesion adjacent on Day 9 – Cycle 4 (2015/01/22)* ***(d)****;* ***(e)*** *Expansion of second abdominal scavenging lesion and addition of new scavenging lesion on anteromedial aspect of left wrist of CFDS/C-2 on Day 13 – Cycle 4 (2015/01/28).*

Figure 6.19: ***(a)*** *Scavenging of desiccated tissue in region of left wrist of CFDS/C-2 on Day 19 – Cycle 4 (2015/02/01);* ***(b)*** *Disarticulation of left forefoot of CFDS/C-2 on Day 23 – Cycle 4 (2015/02/05);* ***(c)*** *Disarticulation of left hindfoot of CFDS/C-2 on Day 28 – Cycle 4 (2015/02/10);* ***(d)*** *Scavenging activity in region of left knee and right wrist of CFDS/C-1, with exposure of bone of left hindlimb on Day 24 (2015/02/06);* ***(e)*** *Disarticulation of right forefoot of CFDS/C-1 on Day 25 – Cycle 4 (2015/02/07);* ***(f)*** *Exposure of most of left lower hindlimb and disarticulation of left forefoot of CFDS/C-1 by Day 29 (2015/02/11).*

Figure 6.20: ***(a)*** *Disarticulation of left hindlimb and right forefoot of CFDS/C-1 on Day 30 – Cycle 4 (2015/02/12);* ***(b)*** *Disarticulation of right hindfoot of CFDS/C-2 on Day 31 – Cycle 4 (2015/02/13); CFDS/C-1* ***(c)*** *and CFDS/C-2* ***(d)*** *on the second last day of the cycle (Day 75 – Cycle 4 [2015/03/28]).*

Patterns of scavenger attendance

Quantification of various aspects of scavenger attendance at the carcasses was made possible through the deployment of the camera traps at the CFDS/C carcasses. As a reminder, visits were delineated by a period of 10 minutes or more wherein no scavenger was observed. Daylight hours are defined as the period between pre-dawn (first light) and twilight.

Cycle 3 (W-2015)

Scavenger attendance was most intense during the Fresh and Early stages of decomposition (Figure 6.21). This was true for both CFDS/C carcasses, but with variant patterns. Specifically, there was a definitive decline in attendance one week preceding the shift from Early to Advanced Decomposition at CFDS/C-1. CFDS/C-2, on the other hand, experienced a noticeably bimodal pattern of attendance, with two periods of intense scavenging activity, the second beginning around the time attendance at CFDS/C-1 declined (Figure 6.21). There appears to be a marginally negative relationship between rainfall and scavenger attendance. Specifically, most of the larger rainfall events coincide with a decline in scavenger attendance. These are followed by a spike in attendance frequency and duration in the subsequent days. The latter pattern is emphasised in the advanced stages of decay where rainfall events appear to trigger visitation by the scavenger. In these circumstances, the greater the magnitude of the rainfall event, the longer the mean visit duration of the subsequent visits appears to be, with at least eight occurrences between the two carcasses exemplifying this (Figure 6.21).

Carcass visitation was strictly diurnal (Figure 6.22). Less than 1% (3/846) of total visits overlapped with first light or twilight, all at CFDS/C-2, with none falling completely outside daylight hours (i.e. first visit ended before first light/last visit started after twilight). The maximum amount of time a boundary of any visit fell outside daylight hours was a little over 1 hour – a brief (1 second) appearance of the scavenger after twilight on Day 27 (2015/07/28). The other two instances were also boundary overlaps with twilight, of a little over 5 minutes on Day 42 (2015/08/17), and 7 and a half minutes on Day 44 (2015/08/19). No visits began before first light (see raw data in Appendix A.8).

During periods of frequent scavenger attendance, the times of first arrival at- and last departure from the carcasses coincided quite closely with first light and twilight, respectively, although there is more variation around first light. Times of arrival and departure became even more varied later in the seasonal cycles when the scavengers were visiting less frequently and spending less time at the carcasses. This is especially true in the latter stages of decomposition during which there was very little scavenging (Figure 6.22).

The scavenger(s) were observed to spend up to almost half of daylight hours feeding at the carcasses (Figure 6.22). The maximum amount of time spent at CFDS/C-1 on any day was recorded on Day 7 (2015/07/13), comprising 45% of daylight hours. A similar maximum value of 43% of daylight hours was recorded for CFDS/C-2 on Day 43 (2015/08/18). On average, the scavenger(s) spent slightly more of the day at CFDS/C-2 compared to CFDS/C-1 (8% vs. 6% of daylight hours, respectively), with an overall average of almost 7% of daylight hours (Table 6.5). This is reflected in the fact that the scavenger(s) spent almost a full extra day (23:02:23) in total time at CFDS/C-2 over the whole cycle.

Scavenger attendance was greatest during the Early Decomposition stage for both carcasses, comprising almost three quarters of all time spent at the carcasses over the whole cycle (73% and 75% of total time spent at carcasses for CFDS/C-1 and CFDS/C-2, respectively) (Table 6.5; Figure 6.23c). Despite the apparent differences in the amount of scavenging observed at the two carcasses, the spread of visits at each was remarkably similar. The average number of daily visits over the duration of the cycle was 4.65 for CFDS/C-1, and 4.82 for CFDS/C-2.

Table 6.5: Descriptive statistics for scavenger attendance during Cycle 3 (W-2015).

W-2015		Overall	Fresh	EarlyD	AdvD	Skeleton
AvgVisit#	CFDS/C-1	4.65	7.00	9.36	3.15	0.26
AvgVisitTime%DL		6.18	28.58	14.50	1.48	0.00
TotalVisitTime		99:58:53	9:20:39	72:54:36	17:43:38	0:00:00
TotalVisitTime%		100	9.35	72.92	17.73	0.00
AvgVisit#	CFDS/C-2	4.82	1.00	8.77	2.89	0.00
AvgVisitTime%DL		7.50	0.21	17.25	3.74	0.12
TotalVisitTime		123:01:16	0:01:21	91:40:36	30:50:59	0:28:20
TotalVisitTime%		100.00	0.02	74.52	25.08	0.38
AvgVisit#	Overall	4.74	4.00	9.06	3.02	0.13
AvgVisitTime%DL		6.84	14.39	15.87	2.61	0.06
TotalVisitTime		111:30:05	4:41:00	82:17:36	24:17:19	0:14:10
TotalVisitTime%		100.00	4.68	73.72	21.40	0.19

AvgVisit# = Average number of visits; **AvgVisitTime%DL** = Average visit time as percentage of daylight hours; **TotalVisitTime** = Total amount of time spent at carcass over whole cycle;**"TotalVisitTime%** = Total amount of time spent at carcass in each stage as a percentage of the total amount of time spent at carcass over the whole cycle; **Fresh** = Fresh; **EarlyD** = Early Decomposition; **AdvD** = Advanced Decomposition; **Skeleton** = skeletonisation.

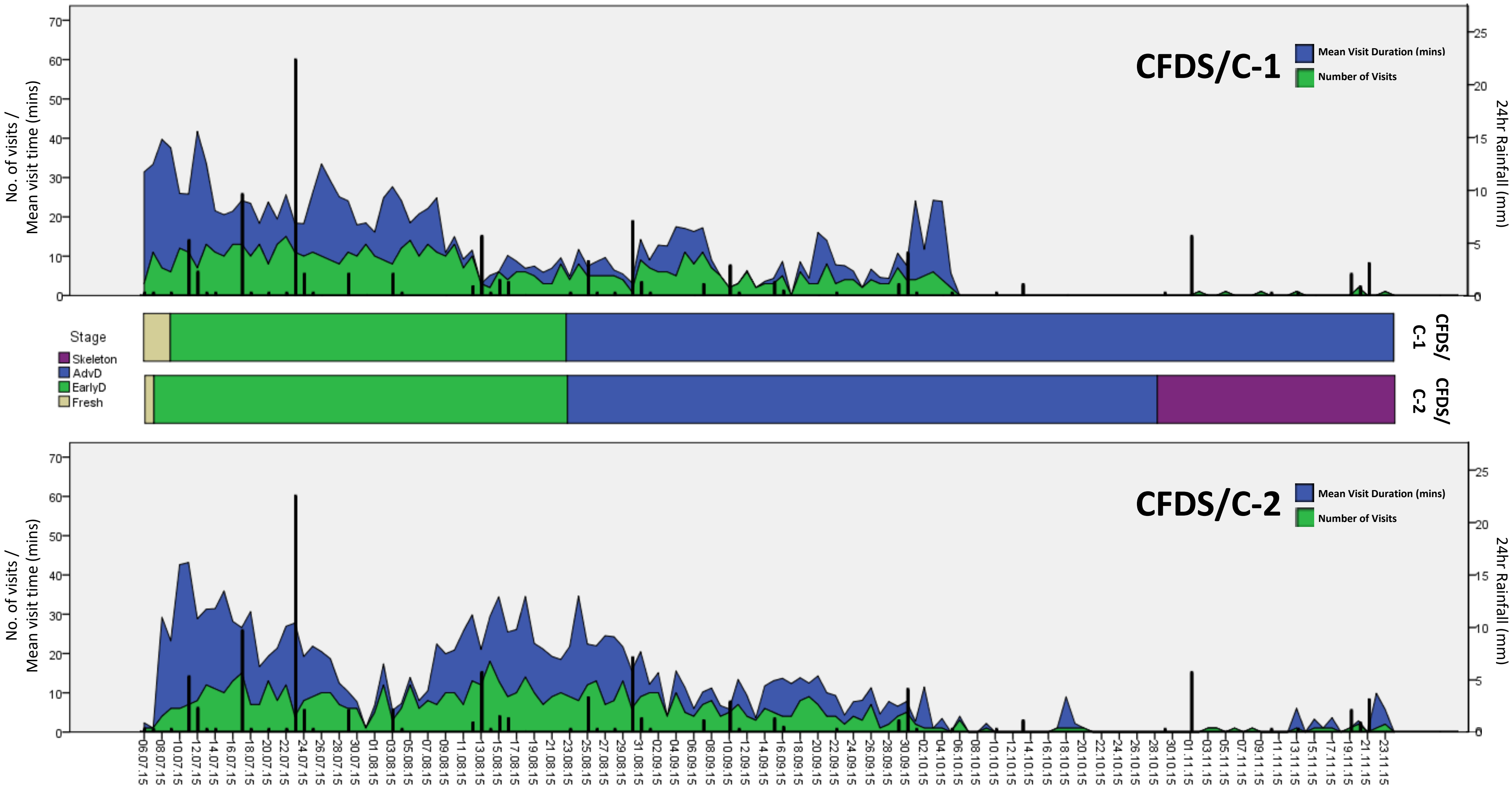

Figure 6.21: *Scavenger attendance at CFDS/C-1 and CFDS/C-2 during Cycle 3 (W-2015), represented by the number of daily visits (green) and the mean visit duration (mins) (blue). These values are benchmarked against decomposition stage (staked bars in the middle of the figure) and daily rainfall amounts (mm), represented by the black vertical bars. The most visits, and visits of the longest mean duration, were recorded during Fresh and Early Decomposition stages. CFDS/C-1 scavenger attendance – both in number of visits and mean visit duration – dropped off sharply one week before the transition from Early to Advance Decomposition. This, in contrast with CFDS/C-2, where scavenger attendance presented with a bimodal pattern of visitation frequency and duration. A slight negative relationship appears to exist between rainfall and scavenging attendance, wherein rainfall events depress scavenger attendance, but trigger a spike in attendance following the rainfall.*

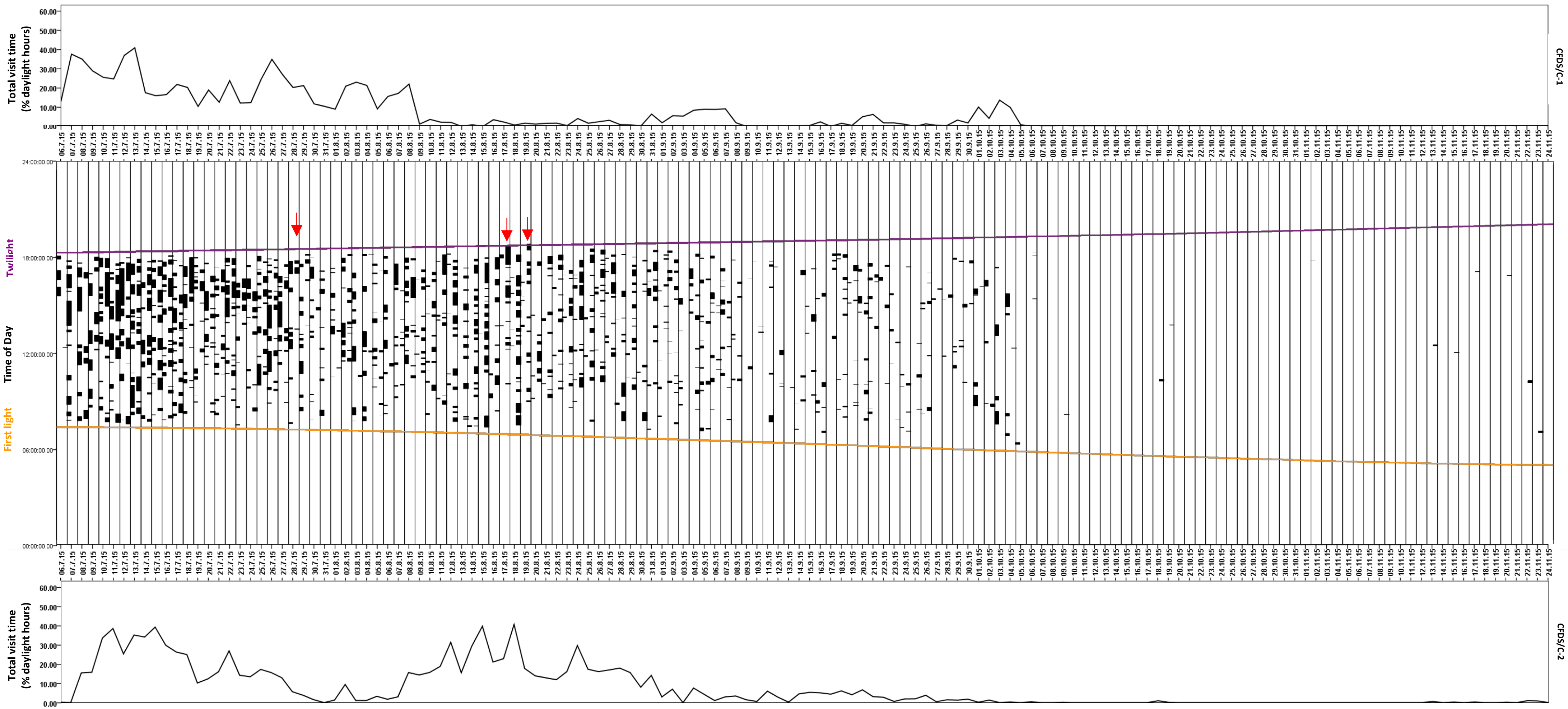

Figure 6.22: *Scavenger attendance at CFDS/C-1 and CFDS/C-2 during Cycle 3 (W-2015). Each vertical black bar represents a visit, the length of which corresponds to the length of the visit. Each column represents a single day, with the visits recorded at CFDS/C-1 on the left of the column, and those from CFDS/C-2 on the right. Most visits take place towards the beginning of the cycle while the carcass is still (relatively) Fresh. Most of the longest visits occur after 12h00. Overlaid are the times of first light (orange line) and twilight (purple line). Carcass visitation is strictly diurnal. Only three of the total 846 visits recorded for the season overlapped with either first light or sunset (all overlapped the latter). These were: visit 7 on 2015/07/28 (duration = 1s) – ended 01:06:33 after twilight, visit 10 on 2015/08/17 (duration = 01:14:14) – ended 00:05:05 after twilight, and visit 10 on 2015/08/19 (duration = 00:24:19) – ended 00:07:30 after twilight (all indicated with red arrows above the twilight line). Above and below the main graph are graphs of total scavenger visitation time as a percentage of daylight hours for CFDS/C-1 and CFDS/C-2, respectively. The scavenger(s) spent as much as 44.59% of daylight hours at the carcasses, the patterns reflecting those of Figure 6.21.*

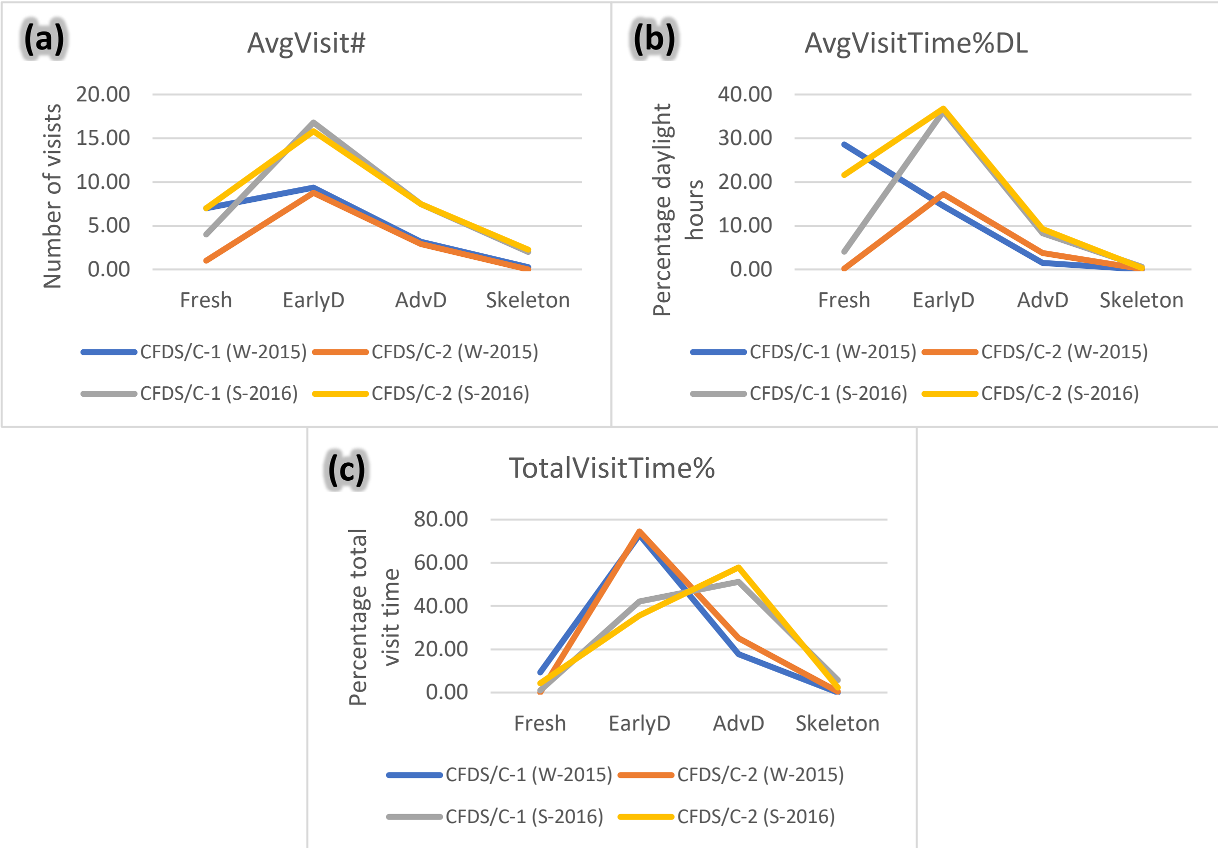

Figure 6.23: ***(a)*** *Average number of visits by scavenger(s) to CFDS/C carcasses in Cycle 3 (W-2015) and Cycle 4 (S-2016);* ***(b)*** *Average daily amount of time the scavenger(s) spent at the CFDS/C carcasses as a percentage of daylight hours (time between first light and twilight) during Cycle 3 (W-2015) and Cycle 4 (S-2016);* ***(c)*** *Percentages (by decomposition stage) of the total amount of time spent by the scavenger(s) at the CFDS/C carcasses during Cycle 3 (W-2015) and Cycle 4 (S-2016).* [**Fresh** = Fresh; **EarlyD** = Early Decomposition; **AdvD** = Advanced Decomposition; **Skeleton** = Skeletonisation].

Cycle 4 (S-2016)

Scavenger attendance was most intense during the Fresh, Early Decomposition, and early Advanced Decomposition stages (Figure 6.24). Attendance presented with a bimodal pattern at both carcasses; the first attendance spikes were similar in magnitude for both carcasses, but the second attendance spike was greater at CFDS/C-2 than at CFDS/C-1 (as measured by average visit duration) (Figure 6.24). Scavenging tapered off rapidly at both carcasses around midway through the Advanced Decomposition stage, albeit slightly earlier at CFDS/C-1 compared to CFDS/C-2. The scavenger(s) continued to visit the carcass at a low frequency and for short periods of time all the way to the end of the cycle (Figure 6.24). A slight positive relationship appears to exist between rainfall and scavenger attendance. Specifically, rainfall events appear to trigger an increase in the average duration of visits in most circumstances (Figure 6.24).

Carcass visitation was strictly diurnal, with no visits overlapping with first light or twilight (Figure 6.25). Longer visits are distinctly clustered in the morning and afternoon during the first spike in scavenger attendance, becoming more dispersed during and after the second spike. During periods of frequent scavenger attendance, particularly in the first spike, the times of first arrival at- and last departure from the carcasses coincided quite closely with first light and twilight, respectively. Leading into the second spike, first visits tended to start later in the morning, with last visits still ending close to twilight (Figure 6.25).

The scavenger(s) were observed to spend as much as nearly two-thirds of daylight hours feeding at the carcasses (Figure 6.25). The maximum amount of time spent at CFDS/C-1 on any day was recorded on Day 2 (2016/01/15), comprising 61% of daylight hours. A slightly lower maximum value of 56% of daylight hours was recorded for CFDS/C-2 on the same day. On average, the scavenger(s) spent slightly more of the day at CFDS/C-2 compared to CFDS/C-1 (7% vs. 6% of daylight hours, respectively), with an overall average of a little over 6% of daylight hours (Table 6.6). The scavenger(s) spent a little over 13 hours more (13:04:55) in total time at CFDS/C-2 over the whole cycle. When broken down by decomposition stage, scavenger attendance was greatest during the Advanced Decomposition stage for both carcasses, comprising a little more than half of all time spent at the carcasses over the whole cycle (51% and 58% of total time spent at carcasses for CFDS/C-1 and CFDS/C-2, respectively) (Table 6.6; Figure 6.23c). As with Cycle 3 (W-2015), average visit times, as a percentage of daylight hours, were longest during Early Decomposition (Figure 6.23b). The spread of visits at each carcass differed slightly. The average number of daily visits over the duration of the cycle was 4.91 for CFDS/C-1, and 5.44 for CFDS/C-2. Most visits were recorded during Early Decomposition (average of 16.80 and 15.80 visits at CFDS/C-1 and CFDS/C-2, respectively) (Table 6.6; Figure 6.23a).

Table 6.6: Descriptive statistics for scavenger attendance during Cycle 4 (S-2016).

W-2015		**Overall**	**Fresh**	**EarlyD**	**AdvD**	**Skeleton**
AvgVisit#	CFDS/C-1	4.91	4.00	16.80	7.48	2.00
AvgVisitTime%DL		5.66	4.08	36.15	8.31	0.61
TotalVisitTime		64:48:19	0:37:05	27:17:15	33:10:34	3:43:25
TotalVisitTime%		100.00	0.95	42.11	51.19	5.75
AvgVisit#	CFDS/C-2	5.44	7.00	15.80	7.48	2.26
AvgVisitTime%DL		6.81	21.57	36.78	9.25	0.35
TotalVisitTime		77:53:14	3:16:04	27:46:26	45:03:34	1:47:10
TotalVisitTime%		100.00	4.20	35.66	57.85	2.29
AvgVisit#	Overall	5.18	5.50	16.30	7.48	2.13
AvgVisitTime%DL		6.23	12.82	36.47	8.78	0.48
TotalVisitTime		2.97	0.08	1.15	1.63	0.11
TotalVisitTime%		100.00	2.57	38.88	54.52	4.02

AvgVisit# = Average number of visits; **AvgVisitTime%DL** = Average visit time as percentage of daylight hours; **TotalVisitTime** = Total amount of time spent at carcass over whole cycle;**"TotalVisitTime%** = Total amount of time spent at carcass in each stage as a percentage of the total amount of time spent at carcass over the whole cycle; **Fresh** = Fresh; **EarlyD** = Early Decomposition; **AdvD** = Advanced Decomposition; **Skeleton** = skeletonisation.

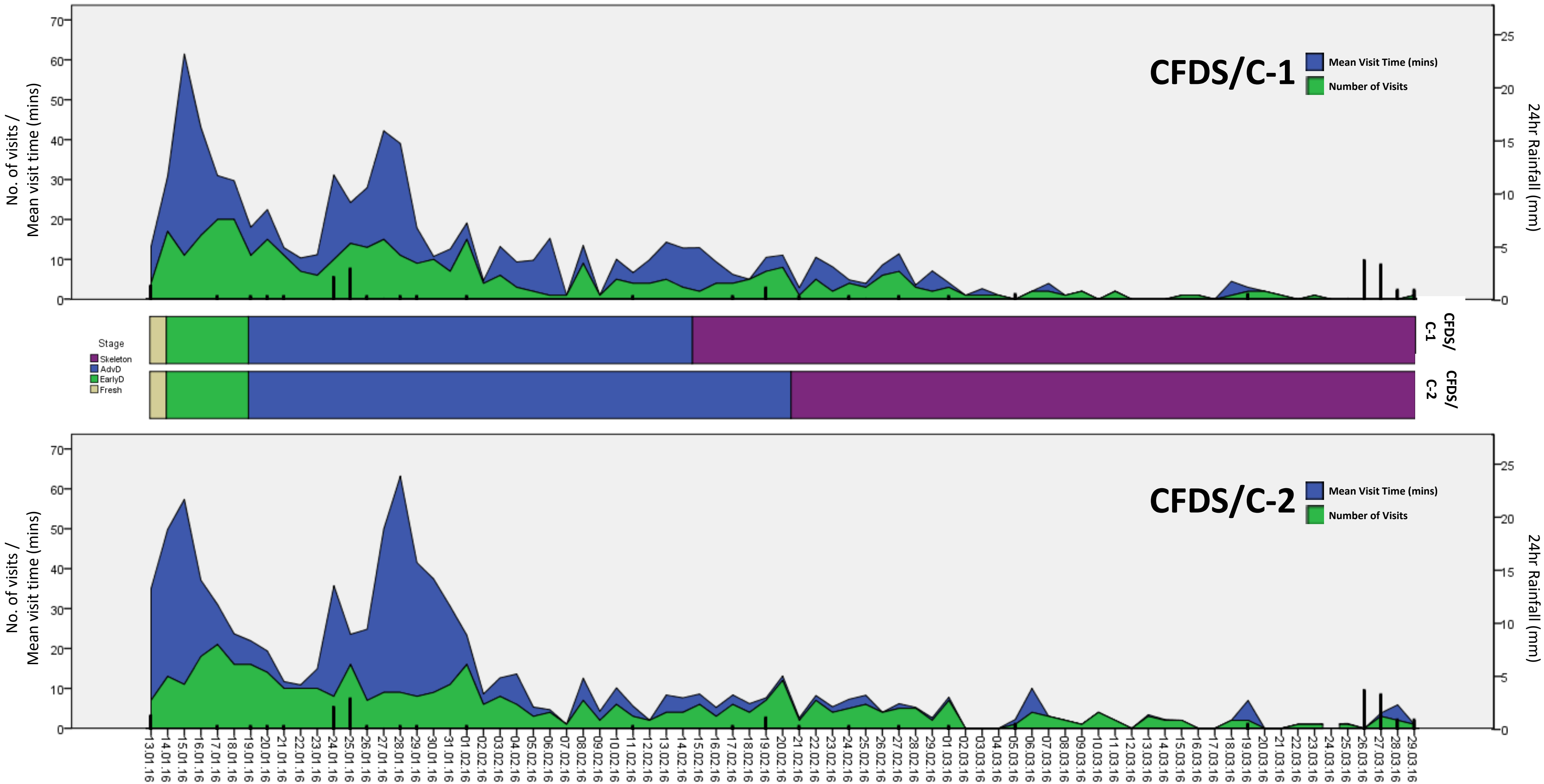

__Figure 6.24:__ Scavenger attendance at CFDS/C-1 and CFDS/C-2 during Cycle 4 (S-2016), represented by the number of daily visits (green) and the mean visit duration (mins) (blue). These values are benchmarked against decomposition stage (staked bars in the middle of the figure) and daily rainfall amounts (mm), represented by the black vertical bars. The most visits, and visits of the longest mean duration, were recorded during Fresh and Early Decomposition stages, with secondary spikes in attendance in the earlier parts of Advanced Decomposition. Both carcasses present with bimodal scavenging attendance, the second spike in attendance of CFDS/C -2 being considerably larger than that of CFDS/C -1. A marginally positive relationship appears to exist between rainfall and scavenger attendance, with spikes in duration of visit, and, to a lesser degree, number of visits, during and following rainfall events.

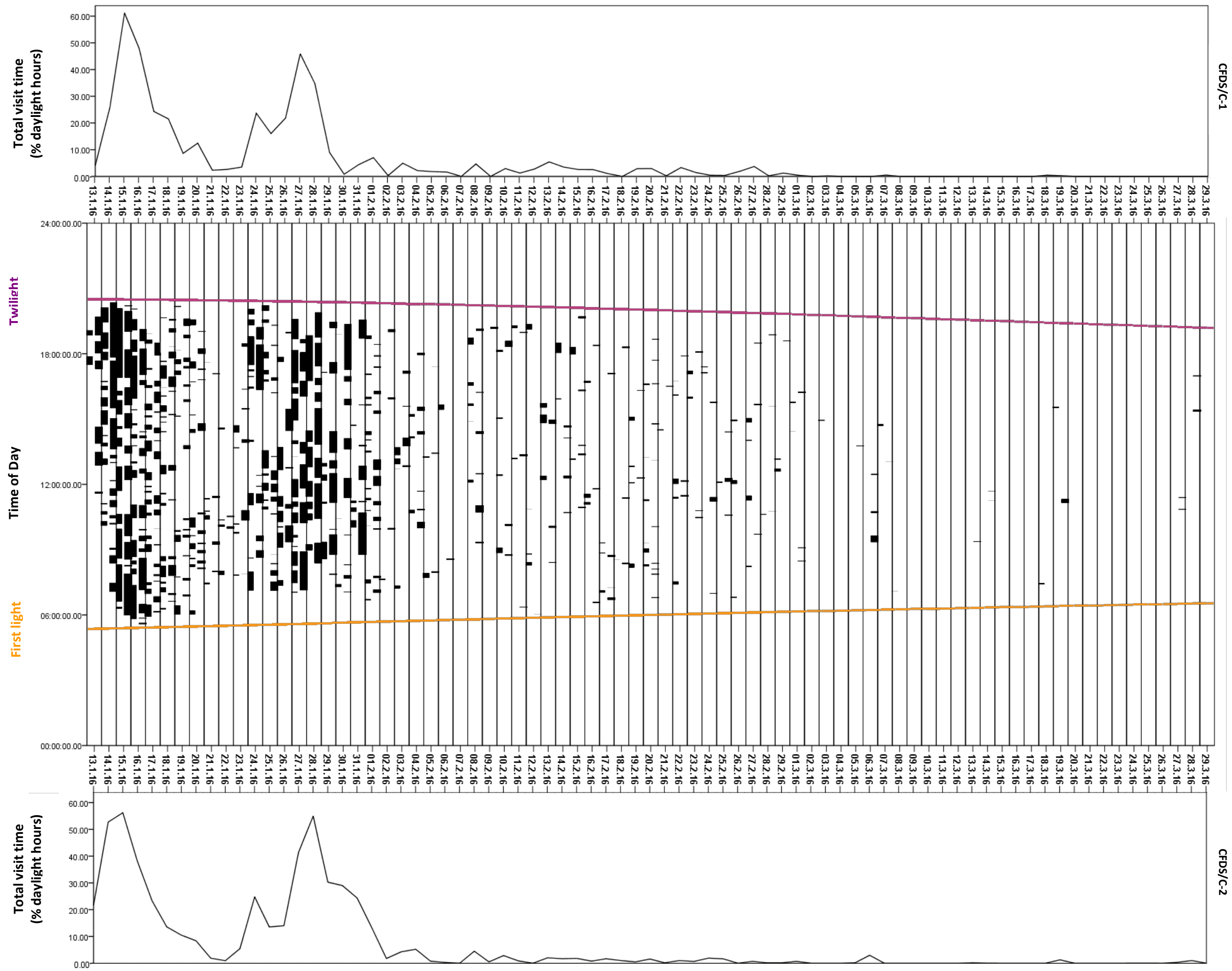

Figure 6.25: *Scavenger attendance at CFDS/C -1 and CFDS/C 2 during Cycle 4 (S-2016). Each vertical black bar represents a visit, the length of which corresponds to the length of the visit. Each column represents a single day, with the visits recorded at CFDS/C -1 on the left of the column, and those from CFDS/C -2 on the right. Most visits take place towards the beginning of the cycle while the carcass is still (relatively) Fresh. The longest visits are distinctly clustered in the morning and afternoon early in the cycle, becoming more dispersed later into the cycle. Overlaid are the times of first light (orange line) and twilight (purple line). Carcass visitation is strictly diurnal. No visits overlapped with either first light or sunset (all overlapped the latter). Above and below the main graph are graphs of total scavenger visitation time as a percentage of daylight hours for CFDS/C -1 and CFDS/C -2, respectively. The scavenger(s) spent as much as 61.18% of daylight hours at the carcasses, the patterns reflecting those of Figure 6.24.*

SUMMARY OF FINDINGS

Several general observations may be made from these two datasets: the first scavenging always occurred within 24 hours of placement of the carcasses in experimental circumstances. Scavenging was very strictly diurnal, and always began the same way: the scavenger(s) would break through the skin using a combination of scratching with claws and tearing with the front incisors. Once through, consumption of the subcutaneous fat would commence, and the opening in the skin would be enlarged. Consumption of the underlying muscle would follow, and any visceral structures beneath that. Initial points of entry into the carcass included the anus, groin, face, neck, and abdomen, suggesting no preference for a starting point. Rather, it suggests the scavenger started wherever it was able to first break through the skin. The scavengers consumed skin, subcutaneous fat, muscle, various internal organs, cartilage, bone, and even blood. This suggests there is no preference for tissue type, with anything palatable being eaten. There is a definitive preference, however, for fresher tissue, evidenced by the continuous expansion of scavenging lesions into areas of fresher tissue, especially after areas that have already been scavenged desiccate, putrefy, or are invaded by blow fly larvae. Scavenging of desiccated tissue was documented, but at a considerably reduced rate compared to fresh tissue. However, rehydration of desiccated tissue by rainfall was noted to produce spikes in scavenger attendance. Should the rain be heavy, though, scavenger attendance was observed to decline marginally (more at the CFDS/C-1 carcasses than at the CFDS/C-2 carcasses, true for both Cycle 3 | W-2015 and Cycle 4 | S-2016).

Not all carcasses were scavenged equally: the scavengers spent more time at the CFDS/C-2 carcasses during both seasons. Concomitantly, more tissue was removed from these carcasses, reflected in the patterns of carcass destruction. It is interesting to note, however, that all carcasses in all seasons were visited a largely comparable number of times. Scavenging attendance most frequently followed a bimodal pattern, with the majority of scavenger attendance taking place during early decomposition in winter, and advanced decomposition in summer. Scavengers were observed to spend up to half of daylight hours at the carcasses in winter, and almost two thirds of daylight hours in summer. Time to first bone exposure as a result of scavenging was highly variable, ranging from a little as 4 days to as many as 24 days. Despite these differences, however, the final patterns of carcass destruction were largely the same, and no carcasses were completely skeletonised by scavenging alone.

Chapter 7
Discussion

This entire study began by asking a seemingly simple question: what is the sequence and timing of decomposition in the Western Cape? The question arose out of the frustration experienced by the City of Cape Town's forensic practitioners at being unable to verify the accuracy of their estimates of post-mortem interval (PMI), or their inability to formulate one at all, for the many decomposed and skeletonised forensic cases passing through the city's mortuaries each year. Lacking accurate PMIs was leading to hinderances in the identification of these individuals, leaving many people tragically, and unacceptably, buried without a name, their families and friends left without answers and closure. Accordingly, an improvement in the understanding of how bodies decompose in this unique biogeographic region was sought, leading to more specific questions: How long does decomposition take? Does season make a difference? Does it differ from other temperate regions of the world, or from other places within South Africa? Would a body hidden in dense vegetation, such as that found on the Cape Flats, decompose differently? What physical processes and biological agents are driving decomposition, and can knowledge of these be used to help inform more accurate PMI estimates in the future in the local Western Cape context? These are the questions this study sought to answer.

RATES AND PATTERNS OF DECOMPOSITION

The most pertinent questions pertain to the decay process itself, principally: how long does it take in the Western Cape, and does this differ between seasons? It is important to note that the decomposition rates and patterns discussed forthwith are reflective of those with large vertebrate scavengers excluded. This study did not attempt to establish data on decomposition inclusive of large vertebrate scavenging, so it must be borne in mind that decomposition may have been drastically altered if all vertebrate scavengers had access to the carcasses.

Decomposition was observed to take more than twice as long in winter compared to summer. Is this consistent with our current knowledge of seasonal differences in decomposition? Although not unexpected given that other authors have reported faster decay in summer (Kelly, 2006; Kelly, van der Linde & Anderson, 2008, 2009; Voss, Spafford & Dadour, 2009; Battán Horenstein et al., 2010; Battán Horenstein, Rosso & García, 2012; Prado e Castro et al., 2012), the magnitude of the difference is noteworthy and comparable to that observed by Gilbert (2014) on the highveld region of South Africa (Gauteng province). The rate of decomposition is frequently reported to follow an inverse sigmoidal function (a logarithmic function) (Anderson & VanLaerhoven, 1996; Adlam & Simmons, 2007; Carter, Yellowlees & Tibbett, 2007). This function has the appearance of a reversed "S" and represents a rate of decay which is slow at first, increasing rapidly, and then slowing down again towards skeletonisation. This function was observed during winter decomposition, particularly in the CFDS/O, where it was very clear. However, the rate of decay of the CFDS/C carcasses in the same season did not present with this function. Instead, a combination of functions was observed, namely linear and exponential, the former evident for the entirety of the fresh and early decomposition stages, and the latter occurring around the time of the transition into advanced decomposition. The latter was also much shorter than the former and was proceeded by a plateau phase covering much of advanced decomposition and skeletonisation. This observation supports the results reported by Matuszewski and colleagues (2014). The decay functions observed for summer decomposition in this study (for both habitats) similarly support their findings, with strongly exponential rates of decay through early decomposition, plateauing slightly going into advanced decomposition, but never to the degree as observed in winter. Matuszewski and colleagues (2014) suggest that deviation from the "traditional" inverse sigmoidal pattern may be attributed to the use of larger carcasses (>50 kg). This factor is unlikely to be solely responsible, given the variant functions observed in this research, even though all the carcasses studied were all "large" by Matuszewski and colleagues' (2014) definition. So, what else could be contributing to these differences?

The differences in weather conditions between summer and winter likely played an important part in bringing about these observed seasonal differences in decay rate. Indeed, summers were characterised by higher temperatures, hot spells, stronger wind and solar radiation, considerably less rainfall delivered by notably shorter cold fronts, and lower humidity compared to winter. However, it is not immediately obvious which of these, or combination of these, are the most important drivers of decay in this region. It has been repeatedly emphasised in the literature that temperature, in particular, contributes very strongly to differences in decay rate (Rodriguez & Bass, 1983; Mann, Bass & Meadows, 1990; Vass et al., 1992; Shean, Messinger & Papworth, 1993; Megyesi, Nawrocki & Haskell, 2005; Suckling, 2011; Cameron, 2016). The results of this study lend some support to this assertion. Specifically, the ADD values associated with promotion of carcasses through early decomposition, advanced decomposition, and skeletonisation were significantly greater in winter compared to summer – more than doubly so for the former two. At first glance this seems counterintuitive: if temperature is the major factor influencing rate of decay, surely equivalent amounts of heat energy (which is what ADD essentially represents) would promote carcasses to specific TBS values irrespective of season? But it is not simply the quantity of heat energy which promotes decomposition. Rather, it is *how* this quantity is applied to the decomposition ecosystem.

In winter, the days are shorter and cooler, meaning the biological agents driving decomposition have less heat energy to draw upon for their metabolic processes. This is especially true for those with body temperatures linked to ambient temperature (poikilothermic), such as necrophagic insects. As a result, they break down the body more slowly, meaning it requires more heat energy overall, delivered over a longer period of time, to achieve the same extent of decay as might be achieved with higher temperatures.

This highlights the fundamental role temperature plays in regulating the rate of decay. However, temperature is by no means the only major contributor to decay, and the potential influence of other environmental factors should be considered. Support for this may be found when considering the process by which the mummification observed in this study came about. Mummification via natural desiccation, which is a form of preservation, occurs as a result of dehydration of soft-tissues. At its most basic, desiccation requires a dry environment, at *any* temperature. The prerequisite is a lack of environmental moisture which has the effect of dehydrating the soft tissues (Pinheiro, 2006; Lynnerup, 2007; Campobasso et al., 2009). In the case of the Western Cape, the experimental carcasses largely followed the expected gross pattern of decomposition (Clarke et al., 1997; Megyesi, Nawrocki & Haskell, 2005), except that in summer, mummification occurred far more rapidly than expected in the local climate, with five carcasses mummifying within one month (30 days), the quickest being 17 days.

Preservation does not come about by tissue dehydration alone. Rather, preservation occurs due to the effect tissue dehydration has on the bacteria-driven decomposition process. To elaborate: upon death, the body's cells are starved of oxygen and begin to autolyse; that is, the cells' lysosomes break down, spilling more than 40 hydrolytic enzymes into the intracellular space which begin the process of auto-digestion. Concomitantly occurring is a massive bloom in endogenous bacterial populations – mainly in the gut, lungs and lower urinary tract – which are no longer contained by the body's natural processes. These bacteria are the start of the putrefactive process, and, together with autolysis, contribute to the internal breakdown of the body's soft tissues. In order for preservation to occur, this process must be interrupted, and this is exactly what desiccation does. Bacteria and fungi require water to function and proliferate; its removal initially inhibits, and, with prolonged absence, ultimately terminates bacterial and fungal-driven putrefaction (Lynnerup, 2007). The same applies to the attendant insect populations, who's activity is varyingly hindered or terminated during all life phases by desiccation of body tissues and the environmental conditions promoting it (Introna & Campobasso, 2000; Lynnerup, 2007; Campobasso et al., 2009).

The point at which the putrefactive process – whether driven primarily by bacteria, or later, insects – is interrupted not only influences the degree of mummification, but also the timing. The timing of mummification is not well documented (Campobasso et al., 2009), mainly due to the gradual nature of the onset and progression of mummification and the long periods of time that elapse before the discovery of a body: the circumstance wherein mummification is most frequently encountered in the forensic setting (Pinheiro, 2006). Case reports in the literature report a wide range: from as little as two weeks post-mortem (Rhine and Dawson, 1998) to in excess of 12 months (Marella et al., 2013), but most authors agree that it takes an average of several weeks to months (Jit, Sehgal & Sahni, 2001; Eklektos, Dayal & Manger, 2006; Campobasso et al., 2009; Marella et al., 2013). Mummification in four weeks or less is considered to be rapid and is referred to as *precocious mummification*.

Reports of precocious mummification are few and far between, and are often associated with climatic extremes. Examples include: Kashimura and colleagues' (1984) report of a body mummified within 25 days inside a prefabricated structure in Japan during a heatwave; Galloway and colleagues' (1989) report of the mummification of bodies in as little as 11 days in the arid climate of Arizona, USA; and similar timeframes reported by Rhine and Dawson (1998) in the arid New Mexico, USA climate. Only one report of precocious mummification in a temperate climate exists: Marella and colleagues (2013) reported a case from Italy wherein mummification of human remains occurred within four weeks of the disappearance of the individual.

The rarity of the occurrence of precocious mummification relates to the specificity of the conditions which facilitate it (i.e. prolonged hot, dry and windy conditions). Indeed, natural mummification in general is most often reported to occur in desert or arid conditions, and rarely in temperate climates (Jit, Sehgal & Sahni, 2001; Campobasso et al., 2009). Megyesi and colleagues (2005) even altered their TBS scoring criteria to take this fact into account. Mummification is only reported in temperate climates wherein other factors have contributed to its onset. The report by Marella and colleagues (2013), for example, cites the fundamental role of the massive perimortem trauma experienced by the deceased. The individual had been hit by a train, resulting in body-wide lacerations and amputations which allowed significant exsanguination and subsequent dehydration of the tissues. The reports by Kashimura and colleagues (1984) and Campobasso and colleagues (2009) illustrate how a warm, dry microclimate – such as that which may occur in a closed room or house – can result in mummification, including in a temperate climate. However, no such contributory factors are at play in the present study. All five carcasses which experienced precocious mummification were largely comparable in biographics and intact, with only a small bullet wound to the top of the head which sealed with clots in the immediate aftermath of death, and all were exposed to similar environmental conditions. These observations thus represent the first report of precocious natural mummification without contributory factors in any temperate region in the world.

This, then, begs the question: if there are no confounding/contributory factors such as those reported in the literature where precocious mummification is observed, what is driving the process in the Western Cape? It is argued that much of the answer lies in the unique summer weather of Cape Town which sees spells of mummification-inducing weather conditions. As noted in Chapter 3, these spells are characterised by two or more consecutive days presenting with a specific combination of weather criteria known to promote mummification (i.e. hot, dry, and windy). Thus, this would include a 24-hour maximum ambient temperature greater than 30°C (i.e. hot), a mean solar radiation load greater than 600 $W.m^{-2}$ (i.e. hot), a mean daytime ambient humidity less than 50% (i.e. dry), and daytime windspeed/gust measures of between 32.19 and 48.28 $km.h^{-1}$ (i.e. windy). Days with mummification-inducing conditions may be preceded or succeeded by days with near-mummification-inducing conditions which, although not presenting with all four criteria, would still likely contribute to the promotion of mummification. Looking at the timing of these spells, they fall within the first three weeks of decay in both summer cycles, when the carcasses are in early decomposition and blow fly larval activity is highest. It is known that blow fly larval masses generate their own heat, with temperatures more than 20°C over and above the ambient temperature reported (Campobasso, Di Vella & Introna, 2001). This means that, during mummification-inducing conditions, the temperatures blow fly larvae are exposed to potentially exceeds 50°C – above the lethal thermal threshold of all the forensically significant blow fly species noted on the carcasses in summer (Lucilia spp. = 47.8°C, *Chrysomya albiceps* = 48.8°C, *Chrysomya marginalis* = 50.1°C [Richards, Price & Villet, 2009]). This would result in mass mortality of blow fly larvae, swiftly removing one of the principle drivers of decay, such as that observed by Kelly and colleagues (2009). Such conditions are not short-lived, though, and persist for as long as five days. Anecdotally, it was noted that blow fly activity was considerably reduced on days with mummification-inducing conditions, meaning that potential blow fly oviposition would also be reduced. Under such conditions, any existing blow fly eggs may also enter a state of diapause and delay hatching until conditions are more favourable (Campobasso, Di Vella & Introna, 2001). Simultaneously, exposed tissues of the carcasses would desiccate. It is known from the literature that female blow flies will not oviposit on desiccated tissues due to the high susceptibility of eggs and young larvae to desiccation (Campobasso, Di Vella & Introna, 2001; Richards, 2007; Gunn & Bird, 2011; Williams et al., 2017). This means that once favourable conditions for blow fly eggs and larvae resume, the proportion of the resource available to them is reduced, which may negatively affect their survivability. Similarly, less of the carcass is available for new oviposition. Taken together, new larval masses will be smaller and therefore less tissue may be consumed than may otherwise have been prior to the onset of mummification-inducing conditions. Cumulatively, this represents functional exclusion of the insect-mediated decomposition of the carcasses during each spell of mummification-inducing conditions – a core prerequisite for the promotion of mummification. Repeated spells of mummification-inducing conditions such as those observed during this study could, therefore, strongly retard and even stop insect-mediated decomposition, which, together with environmentally-mediated soft-tissue desiccation, can bring about precocious mummification.

Although all carcasses experienced mummification, they all ultimately skeletonised. Time to the onset of skeletonisation (TBS = 27) ranged from 39 days to 69 days in summer (with a median of 48 days), and between 102 and 160 days in winter (median of 89 days). The values for summer are comparable with those observed by Suckling (2011) in central Texas, USA – a humid subtropical environment, and shorter than those reported by Voss and colleagues (2011) from Perth, Western Australia (a comparable climate to that of Cape Town) who reported skeletonisation of exposed, unclothed remains by 91-98 days post-mortem. Not all studies report time to skeletonisation in number of days, choosing rather to report the ADD values at which skeletonisation occurred. Using this measure, the results of this study are variably comparable with those from the Highveld region of South Africa (specifically the city of Pretoria). Myburgh and colleagues (2013), and Sutherland and colleagues (2013) report similarly-sized pig carcasses entering skeletonisation between around 500ADD and 2,300ADD in summer, the majority at around 1,000ADD – comparable to the results reported in this study (median of 1,016ADD). In winter, however, Myburgh's carcasses entered skeletonisation between around 2,400ADD and 3,400ADD, somewhat more than that measured in this study (median of 2,357ADD).

The observations on precocious natural mummification discussed above highlight the role weather conditions at both a local and a seasonal level can play in varying the rate and pattern of decay, and how it can facilitate decompositional processes which are unique (e.g. precocious natural mummification). The same observations also demonstrate the modulatory effect weather conditions may have on the insect biota driving the decay process. The next question, then, is that, given that the literature indicates that the primary decomposers on land in most circumstances are insects, are there any other special cases with respect to the insect guild associated with decomposition in the Western Cape?

INSECTS ASSOCIATED WITH DECAY IN THE WESTERN CAPE

To answer the question posed above, it is pertinent to consider the original forensic entomological work conducted in the Western Cape. In the late 1970s, AJ Prins sought to determine the insect species associated with decomposition in the Western Cape. This research culminated in a PhD thesis (Prins, 1980) and several publications (Prins, 1979, 1982, 1983, 1984), covering morphological and biological notes on the species identified through extensive field surveys conducted throughout the modern-day Eastern Cape and Western Cape provinces. Prins sampled the insect populations associated with a variety of decomposing organics, including washed up kelp, dead seabirds, small animals, and animal droppings. He did not, however, measure or assess the decay process, develop occurrence matrices for forensic applications, or investigate the seasonality of these species and their succession patterns (and how these are affected dense vegetation), or how they compare with those from other regions of South African and the world. The results of this study fill these voids in the knowledge base, but some require further consideration.

Considering the time lapse between Prins' study and the present study, it is appropriate to investigate if the contemporary local forensically significant guild is the same as that which he recorded almost four decades ago. One of Prins' most notable findings was the discovery of *Chrysomya megacephala* in the Western Cape. Its absence from this study's species list, as well as that of *Calliphora croceipalpis*, is conspicuous. Despite sampling of larval and adult blow flies in both habitats in all four seasonal cycles, no examples of these species were identified. It is possible that the absence of *C. megacephala* is due to a combination of its preference for humid conditions which restricts its occurrence to the immediate coastline, as well as its apparently low abundance in South Africa (Richards, 2007). With the research site only 38 m above mean sea level, the absence of *Ca. croceipalpis* individuals may be due to its preference for higher altitudes (Richards, 2007).

Another important difference between this study's forensically significant insect assemblage and Prins' is the identification of numerous *Calliphora vicina* individuals. Although he did not know it at the time, Prins did collect two specimens in Cape Town in 1976, but these were only successfully identified in 2004 (Williams & Villet, 2006a). Twenty five years passed between Prins' collection and the next collection, which was a single individual from Witbank on the highveld region in 2001 reported by Williams and Villet (2006a). In the same paper, Williams and Villet advised monitoring the growth and spread of South African populations of *Ca. vicina* given its potential to become a forensically significant blow fly species in South Africa in the future (as it already was in Europe and the New World). The same year, Kelly (2006) reported scattered visitations by *Ca. vicina* to decomposing pig carcasses in Bloemfontein (also on the highveld region of South Africa) recorded during winter 2003, and again the following year. Brink (2009) trapped more individuals in the same region following Kelly's (2006) work. Richards and colleagues (2013) trapped and successfully identified *Ca. vicina* individuals in Grahamstown, Eastern Cape (neighbouring province to the Western Cape), but season of capture was not stated. Back north, Gilbert (2014) noted that *Ca. vicina* was the dominant blow fly species in winter on the Gauteng highveld (same region as the specimen collected from Witbank). In the same year, van der Merwe (2016) again recorded *Ca. vicina* on carcasses in the Free State, albeit in sporadic occurrences of low numbers. These findings suggest that the range of *Ca. vicina* in South Africa is indeed spreading, with populations growing slowly in numerous locales around the country. But, until now, no new records of *Ca. vicina* existed for the Western Cape. The specimens identified in this study represent the newest records of this species in South Africa, and the first in the Western Cape since 1976, again indicative of range expansion. Collectively, these findings emphasise Williams and Villet's (2006a) assertion for the potential for *Ca. vicina* to attain forensically significant status in South Africa which may affect future local investigations reliant on forensic entomological evidence. Specifically, it stands to provide local forensic entomological practitioners with an additional species for PMI estimation, especially in the cooler months of the year and where indoor remains are concerned. Williams and Villet (2006a) did note that it's possible that the gap in the records of *Ca. vicina* between 1976 and 2001 may be due to misidentification of the morphologically-similar indigenous *Ca. croceipalpis*, but it's impossible to confirm. With this in mind, it is appropriate to state that, while every effort was made to ensure the identification of *Ca. vicina* was correct (including reidentification of adult specimens using Lutz and colleagues' (2018) brand new key for Afrotropical adult blow flies), the use of molecular genotyping for confirmation of this species' contemporary occurrence in the Western Cape is recommended for future research.

As illustrated in Chapter 1, insect succession associated with decomposition follows a largely standard pattern the world over, that is: initial colonisation by adult blow flies in the early stages of decay, succeeded by their larvae which are preyed upon by predacious beetle species such as those from the families Silphidae and Histeridae. Adults and larvae of Piophilidae colonise the remains as butyric fermentation sets in and persist until the remains desiccate. Desiccation brings a cohort of beetle species which specialise in dry tissue, principally the Dermestidae, the adults and larvae of which will reduce the remains to bone (Smith, 1986; Anderson & VanLaerhoven, 1996; Campobasso, Di Vella & Introna, 2001; van der Merwe & Scholtz, 2005; Byrd & Castner, 2010). The successional patterns of insects observed in this study are largely congruent with this general pattern, but the biogeographic and climatic specificity of the Western Cape provides some important variations which affect decomposition.

Internationally-speaking, the species assemblage associated with carrion bears some similarities to that recorded in Argentina. Specifically, Battán Horenstein and colleagues (2012) found that *C. albiceps* is dominant in summer, and Lucilia spp. and *Ca. vicina* most common in winter. Beetle-wise, Trogidae and Silphidae individuals were also present in winter, but that is where the similarities end. The same study also observed Trogidae and *Ca. vicina* in summer – neither of which were seen in summer in this study. Also in Argentina, Centeno and colleagues (2002) noted an absence of Silphidae in summer, again contrasting with this study which did record their presence, albeit sporadically and in low abundances.

There are considerably more similarities with the carrion-associated species assemblage here in South Africa. In the Western Cape, summer decomposition is characterised by attendance by the blow flies *Chrysomya albiceps* and *Chrysomya marginalis*. In late winter through to spring, *Chrysomya chloropyga* is the dominant blow fly species. The species assemblage noted by Gilbert (2014) from the Gauteng province of the South African highveld is the most comparable to that of the Western Cape, both in terms of taxa identified and their seasonality. In Bloemfontein, also on the South African highveld (approximately 400 km to the south-east of Gauteng), similar blow fly species are noted in summer (Kelly, van der Linde & Anderson, 2008; van der Merwe, 2016), but this is where the similarities end. Kelly and colleagues (2008) found greater species diversity in winter compared to summer (20 species compared to 16), the inverse being true for this study, albeit not significantly so. Further differences between the Western Cape and the Free State may be found in the fact that Kelly and colleagues (2008) noted *C. marginalis* on carcasses in winter. In this study, *C. marginalis* was predominantly seen in summer, with almost no winter occurrences (and then only very late in the cycle – closer to spring) – and only in the CFDS/C (i.e. within dense vegetation/shaded circumstances). Additionally, both Kelly and colleagues (2009) and van der Merwe (2016) noted the attendance of *C. chloropyga* to carcasses in summer, when they were only observed in winter trials with this study, but towards spring, in line with the findings of Majola and colleagues (2013) (also from the Free State). van der Merwe (2016) found *C. albiceps* routinely in winter – again differing from the present study which only recorded this species late in the winter cycle in low abundances, in a similar manner to *C. marginalis*.

The effect of shading on insect diversity and abundance on carcasses is also a subject of interest. This study found significantly reduced diversity and abundance in shaded (heavily vegetated) circumstances, in line with the findings of Sharanowski and colleagues (2008) working in Canada. Research results from Argentina are similar to those of this study, with Battán Horenstein and colleagues (2012) also finding greater abundances of *Ca. vicina* in shaded circumstances, and greater abundances of *N. rufipes* in sunlit circumstances. Once again, however, this study's results contrast with those from the Free State, where Majola and colleagues (2013) found higher species diversity in the shade. It is possible that this is due to the structure of the vegetation casting shade: specifically, in the Majola (2013) study, shade was cast by tall trees with open air flow beneath. In this study, the Port Jackson and Rooikrans tree thickets are incredibly thick and extend to ground level, essentially enveloping anything within. The ground beneath is also covered in a thick leaf litter layer in excess of 20 cm deep. These circumstances do not permit the discovery of a decomposing carcass by insects as readily as one in exposed circumstances, nor do they facilitate the establishment of large populations of crawling insects owing to the leaf litter. Support for this is also found in the fact that species diversity and total abundance did not differ much between seasons, regardless of habitat, but within seasons these measures differed significantly between habitats, with reduced diversity and abundance in the CFDS/C. These differences are unlikely to be caused by thermal differences as suggested by other authors (e.g. Shean, Messinger & Papworth, 1993) considering that ambient temperatures differed little, and not significantly so, between the habitats.

The leaf litter in the CFDS/C has another interesting potential effect: it may contribute to a reduction in the distance blow fly larvae migrate from a decomposing carcass, evidenced by lower numbers of migrating blow fly larvae recovered from pitfall traps in the CFDS/C. This also manifested as fewer migratory events being recorded for the CFDS/C, in that there was less chance for individuals to be trapped during smaller migratory events, meaning one could be missed entirely using this measure. There are three possible reasons for these findings: the first is possible predation of the blow fly larvae populations by the Cape grey mongooses which scavenged the carcasses, but such predation was not observed, nor is the species known to be insectivorous (Cavallini & Nel, 1990a, 1995). More likely is that the leaf litter may be acting as an obstruction to migration. Or, even more likely, is that the leaf litter is a cooler and moister migratory substrate compared to the sand in the CFDS/O. Blow fly larvae migrating in search of cooler temperatures with sufficient environmental moisture for pupation therefore do not have to travel nearly as far to find such conditions. It is posited that the importance of having cooler, moister conditions for migration also contributed to the reduction in the size of migratory events in the CFDS/O during the second winter. Although soil moisture was not measured, it is not inconceivable that the higher temperatures, shorter cold fronts, and reduced rainfall experienced in the second winter as a result of the severe drought which struck Cape Town during the study period would result in hotter, drier soil substrates which are less favourable for migration when compared with deep leaf litter. Accordingly, larvae either stayed closer to the carcass where the soil would be cooler and moister as a result of the cover afforded by the carcass and the decompositional fluids draining from it, or they perished attempting to migrate and were thus never trapped. This highlights the impact weather conditions may have on migratory events and the numbers and locales of the subsequent puparia which are often sought in forensic contexts.

It is possible that the presence of leaf litter in the CFDS/C contributed to the observation of reduced directional preference in that habitat, although shading also likely contributes to this. While there is extensive published information on migratory distance and depth for blow fly larvae (see review by Gomes, Godoy & Von Zuben, 2006), there is almost no information in the literature about directional preference for migrating blow fly larvae, especially under natural circumstances (as opposed to artificial experimental setups). This is concerning considering such information could greatly assist in the recovery of blow fly puparia in forensic circumstances, especially where time constraints are a concern (Turpin, Kyle & Beresford, 2014). It was for this reason that this study undertook to investigate this aspect of carrion insect behavioural ecology in the local circumstance. Only Turpin and colleagues (2014) have published information on the dispersal directionality of blow fly larvae in natural/field settings, their findings indicating no directional preference for dispersing *Lucilia illustris* larvae. In contrast, this study found an overall dispersal directional preference towards the west. Why this is occurring is not immediately obvious as the time of day when the larvae were migrating was not recorded. But it is known that blow fly larvae are strongly negatively phototactic (i.e. they shy away from light) (Kamal, 1958), so this directional preference may indicate migration away from the sun, suggesting migration during the morning. Migration in the morning would also make sense given the lower temperatures and higher humidity experienced during that part of the day which are more favourable for migrating blow fly larvae exposed on the ground surface and prone to desiccation.

SMALL MAMMAL SCAVENGING

One of the most significant, and certainly the most unexpected, findings of this study was extensive scavenging by Cape grey mongoose (*Galerella pulverulenta*) as catalogued in Chapter 6. As highlighted in Chapter 1, the Western Cape lacks many of the medium and large carnivores present in other areas of the country. Those that persist in urban settings within the City's limits were excluded from access to the experimental carcasses given the experimental design of caging and the facility's fencing. Thus, when scavenging was first detected on carcasses, it came as quite a surprise. It was initially considered to completely exclude the mongooses by lining the weighing grid with wire mesh, blocking their entrance route (which, interestingly, is the same way rodent scavengers gained access to Spencer's [2013] carcasses). But, instead, the mongooses were allowed access, mainly due to the unexpected nature of this finding. This decision, together with the mongooses' tenacity for accessing the carcasses, proved fortuitous given the forensic value of results obtained, and the new zoological knowledge it contributes for this species. The question remains, though: why was scavenging *not* expected by this species? In short, the current literature on the Cape grey mongoose provides no indication that individuals of this species will scavenge carrion to the extent observed in this study. This yields further questions: how different is the feeding behaviour of this species in this study from what is known in the literature? And does the presence of carrion change its ranging behaviour?

The Cape grey mongoose has been described as diurnal (active during daylight hours only) (Dorst & Dandelot, 1970, Smithers, 1983), or crepuscular/nocturnal (Rood & Wozencraft, 1984), but where diurnality was indicated it was strictly between sunrise and sunset, with a decline in activity during the heat of the day, resuming in the afternoon. They inhabit diverse habitats, their range covering a large portion of southwestern South Africa, from coastal fynbos to arid Karoo, although they show a preference for dense vegetation to serve as shelter (Cavallini & Nel, 1990a,b, 1995). They have been noted to be poor diggers, electing to occupy existing burrows where possible (Smithers, 1983). They are mostly solitary, occurring in low densities of one per 5-20 hectares (Cavallini & Nel, 1990b). However, Cavallini and Nel (1990b) have reported some sociality between individuals which they posited may be linked to food availability. It is known that males and females come together to breed between August and December, and that the young only leave when they are old enough to fend for themselves, so it may not be unexpected to see pairs during this time of the year (Smithers, 1983). They have been noted to feed predominantly on small vertebrates (>90% of their diet), but eggs, seeds, grape skins, refuse, insects and carrion variously form small parts of their diet, suggesting an opportunistic, rather than systematic, feeding regime (Cavallini & Nel, 1990a, 1995).

The small mammal scavenging results of this study support many of these observations, particularly the strong diurnality with a rest during the heat of the day, and the preference for dense vegetation, evidence by its predominant occurrence in the CFDS/C habitat despite the availability of carrion in the adjacent, open (exposed) habitat. But the extent of carrion feeding observed in this study was heretofore completely unknown and entirely new to science, both in terms of this species' biology and its forensic significance. The intensity of scavenging of porcine carcasses by this species in the CFDS/C is evidenced not only by its extensive attendance to the carcasses, but in the way the carcasses lost weight, too. As was previously noted, the rate of weight loss of carcasses in the CFDS/C, particularly in winter, demonstrated a curiously linear pattern for much of the decomposition sequence, quite in contrast to the inverse sigmoidal and exponential patterns of the carcasses in the CFDS/O. The effects of this really became visible when the carcasses reached advanced decomposition in a significantly shorter time than in the CFDS/O habitat in the same season, precisely what O'Brien and colleagues (2010) observed with scavenging in Australia. Moreover, the rate of decomposition was found to be largely similar between the two habitats, defying the results of numerous other studies which reported slower decay rates in shaded circumstances (Shean, Messinger & Papworth, 1993; Komar & Beattie, 1998; Majola, Kelly & van der Linde, 2013). It is posited that these deviations from the expected patterns of decay are attributable, in large part, to scavenging by Cape grey mongoose. This reinforces the aforementioned argument that temperature does not necessarily play the biggest role in influencing the rate and pattern of decay, as the temperatures were near-identical in both habitats, yet the rates of decay were different – significantly so in some instances.

A notable finding was the rapid decline in scavenging behaviour as the carcasses entered advanced decay, regardless of season. Why would this be? It is most likely linked to palatability: as the carcass decays, numerous bacteria species proliferate, and several, including *Clostridium perfrigens*, *Clostridum botulinum*, *Escherichia coli*, *Staphylococcus aureus*, *Shigella dysenteriae*, *Salmonella typhi*, and *Bacillus stearothermophilus,* produce toxins including amines and sulphur compounds which are dangerous to mammals and avians exposed to them (Janzen, 1977). Additionally, blow fly larvae produce ammonia as a by-product of their metabolism, which, by advanced decomposition, would have accumulated considerably, and is similarly toxic to mammals and avians (Tomberlin & Benbow, 2015). Furthermore, towards the end of decay the carcass tissues mummify regardless of season of deposition. It is possible that the mongooses' carnassial dentition is not well-suited to managing desiccated, tough tissues, reducing the amount of tissue they may otherwise have been able to consume. The fact that scavenging proceeded for much longer in winter compared to summer is reflective of the large difference in rate of decay measured between these seasons, with winter carcasses remaining fresher for longer (at least as far as the mongooses were concerned). Such patterns have been noted with other scavengers (Dillon, 1997; Spencer, 2013), but contrast with others. One exception is the scavenging of human bodies by racoons in Tennessee, USA, which was most intense in summer (Jeong, Jantz & Smith, 2016).

Another exception is the findings of O'Brien and colleagues (2010) who noted reduced scavenging in winter as a result of rainfall. Given that the climate in which the present study was conducted is largely the same as that in which O'Brien and colleagues (2010) conducted their research, this begs the question: why the difference in results? The most likely answer is the density of the vegetation in the CFDS/C, which, as indicated in Chapter 3, reduced the amount of rainfall experienced beneath the canopy by as much as half, limiting the magnitude of its effect. This is not to say the mongoose wasn't affected at all by rainfall; indeed, periods of rain in winter saw a reduction in carcass attendance, but only at one carcass, true for both winters. What makes this finding interesting is that the carcass which was visited less on rainy days in both seasons (CFDS/C-1, specifically) happened to be the one that was furthest from the mongooses' known refuge at the research site, this being a storm drain closer to the CFDS/C-2 depositional sites. This suggests that inclement weather in winter only reduces the mongooses' scavenging range, rather than its overall activity, at least where dense vegetation affords a degree of shelter from the rain. It is interesting to note that the converse is true for summer. Specifically, rainfall in summer is positively associated with scavenger attendance. This is likely due to the fact that rainfall rehydrates the carcass tissues, making them softer and therefore more accessible to feeding by the mongooses.

These findings challenges Brown and colleagues' (2006) assertion that scavengers are unlikely to respond directly to rainfall. Rather, they posit that the relationship between scavenging and rainfall is covariant, with a reduction in food resources during periods of rainfall resulting in the reduction in scavenging. But this does not seem to hold true if the food resource happens to be large and close to the species' refuge, as was the case with this study. Where Brown and colleagues' (2006) point does find support in this study's results, as well as those of Spies and colleagues (2018a) (which was conducted in the same habitat) is in the fact that carcass visitation spiked following rainfall in the dry stages of decay. This is likely due to rehydration of desiccated tissues, making them more accessible to the mongooses. To conclude this point, it must be noted that, despite the reduction in scavenging O'Brien and colleagues (2010) observed in winter, they conclude that the effect of scavenging on decomposition is, in fact, greatest in the cooler months when unassisted decomposition is at its slowest, with the opposite true for summer. This conclusion is congruent with the scavenging results of this study, and those of Jeong and colleagues (2016).

Further consideration of the patterns of scavenger attendance and carcass destruction emphasises the uniqueness of the local mongooses' scavenging behaviour when compared to other scavengers elsewhere in the world. Scavengers observed by Dillon (1997) began their feeding at the site of the euthanasia bullet wound, and the Tennessee racoons demonstrated a consistent pattern for scavenging of limbs first, followed by the trunk, and then the head (Jeong, Jantz & Smith, 2016). The local mongooses, on the other hand, showed no distinct pattern of carcass destruction, beginning consumption wherever they were first able to break through the skin of the carcass, and never consuming tissue in the vicinity of the euthanasia bullet wound. This is true for both this study and that conducted by Spies and colleagues (2018a,b). The racoons were also slow off the mark, with the earliest feeding noted only 2.5 days post-mortem – quite in contrast to the mongooses' rapid capitalisation of the carrion resource, with the earliest feeding beginning within 12 hours of deposition of the carcasses. Perhaps the most comparable scavenger, internationally-speaking, is the Virginia opossum (*Didelphis virginiana*), a nocturnal marsupial similar in size to the Cape grey mongoose. This species similarly begins scavenging at the natural orifices (i.e. where it is easiest to break through the skin), but where the mongoose consumes skin, subcutaneous fat, and muscle first, the opossums are more interested in viscera and consume this first (King et al., 2016).

The fact that the mongoose is the sole scavenger in this habitat is notable, given the presence of other potential scavengers at the research site, specifically pied crows (*Corvus albus*) and domestic felids (*Felis catus*). One could argue that this is a direct result of the caging of the carcasses, but this is not necessarily the case. Support thereof lies in the results of a follow-up study to the present one, conducted in 2017 by the present author together with colleagues Mr Max Spies and Dr Victoria Gibbon (Spies, Finaughty & Gibbon, 2018; Spies, Gibbon & Finaughty, 2018a). As with the present study, Cape grey mongoose was the only scavenger species recorded. The lack of canid scavenging may be ascribed to the fencing surrounding the entire research site. The lack of felid scavenging may be due to the fact that the local cats are well-fed by the facility's staff. The lack of scavenging by the pied crows is more surprising and is likely due to the heavy cover created by the Port Jackson and Rooikrans trees in the CFDS/C habitat. Unlike terrestrial scavengers which utilise olfactory cues to locate carrion (DeVault, Rhodes & Shivik, 2003), birds rely on visual cues (Reeves, 2009). Simply put, the fact that the crows can't see the carcasses through the dense tree cover means that they don't know there is a carrion resource available to exploit.

Arguably one of the most important results of the follow-up research by Spies and colleagues (2018a,b) was addressing an outstanding issue in the current research. Specifically, the design of the present study did not allow for direct deductions to be made about the magnitude of the taphonomic effect of scavenging by this species – an essential outcome if one wishes to factor the effect of scavenging into PMI estimates. Accomplishing this required comparison with carcasses inaccessible to all scavengers. The impact of scavenging is clear from the results: the experimental carcasses were completely skeletonised within 14 days through mongoose scavenging activity, while the caged carcass was still in advanced decomposition at the termination of data collection on Day 93. Patterns of carcass visitation were very similar to those recorded in this study. These results are very similar to the findings of this study and, importantly, illustrate the magnitude of the effect scavenging by Cape grey mongoose can have on decay rates in this habitat, placing it in the league of much larger scavengers whose activity is known to definitively accelerate the rate of decay (Dillon, 1997; Allaire, 2002).

Pairing these findings with the knowledge that many terrestrial vertebrates are facultative scavengers and will readily take advantage of carrion resources if they are available (Kostecke, Linz & Bleier, 2001; Peterson, Lee & Elliott, 2001; Bumann & Stauffer, 2002; DeVault & Rhodes, 2002; DeVault, Rhodes & Shivik, 2003) emphasises the forensic significance of these findings. When formulating an estimate of PMI in the local circumstance, it is imperative that forensic practitioners bear in mind the possibility that remains may have been scavenged by Cape grey mongoose – especially those recovered from the CFDS/C habitat or similar circumstances. This species is well-known and widespread throughout the Western Cape, meaning that it is quite likely they could come across a body placed anywhere outside of direct human habitation as long as it is within the dense cover this species favours. Identifying signs of mongoose scavenging is key to this process. For fresh bodies and those in early decomposition, the destruction pattern of the body is telling and delineable from that of larger scavengers such as dogs or vultures, particularly through the absence of damage to long bones. A search for spoor or scat near the body (both of which are well-documented, e.g. Stuart & Stuart, 2013: 67,277,283,360) may help confirm scavenging by this species. For bodies in an advanced state of decay or skeletonisation, identification of scavenging by Cape grey mongoose is more challenging. Special attention should be given to the costochondral junction of the ribs as this is the one region of the body where the mongoose has been documented to damage the hard tissues. Spoor may have been obscured by weathering, but desiccated scat may still be present and a search for some should not be discounted.

STUDY LIMITATIONS

It is important to acknowledge shortfalls in the study design and/or its results which may influence the interpretation thereof. In this regard, there are four limitations with this study which readers should be aware of: (1) the use of pig carcasses as analogues for humans; (2) the small sample size; (3) the lack of clothing on the carcasses; and two aspects of the research design: (4) the data collection frequency; and (5) the caging of the carcasses.

PIGS AS ANALOGUES FOR HUMANS

For as long as animal analogues have been used to model decomposition, so has the validity of the results obtained from experimentation using them been questioned. As highlighted in Chapter 1, extensive research has demonstrated that pig carcasses afford an appropriate model for the decay for human bodies of comparable weight (below 100 kg). But, as numerous researchers have highlighted (e.g. Connor, Baigent & Hansen, 2018; Dautartas et al., 2018), and with which this author agrees, they can never be used to directly extrapolate findings to humans. Thus, the validity of results obtained from forensic taphonomic and forensic entomological experiments utilising pig carcasses is restricted to the establishment of baseline data only. Accordingly, the use of pigs for this research does not invalidate the findings. Rather, its limitation lies in the author's inability to *directly* extrapolate the findings to forensic scenarios involving humans, which, in turn, limits its use in court.

SMALL SAMPLE SIZE

As with many taphonomic studies of this type, the sample size was limited due to resource and time constraints. Every care was taken to ensure the research design conformed to the specific rules for inference outlined by Michaud and colleagues (2012). But with limited financial support, space, and time to collect the diversity of data sought, only so many carcasses could be monitored. This does not invalidate the results of the research, especially given its pioneering nature – a fact recognised and stressed by Michaud and colleagues (2012) – but, it does limit the power of the conclusions drawn from statistical analysis thereof. Validation of the results of this study – proving that the patterns observed are consistent and not the result of random variation – requires further research with a larger sample size in multiple instances of the habitats in question across the Cape Town Metropole to ward against simple pseudoreplication (Michaud, Schoenly & Moreau, 2012).

LACK OF CLOTHING

This study employed unclothed carcasses only. This scale of this study did not permit the inclusion of clothing as an additional variable for assessment. This would have required a doubling of the number of carcasses used which, as indicated above, was simply not possible. But, again, this does limit the inferences which can be made from the results. Where this is most relevant is in the patterns of insect colonisation and scavenging activity. Regarding the former, disparate opinion exists in the literature regarding the influence of clothing, though agreement exists that clothing and covering of some kind can serve to delay colonisation of decomposing remains by blow fly larvae through the reduction of access for the adults, in turn slowing down the rate of decay (e.g. Cahoon, 1992; Miller, 2002; Card et al., 2015). Regarding the latter, Haglund and colleagues (1988) note the possibility of an altered decay pattern and disarticulation sequence as a result of heavy clothing, such as one might find in winter, limiting access to scavengers. Accordingly, until research is conducted to determine the precise effect of clothing on decomposition in the local circumstance, consideration must be given to the possible bias the unclothed nature of this study's carcasses may give to the patterns of decomposition, and insect and scavenger activity.

DATA COLLECTION FREQUENCY

As indicated in Chapter 2, the data collection frequency was chosen due to resource and time limitations. It was not arbitrary and was designed using cues from other studies which had done the same for similar reasons. It did, however, yield considerable problems with data integrity and continuity from a statistical processing and analysis perspective, making said processing and analysis challenging, and, in some cases, impossible. While interpolation of missing data using statistical techniques such as linear regression is an accepted practice, it is, of course, not as accurate as the actual values had they been recorded. Additionally, the variable timing with which different cohorts of data were collected prohibited linking them quantitatively, reducing the strength of the statistical conclusions which could be drawn about the roles of different variables in the decomposition ecosystem.

CAGING OF CARCASSES

Another limitation of this study is the caging of the carcasses. As indicated previously, caging was undertaken for a specific reason, in line with standard practice in the literature for this type of research. Traditionally, scavenging has been viewed to be the domain of large vertebrates and obligate carrion-feeding birds with the capacity to strip huge amounts of tissue from carcasses in a short period of time. This can alter not only the rate and pattern of decay, but also the number and diversity of insect species and individuals inhabiting and feeding upon the remains (Gill, 2005; Jeong, Jantz & Smith, 2016). Given the nature of baseline research, it is often deemed prudent to exclude the activity of large scavengers and carrion-feeding birds which may seriously confound results, especially in circumstances where scavenging by large vertebrates isn't common. When this is done, as it has been in this study, it must be acknowledged that the rates and patterns of decay observed may be vastly different had large vertebrates been permitted access to the remains. Accordingly, the results are only applicable to those forensic scenarios where it can be proven they have not been scavenged by large scavengers. This is often done through the identification of well-documented and oft-obvious scavenging artefacts which accompany the feeding activity large vertebrates (e.g. Haglund, Reay & Swindler, 1988). But what happens when the signs of scavenging are not obvious?

The role of small vertebrate scavengers has been under-researched and their role in the decay sequence under-appreciated (Young et al., 2014, 2015; Jeong, Jantz & Smith, 2016; Pokines & Pollock, 2018). Recent research has shown that numerous small vertebrate species implicated in the scavenging of remains do not leave obvious signs of their activity on the remains (e.g. Pokines & Pollock, 2018). The same holds true for the Cape grey mongooses observed in this study. Failure to recognise the activity of small vertebrates may result in a forensic practitioner overestimating the PMI. The margin of overestimation can be wide, as illustrated by the work of Spies, Gibbon & Finaughty (2018b).

The findings of this study, paired with the global potential for small mammal scavenging (and the attendant forensic consequences) to have gone unnoticed, prompt this author to caution researchers on the practice of caging decomposing remains under study. The reasons for caging are acknowledged, but it is proposed that researchers planning future research of the decomposition ecosystem work the potential effects of scavenging into their research designs. This may be accomplished by adapting data collection techniques to maintain successful data collection in spite of the disturbance effect of scavenging or leaving at least one carcass uncaged to determine if there are any small vertebrate scavengers in the ecosystem under study which may need to be studied in greater detail. In doing so, we will be making greater strides towards the collective goal of much of the forensic taphonomic and forensic entomological literature: an improvement of our understanding of the decomposition ecosystem with a view to applying the results in forensic scenarios to aid with case resolution.

WHICH FINDINGS OF THIS STUDY HAVE SIGNIFICANCE IN THE INTERPRETATION OF FORENSIC CASES?

The limitations of the study make it clear that no direct extrapolations may be made from the observations of this study to forensic casework in the Western Cape region. However, several aspects of the study do provide possible explanations for some interesting findings and phenomena from local forensic casework. These include the observations of precocious natural mummification, scavenging by mongooses, and the presence of *Calliphora vicina*. Each is briefly discussed below:

PRECOCIOUS NATURAL MUMMIFICATION

Two forensic cases from the Western Cape have definitively presented with precocious natural mummification. The first, which was analysed prior to attainment of the first summer results of this study, is the strongest evidence of precocious mummification in the Western Cape. The remains were recovered from exposed circumstances outside Stellenbosch, to the east of Cape Town in February 2015, and, as evident in Figure 7.1a, presented with classic signs of mummification, and no evidence of perimortem trauma which may have accelerated the mummification process such as that reported by Marella and colleagues (2013). The remains had been scavenged by canids, but this was confined to the forearms and lower legs. The deceased was subsequently identified and had been missing only 10 days at the time of analysis. A second case, from Clanwilliam, two hours north of Cape Town but still within the Csb climate zone, was recovered in October 2017. This individual was similarly found in exposed circumstances, presenting with classic signs of mummification and no evidence of perimortem trauma (Figure 7.1b). As with the Stellenbosch case, some evidence of canid scavenging was noted, but this was confined to the limbs only. This individual was also subsequently identified and confirmed as having been missing for only 3 weeks at the time of analysis.

The results of this study provide some insight into the possible mechanisms driving such rapid mummification. Specifically, the porcine carcasses which experienced precocious natural mummification did so within similar timeframes to these cases, under similar surface exposure circumstances, lacking significant perimortem trauma, and, in the case of two carcasses, with a degree of scavenging of the remains. The observations from these forensic cases are not dissimilar with those from precociously mummified carcasses in this study, suggesting the proposed mechanism of precocious natural mummification may be at work here. Further research directed at quantifying this process may aid in the prediction of PMI in these types of cases – an especially helpful outcome in situations where the deceased cannot be readily identified.

Figure 7.1: *The mummified remains of a forensic case from the town of Stellenbosch, to the east of Cape Town, recovered in February 2015.*

Figure 7.2: *The mummified remains of a forensic case from town of Clanwilliam, to the north of Cape Town, recovered in December 2017.*

SCAVENGING

A recently published case reported by the author, Mr Spies and Dr Gibbon (Spies, Finaughty & Gibbon, 2018) detailed a local incidence of scavenging of decomposing human remains by a sympatric species to the Cape grey mongoose, the yellow mongoose (*Cynictis penicillata*). This highlights the potential for scavenging by local small vertebrates to be forensically significant. Paired with the results of this study which demonstrate the extent to which mongooses may feed on carrion in the local circumstance, the importance of gaining a comprehensive understanding of the local small mammal scavenging guild and how they may affect the decay process is clear. This requires an ecological approach with a focus on determining each species' behavioural and feeding ecology and if/how this is changed by carrion deposition (Pokines & Pollock, 2018). Once these data are established, moves may be made to developing a model of PMI estimation which includes scavenging by small vertebrates. Until then, it is important for local forensic practitioners to be cognizant of the potential for scavenging and be vigilant for the signs of scavenging, especially for forensic cases recovered from the mongooses' primary habitat.

POTENTIAL FORENSIC SIGNIFICANCE OF *CALLIPHORA VICINA* IN THE WESTERN CAPE

In September 2016 (springtime in South Africa), the author was asked to examine a sample of preserved blow fly larvae taken from a body which had been recovered in an indoor circumstance in Paarl, 50 km to the north-east of Cape Town at the foot of the Boland Mountains. Analysis of the sample indicated it comprised more than 50% third instar *Calliphora vicina* larvae. This represents the first report of *Ca. vicina* being recovered from a forensic circumstance in the Western Cape. This is noteworthy considering that this species had last been reported in the Western Cape almost 40 years ago (Williams and Villet, 2006a). This, paired with the results of this study and the known biology of this species, suggests that *Ca. vicina* may have become forensically significant in the Western Cape. If this is the case, it would confirm Williams' and Villet's (2006a) assertion that *Ca. vicina* may become forensically significant in South Africa. Given that it is apparent this species may be associated with decomposing human remains in the region, it is imperative that it is not overlooked during the investigative process given its evidentiary value. Specifically, the developmental rates of this species are known, and it may thus serve as a valuable indicator of PMI, especially where indoor and urban forensic circumstances are concerned, and particularly in the winter and spring months.

In response to the findings on blow fly directionality, a recommendation for local forensic entomological practice is proposed: Amendt and colleagues (2007) recommended a 360° search area of 2-10 m in diameter from a body for crawling insects and/or puparia. Lewis and Benbow (2011) proposed extending this to 20-25 m. While the rationale behind this is sound, it is argued that this not appropriate for forensic applications in South Africa due to the large amount of time it would take to thoroughly search such an extensive area. To elaborate: forensic entomology was only recently formalised as part of the forensic death investigation in South Africa and is undertaken by the Victim Identification Centre (VIC), a division of the South African Police Service's Forensic Science Laboratory (FSL). It is sparsely staffed with forensic entomologists. At the time of writing, there are only two forensic entomologists working in VIC in the entire country, both based in Gauteng. Consider, then, the caseload faced by these individuals. It would be almost impossible for them to attend each case where forensic entomological services are required, let alone process the cases with due thoroughness. A potential solution to this exists in "outsourcing" the collection of entomological data from crime scenes to SAPS members, or the Forensic Pathology Officers (FPOs) working for the Forensic Pathology Service. The latter makes more sense, given that, under South African law, FPS has legal jurisdiction of the body and its associated evidence on a crime scene. Such evidence could then be delivered to a forensic entomologist for laboratory processing. The author, and his colleague and co-founder of the Cape Forensic Taphonomy and Entomology (CapeFORTE) Laboratory, Dr Marise Heyns, have already implemented this system at several mortuaries in the Western Cape with a reasonable degree of success. However, there is always room for improvement. One of the areas that requires improvement is reducing the amount of time it takes for the FPOs to process the scene for forensic entomological evidence as they already work under time constraints, even without needing to collect entomological evidence. Hence, the protocol proposed by Amendt and colleagues (2007) and Lewis and Benbow (2011) is simply not practical for local implementation. The findings of this research regarding the directionality of maggot migration are valuable in this regard, as they provide an indication of the direction in which the FPOs are most likely to find puparia, thus, greatly reducing search time and increasing chances of successful recovery of puparia for forensic analysis. This, in turn, may yield information on the season in which the remains decomposed if the puparia are identified to be of a species with strong season specificity (e.g. *Calliphora vicina* or *Chrysomya chloropyga*). This could help the SAPS narrow the timeframe for the pool of missing persons, facilitating the identification process for the deceased.

Chapter 8
Conclusion

Post-mortem interval (PMI) determination relies upon knowledge of how the depositional environment has influenced the rate and pattern of decay of the body in question. Given the known biogeographic specificity of decomposition, this knowledge must be locally obtained. Prior to this research, no such knowledge existed for the Western Cape province of South Africa, home to the City of Cape Town – South Africa's second largest city and source of one of the highest numbers of unidentified forensic cases in the country, due, in part, to the highest murder rate in the country.

The aim of this study was to establish baseline data on the rates and processes of soft-tissue decomposition in two terrestrial habitats in the Western Cape, South Africa, with a view to improving our understanding of the local decay process and ultimately facilitate the formulation of more accurate PMI estimates. To accomplish this, 16 porcine carcasses serving as accepted analogues for human bodies were deployed in experimental circumstances during four seasonal cycles (two consecutive winters and summers) between 2014 and 2016. Data were gathered on the prevailing weather conditions, the decomposition of each carcass, and the biotic agents of decay (specifically, the forensically-significant insects and small mammal scavengers). The rates and processes of decomposition were determined via the recording of carcass weight loss over time and scoring the carcasses using Megyesi et al.'s (2005) Total Body Score (TBS) system. The size and composition of the attendant forensically-significant insect population on each carcass was tracked over the course of the decomposition sequence. Small mammal scavenging activity was monitored via remote-triggered infrared wildlife trail cameras ("camera traps"), primarily in the CFDS/C habitat, and documentation of the patterns of carcass destruction. Each cohort of data, with the exception of the small mammal scavenging data, was statistically analysed to determine if differences exist between seasons and/or habitats with respect to the measured variables, and, if so, by what magnitude they differed. Carcass biographic measures were also assessed for any significant differences with respect to season and habitat of deployment which might serve as confounders when testing other measures.

It was found that carcasses decomposed twice as fast in summer compared to winter, with the onset of skeletonisation within 2-3 months in summer, and 3-5 months when decomposition took place in winter. The carcasses followed the expected gross pattern of decay accounted in the international literature, with one important difference: during decomposition sequences in summer trials, five carcasses underwent precocious natural mummification via desiccation, with the remains mummifying in under 30 days. With two local forensic cases presenting with the same extent of mummification in similar timeframes, it is possible that the proposed mechanism of precocious natural mummification is indeed at work in the local circumstance. This is an important avenue for future research, where quantification of this process may lead to considerably more accurate PMI estimates for similarly-preserved forensic cases, not only in the local circumstance, but anywhere this phenomenon is suspected or observed.

The insect assemblage associated with the decay of carcasses in the habitats under study was found to be largely similar to that first documented in the province four decades previously, with two exceptions: the absence of the blow flies *Chrysomya megacephala* and *Calliphora croceipalpis*, and, more importantly, the considerably increased attendance by the invasive European blow fly *Calliphora vicina*. The latter has recently been recovered from decomposing human remains in the region, suggesting that *Ca. vicina* may have attained forensically significant status in the Western Cape (and thus South Africa). It is imperative that this species be looked at more closely, not only to determine the extent of its occurrence in local forensic scenarios (for confirmation of its local forensic significance), but also to establish regionally-specific developmental data to enable the use of this species for PMI estimation. Additionally, this study established the first occurrence matrices for forensically-significant insect species in the local circumstance, and their utility in local forensic investigations must be validated going forward. Another finding which may prove useful in local forensic practice is the westerly directionality observed in migrating blow fly larvae. This knowledge may facilitate the rapid recovery of blow fly pupae and pupa casings at forensic scenes, an especially helpful improvement to current local forensic practice where the high case load demands efficient scene processing.

The most unexpected finding of this study was extensive scavenging of carrion by Cape grey mongoose (*Galerella pulverulenta*). This species was documented to spend large quantities of time feeding on carcasses, effecting extensive destruction of the remains and accelerating the expected rate of decay in shaded (heavily vegetated) circumstances. These observations of its feeding ecology are new to science and highlight the extent to which a carnivore may opportunistically exploit a local carrion resource. The discovery of scavenging by a sympatric species (yellow mongoose [*Cynictis penicillata*]) in a recent (2017) local forensic case suggests that scavenging by small vertebrates may be forensically significant in the region. Given the ubiquity of mongooses in the Western Cape, these findings emphasise the importance of local forensic practitioners considering the possibility of scavenging by these species when formulating PMI estimates, especially where remains have been recovered from heavily vegetated circumstances. They also emphasise the importance of carefully considering the exclusion of any variables which may influence the rate of decay in the designs of experiments with forensic taphonomic and/or forensic entomological goals, especially those seeking to establish baseline data on the local rates and processes of decay for medicolegal use.

This study was undertaken in response to the urgent need to help the South African Forensic Pathology Service and South African Police Service address the pressing problem of high numbers of victims of crime remaining unidentified. Among the main contributors to this problem is the frequent lack of comparative antemortem data. The PMI stands as one of the valuable pieces of information which may help facilitate identification in these cases. The findings of this study have demonstrably achieved the aims and objectives set forth at the outset and considerably improved our understanding of the local decomposition ecosystem. New knowledge in multiple disciplines has been contributed to science, and the results of the study have provided some valuable insight into observations and phenomena in local forensic practice. Moving forward, the results of this study require validation through prospective forensic casework paired with further research on specific aspects of the decomposition ecosystem. These include investigations into the behavioural and feeding ecology of mongoose scavengers in the Western Cape, the mechanism(s) driving precocious natural mummification, and the processes mediating blow fly larval migratory directionality. In the pursuit of research cost reduction and improved data robusticity and comprehensiveness, the automation of data collection in future forensic taphonomic and forensic entomological research will be implemented. Each of these, in turn, has the potential to further improve our understanding of the decomposition ecosystem, facilitating ever-more accurate PMI estimates which may help identify those who might otherwise be lost to history.

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Appendix A2.1: Raw data for vegetation survey

				Relative representation (%)
Site Number	CFDS/O-1			
Date	2013/10/16	**% Cover indigenous**	11	22.2
Total Vegetation Cover (%)	49.6	**% Cover alien**	38.6	77.8
Bare Ground (%)	50.4	**Total**	49.6	

No.	Working Name	Genus & Species	Growth Form	Indigenous/Alien	Percentage Cover (%)	Specimen No.
1	Sour Fig	*Carpobrotus edulis*	Herbaceous	Indigenous	2	N/A
2	Grasses	Poaceae	Herbaceous	Alien	35	N/A
3	Spurge	*Euphorbia helioscopia*	Herbaceous	Alien	3	N/A
4	Daisy	*Trichogyne repens*	Shrub	Indigenous	0.5	4
5	Plantain	*Plantago lanceolata*	Herbaceous	Alien	0.5	N/A
6	Thistle	*Sonchus oleraceus*	Herbaceous	Alien	0.1	10
7	Figwort	*Zaluzanianskya villosa*	Herbaceous	Indigenous	0.5	13
8	False-Slugwort	*Dischisma ciliatum*	Shrub	Indigenous	3	11
9	Tetrogonia	*Tetragonia* spp.	Shrub	Indigenous	0.5	12
10	Sedges	Cyperaceae	Shrub	Indigenous	2	N/A
11	Manulea	*Manulea tomentosa*	Herbaceous	Indigenous	0.5	9
12	Geranium	*Geranium purpureum*	Herbaceous	Indigenous	1	3
13	Branched Onion Weed	*Trachyandra divaricata*	Geophyte	Indigenous	1	N/A

				Relative representation (%)
Site Number	CFDS/O-2			
Date	2013/10/16	**% Cover indigenous**	11.4	45.8
Total Vegetation Cover (%)	24.9	**% Cover alien**	13.5	54.2
Bare Ground (%)	75.1	**Total**	24.9	

No.	Working Name	Genus & Species	Growth Form	Indigenous/Alien	Percentage Cover (%)	Specimen No.
1	Grasses	Poaceae	Herbaceous	Alien	10	N/A
2	Plantain	*Plantago lanceolata*	Herbaceous	Alien	1	N/A
3	Spurge	*Euphorbia helioscopia*	Herbaceous	Alien	0.5	N/A
4	Rose Geranium	*Pelargonium capitatum*	Herbaceous	Indigenous	0.5	1
5	*Rooikrans*	*Acacia cyclops*	Tree	Alien	1	N/A
6	*Port Jackson*	*Acacia saligna*	Tree	Alien	1	N/A
7	White Bristle Bush	*Metalasia muricata*	Shrub	Indigenous	2	2
8	Geraniums	*Geranium purpurea*	Herbaceous	Indigenous	0.5	3
9	Branched Onion Weed	*Trachyandra divaricata*	Geophyte	Indigenous	0.1	N/A
10	Daisy	*Trichogyne repens*	Shrub	Indigenous	2	4
11	Tortoise Berry	*Nylantia spinosa*	Shrub	Indigenous	0.1	N/A
12	Tick Berry	*Chrysanthemoides monilifera*	Shrub	Indigenous	0.1	N/A
13	Restios	Restionaceae	Shrub	Indigenous	1	N/A
14	Swawelbos	*Otholobium bracteolatum*	Shrub	Indigenous	2	5
15	Tangle Strawflower	*Helichrysum asperum*	Shrub	Indigenous	2	6
16	Heathleaf Capegorse	*Aspalathus ericifolia*	Shrub	Indigenous	0.5	7
17	Sandalwood	*Thesium densiflorum*	Shrub	Indigenous	0.5	8
18	Manulea	*Manulea tomentosa*	Herbaceous	Indigenous	0.1	9

				Relative representation (%)
Site Number	CFDS/C-1			
Date	2013/10/16	**% Cover indigenous**	4.5	4.7
Total Vegetation Cover (%)	96	**% Cover alien**	91.5	95.3
Bare Ground (%)	4	**Total**	96	

No.	Working Name	Genus & Species	Growth Form	Indigenous/Alien	Percentage Cover (%)	Specimen No.
1	Rooikrans	*Acacia cyclops*	Tree	Alien	60	N/A
2	Stinging nettle	*Urtica urens*	Herbaceous	Alien	2	N/A
3	Spurge	*Euphorbia helioscopia*	Herbaceous	Alien	5	N/A
4	Milkweed	*Euphorbia peplus*	Herbaceous	Alien	8	N/A
5	Spurge	*Euphorbia pubescens*	Herbaceous	Alien	2.5	N/A
6	Tick Berry	*Chrysanthemoides monilifera*	Shrub	Indigenous	0.5	N/A
7	Grasses	Poaceae	Herbaceous	Alien	4	N/A
8	Mustards	*Brassica tournefortii*	Herbaceous	Alien	2	14
9	Geranium	*Geranium incanum*	Herbaceous	Indigenous	1	15
10	Mustards	*Brassica* hybrid	Herbaceous	Alien	2	16
11	French mallow	*Malva nicaeensis*	Shrub	Alien	1	N/A
12	Hairy bittercress	*Cardamine hirsuta*	Herbaceous	Alien	1	N/A
13	Ragwort	*Senecio burchellii*	Herbaceous	Indigenous	1	N/A
14	Ragwort	*Senecio polyanthemoides*	Herbaceous	Indigenous	2	N/A
15	Loosestrifes	*Lythrum* spp.	Herbaceous	Alien	4	18

				Relative representation (%)
Site Number	CFDS/C-2			
Date	2013/10/16	**% Cover indigenous**	4.2	4.65
Total Vegetation Cover (%)	90.3	**% Cover alien**	86.1	95.35
Bare Ground (%)	9.7	**Total**	90.3	

No.	Working Name	Genus & Species	Growth Form	Indigenous/Alien	Percentage Cover (%)	Specimen No.
1	Rooikrans	*Acacia cyclops*	Tree	Alien	75	N/A
2	Geranium	*Geranium purpurea*	Herbaceous	Alien	1	15
3	Grasses	Poaceae	Herbaceous	Alien	3	N/A
4	Stinging nettle	*Urticia urens*	Herbaceous	Alien	1	N/A
5	Loosestrifes	*Lythrum spp.*	Herbaceous	Alien	2	18
6	Rhuses	*Rhus glauca*	Shrub	Indigenous	2	N/A
7	Arum lilies	*Zantedeschia aethiopica*	Herbaceous	Indigenous	0.5	N/A
8	Sedges	Cyperaceae	Herbaceous	Indigenous	0.5	N/A
9	Spurges	*Euphorbia helioscopia*	Herbaceous	Alien	3	N/A
10	Tick Berry	*Chrysanthemoides monilifera*	Shrub	Indigenous	1	N/A
11	African buckhorn	*Cynanchum africanum*	Climber	Indigenous	0.1	N/A
12	Cobra lilies	*Chasmanthe aethiopica*	Herbaceous	Indigenous	0.1	N/A
13	Bristly ox-tongue	*Helminthotheca echioides*	Herbaceous	Alien	0.1	16
14	Chickweed	*Stellaria media*	Herbaceous	Alien	1	19

CONFIRMATION OF DEATH CHECKLIST

Pig Number: ________ **Date:** ______________________ **Time:** _____:_____

Location: ____

Death confirmed by:

☐ Animal Cyanotic

☐ No respiratory movements

☐ No detectable heartbeat

☐ No corneal response

Euthanasia agent: ☐ Free Bullet ☐ Captive Bolt

Euthanized by: ____

Time between death and deployment: _____________________

Rigor Mortis: ☐ Present ☐ Absent

Signed: ____

UNIVERSITY OF CAPE TOWN

Health Sciences Faculty
Research Ethics Committee
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10 March 2014

AEC REF NO: 014/004

Prof A Morris
Human Biology
Anatomy Building

Dear Prof Morris

PROJECT TITLE: WESTERN CAPE TERRESTRIAL DECOMPOSITION STUDIES OF PIGS

Thank you for submitting your study to the Faculty of Health Sciences Animal Ethics Committee for review.

It is a pleasure to inform you that the FHS AEC has authorised your study specifically for the use of 24 pigs for the period of three years.

Please note that the first annual progress report is due in March 2015.

Please quote the REC REF in all your correspondence

Yours sincerely

P.J. Commerford

PROF PJ COMMERFORD
CHAIR, HSF AEC

lemjedi

UNIVERSITY OF CAPE TOWN

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30 October 2014

Prof AG Morris
Human Biology
Anatomy Building

Dear Prof Morris

PROTOCOL TITLE: WESTERN CAPE TERRESTRIAL DECOMPOSITION STUDIES OF PIGS.

FHS AEC REF NO: 014/004

Thank you for submitting your amendment to the Faculty of Health Sciences (FHS) Animal Ethics Committee (AEC) for review

I am pleased to inform you that the FHS AEC has **authorised** the following amendments to the above mentioned study:

- Increase in number of animals to be used from 24 to 36 (specifically, terrestrial decomposition expanding from 8 to 20)

A Form for amendment (version October 2014) is also available at
http://www.health.uct.ac.za/fhs/research/animalethics/forms
Yearly progress report submitted to the ethics office is a requirement for on-going approval of studies.
Notification of study closure is a requirement.
Ethics authorisation letter and copy of the application form to be submitted to the Animal Unit when commencing the study for release of animals.
The principal investigator has to:
Ensuring that all study participants perform within the confines of the procedures and experimental design of the protocol as authorised, or as amended.
Ensuring that all study participants comply with all applicable national legislation, UCT policies, FHS AEC policies and standard operating procedures (SOPs) and national standards (SANS 10386: 2008).
Ensuring that you as the PI (principal investigator) immediately alert the FHS AEC to any event involving the welfare of the animals which has occurred during the course of the study, as well as the actions that were taken to respond to these events.

N tsama

Ensuring that you as the PI (principal investigator) alert the FHS AEC to any new or unexpected ethical issues that arose during the course of the study, and how these issues were addressed.
Ensuring that all study participants are registered with or have been authorised by the South African Veterinary Council (SAVC) to perform the procedures on animals, or will be performing the procedures under the direct and continuous supervision of SAVC-registered veterinary professionals or SAVC-registered para-veterinary professionals.
If the principal investigator or any study participant is in any way uncertain how to respond to any of these obligations or deal with any of the issues referred to above, they must consult with FHS AEC.
All animals found dead must be reported to the RAF on the appropriate form:
http://www.health.uct.ac.za/fhs/research/animalethics/forms
All animals found in distress must be reported to the RAF on the appropriate form.

Please quote the REC. REF in all your correspondence

Yours sincerely

PROF PJ COMMERFORD
CHAIR, FHS AEC

N tsama

Appendix A2.5 – *Data Collection Protocol*

Data to be entered onto data collection forms 1A – 1C (see **Appendix A2.7**)
1A = Decomposition Data; 1B = Decomposition Process (ADD scoring table); 1C = Entomology

INTRODUCTION

There are 5 stages of the data collection protocol:

1. Visual observations of carcass and surrounds (*including photographs*);
2. Recording of insect activity on carcass and completion of Accumulated Degree Days (ADD) scoring form.
3. Weighing of carcass and recording of any additional insect activity from beneath carcass.
4. Collection of insect specimens from carcass and surrounds (see **Appendix A2.6**).
5. Collection of meteorological data at site.

DETAILED STAGE PROTOCOLS

STAGE 1 – VISUAL OBSERVATIONS

1. Photograph scene as it is approached (*from far to near*), when applicable (e.g. when immature flies have emerged).
2. Conduct visual survey of carcass and surrounds, noting the following:
   I. Time of day;
   II. Prevailing weather conditions;
   III. Physical appearance of carcass, including changes from previous site visitation;
   IV. Insect activity, comprising the following:
      i. Species present (making special note of any new species not previously observed);
      ii. Locations of individuals/concentrations/masses on *and* around the carcass;
      iii. Life stages (i.e. eggs, larvae, instar *[where applicable]*, pupae, immature adults, adults);
      iv. Fly oviposition activity (active egg-laying, location and size of new egg masses, and status of previously noted egg masses [i.e. hatched/unhatched]);
      v. Maggot migration activity *(when applicable)*;

vi. Immature adult fly emergence activity *(when applicable)*.

3. Take two standard photographs of the carcass:
    I. Whole carcass viewed from directly overhead;
    II. Close-up of head/neck region.
4. Take close-up photographs of any noteworthy features (e.g. prominent/characteristic signs of decomposition stage, lesions to the carcass caused by small mammal scavenging).
5. Take macro photographs of any new insect species not previously observed.

Stage 2 – Insect activity (I) & ADD

1. Draw in insect activity on carcass diagram (**Form 1A**), indicating different insect groups and carcass features with different colours.
2. Record species present and their respective abundances (**Form 1C**).
3. Score decomposition state by completing ADD scoring table (**Form 1B**).

Stage 4 – Carcass weight & insect activity (II)

1. Measure and record the weight of the carcass (**Form 1A**) as follows:
    i. Erect the collapsible tripod over the cage;
    ii. Attach the one-ton block and tackle to the apex of the tripod;
    iii. Attach the 150kg hanging scale to the block and tackle;
    iv. Attach the four weighing cables to the corresponding four attachment points on the grid upon which the carcass is resting, and attach the cables' meeting point to the hanging scale;
    v. Raise the grid – with the carcass on it – a few centimetres above the ground to enable recording of the carcass' weight and assessment of insect population beneath the carcass (see point 2 below).
2. Record any additional insect activity from beneath carcass, drawing it in on the carcass diagram (**Form 1A**) and recording species present and their respective abundances (**Form 1C**).

Stage 5 – Insect specimen collection

Sample attendant insect population per the insect sampling protocol (**Appendix A2.6**).

Stage 6 – Meteorological data

Weather station data to be downloaded once every 30 days.

Appendix A2.6 – Insect Sampling Protocol

Adapted from Byrd (2015)

INTRODUCTION

There are 3 stages of the insect sampling protocol:

1. Visual observations of carcass (*including photographs*);
2. Collection of insect specimens from carcass;
3. Collection of insect specimens from surrounding environment (***6-10 m from carcass**, including flying insects*).

DETAILED STAGE PROTOCOLS

STAGE 1 – VISUAL OBSERVATIONS

(As detailed as a sub-protocol in points 1, 2IV, and 3 of the section **Stage 1 –Visual observations** *of Appendix A2.5)*

1. Photograph scene as it is approached (*from far to near*), when applicable (e.g. when immature flies have emerged);
2. Describe the insect assemblage present upon arrival at scene. Note the following:
    i. Species present (making special note of any new species not previously observed);
    ii. Locations of individuals/concentrations/masses on *and* around the carcass;
    iii. Estimated abundance;
    iv. Life stages (i.e. eggs, larvae, instar *[where applicable]*, pupae, immature adults, adults);
    v. Fly oviposition activity (active egg-laying, location and size of new egg masses, and status of previously noted egg masses [i.e. hatched/unhatched]);
    vi. Maggot migration activity *(when applicable)*;
    vii. Immature adult fly emergence activity *(when applicable)*.
3. Photograph colonized body (*including close-ups of head and macro photos of specific insects and maggot masses*).

STAGE 2 & 3 – CARCASS & SURROUNDING ENVIRONMENT INSECT SAMPLING

Adult Insects *(new species only)*

1. Aerial netting of flies
   - Sweep area above and around carcass several times to collect fly specimens;
   - Place in euthanasia jars prepared with ethyl-acetate as a euthanasia agent;
   - Place euthanised flies in specimen vials with 70% ethanol.
2. Collect adult beetles with forceps. Euthanise and preserve in like manner to flies above.

NOTE: Collect a representative sample of each kind of adult insect seen. For flies, *20-30* specimens should be collected of each type, and *10-15* adult beetles for each species found. Label and store each species separately. Do not mix flies and beetles.

Insect Larvae

3. Collect fly & beetle larvae (maggots & grubs respectively – **DO NOT MIX!**)
   a. Fly Larvae (maggots)
      - Collect two representative samples based on mass size:
        1) Sample for preservation:
           - Place specimens in boiling water until body relaxes;
           - Place in 70% ethanol
        2) Sample for live rearing:
           - Place feeding medium in prepared live jar (beef/chicken liver & few drops of water);
           - Place live maggots in jar & seal;
           - Place live rearing jar in incubator and grow maggots to adults.

   b. Beetle Larvae (grubs) *(new species only)*
      - Collect a representative sample (10-15 of each species);
      - Preserve specimens by placing in 70% ethanol.

NOTE: Repeat above for surrounding environment sampling within a radius of 6-10m from the body.

Form 1A: Decomposition Data

Date: Site: Time:

Notes: ____

____

____

____

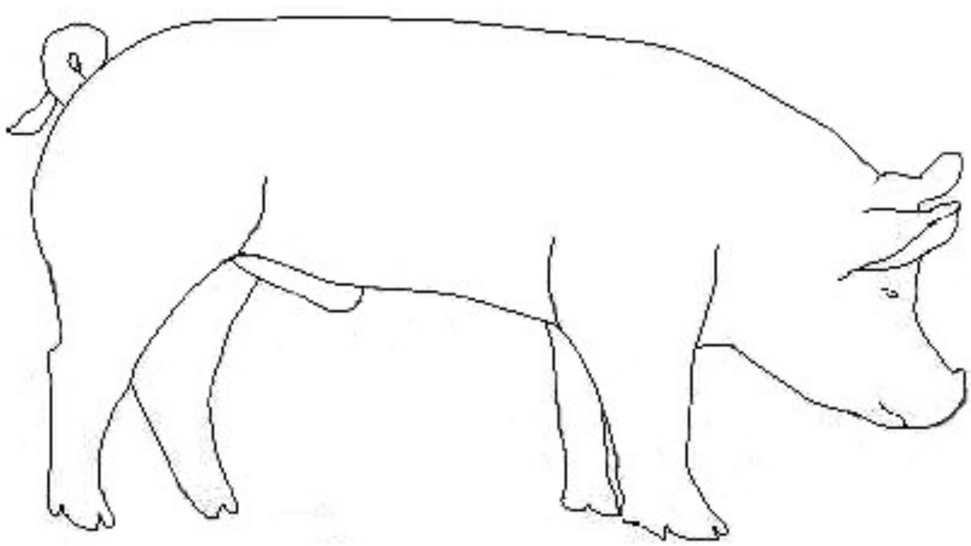
____

Decomposition Rate:

Carcass weight (kg): __________

Carcass Diagram:

- [ ] Fly concentrations
- [ ] Grub concentrations
- [ ] Maggot masses
- [ ] Beetle concentrations



Date/Time: ____________________

Total Body Score (TBS)			
1.	2.	3.	**T.**

Form 1B: Decomposition Process

Table 1—*Categories and stages of decomposition for the* ***head & neck***

A. Fresh
(1pt) 1. Fresh, no discolouration.

B. Early Decomposition
(2pts) 1. Pink-white appearance with skin slippage and some hair loss.
(3pts) 2. Grey to green discolouration: some flesh still relatively fresh.
(4pts) 3. Discolouration and/or brownish shades particularly at edges, drying of nose, ears and lips.
(5pts) 4. Purging of decompositional fluids out of eyes, ears, nose, mouth, some bloating of neck and face may be present.
(6pts) 5. Brown to black discolouration of flesh.

C. Advanced Decomposition
(7pts) 1. Caving in of the flesh and tissues of eyes and throat.
(8pts) 2. Moist decomposition with bone exposure less than one half that of the area being scored.
(9pts) 3. Mummification with bone exposure less than one half that of the area being scored.

D. Skeletonisation
(10pts) 1. Bone exposure of more than half of the area being scored with greasy substances and decomposed tissue.
(11pts) 2. Bone exposure of more than half the area being scored with desiccated or mummified tissue.
(12pts) 3. Bones largely dry, but retaining some grease.
(13pts) 4. Dry bone.

Table 2—*Categories and stages of decomposition for the* ***trunk***

A. Fresh
(1pt) 1. Fresh, no discolouration.

B. Early Decomposition
(2pts) 1. Pink-white appearance with skin slippage and marbling present.
(3pts) 2. Grey to green discolouration: some flesh still relatively fresh.
(4pts) 3. Bloating with green discolouration and purging of decompositional fluids.
(5pts) 4. Post-bloating following release of the abdominal gases, with discolouration changing from green to black.

C. Advanced Decomposition
(6pts) 1. Decomposition of tissue producing sagging of flesh; caving in of the abdominal cavity.
(7pts) 2. Moist decomposition with bone exposure less than one half that of the area being scored.
(8pts) 3. Mummification with bone exposure less than one half that of the area being scored.

D. Skeletonisation
(9pts) 1. Bones with decomposed tissue, sometimes with body fluids and grease still present.
(10pts) 2. Bones with desiccated or mummified tissue covering less than one half of the area being scored.
(11pts) 3. Bones largely dry, but retaining some grease.
(12pts) 4. Dry bone.

Table 3—*Categories and stages of decomposition for the* ***limbs***

A. Fresh
(1pt) 1. Fresh, no discolouration.

B. Early Decomposition
(2pts) 1. Pink-white appearance with skin slippage of hands and/or feet.
(3pts) 2. Grey to green discolouration; marbling; some flesh still relatively fresh.
(4pts) 3. Discolouration and/or brownish shades particularly at edges, drying of fingers, toes, and other projecting extremities.
(5pts) 4. Brown to black discolouration, skin having a leathery appearance.

C. Advanced Decomposition
(6pts) 1. Moist decomposition with bone exposure less than one half that of the area being scored.
(7pts) 2. Mummification with bone exposure less than one half that of the area being scored.

D. Skeletonisation
(8pts) 1. Bone exposure over one half the area being scored, some decomposed tissue and fluids remaining.
(9pts) 3. Bones largely dry, but retaining some grease.
(10pts) 4. Dry bone.

Form 1C: Entomology

Diptera			
1. *Chrysomya albiceps*  Present ☐ Absent ☐ Abundance: ☐ ☐ ☐ ☐ ☐ 0-5 5-20 20-50 50-100 >100	2. *Chrysomya chloropyga*  Present ☐ Absent ☐ Abundance: ☐ ☐ ☐ ☐ ☐ 0-5 5-20 20-50 50-100 >100	3. *Chrysomya marginalis*  Present ☐ Absent ☐ Abundance: ☐ ☐ ☐ ☐ ☐ 0-5 5-20 20-50 50-100 >100	4. *Lucilia* sp.  Present ☐ Absent ☐ Abundance: ☐ ☐ ☐ ☐ ☐ 0-5 5-20 20-50 50-100 >100
5. *Calliphora vicina*  Present ☐ Absent ☐ Abundance: ☐ ☐ ☐ ☐ ☐ 0-5 5-20 20-50 50-100 >100	6. Muscidae  Present ☐ Absent ☐ Abundance: ☐ ☐ ☐ ☐ ☐ 0-5 5-20 20-50 50-100 >100	7. Sarcophagidae  Present ☐ Absent ☐ Abundance: ☐ ☐ ☐ ☐ ☐ 0-5 5-20 20-50 50-100 >100	8. Piophilidae  Present ☐ Absent ☐ Abundance: ☐ ☐ ☐ ☐ ☐ 0-5 5-20 20-50 50-100 >100

Coleoptera			
9. Cleridae (*Necrobia rufipes*)  Present ☐ Absent ☐ Abundance: ☐ ☐ ☐ ☐ ☐ 0-5 5-20 20-50 50-100 >100	10. Dermestidae (Adults) (*Dermestes maculatus*)  Present ☐ Absent ☐ Abundance: ☐ ☐ ☐ ☐ ☐ 0-5 5-20 20-50 50-100 >100	11. Dermestidae (Larvae) (*Dermestes maculatus*)  Present ☐ Absent ☐ Abundance: ☐ ☐ ☐ ☐ ☐ 0-5 5-20 20-50 50-100 >100	12. Histeridae  Present ☐ Absent ☐ Abundance: ☐ ☐ ☐ ☐ ☐ 0-5 5-20 20-50 50-100 >100
13. Scarabaeidae (Dung beetles)  Present ☐ Absent ☐ Abundance: ☐ ☐ ☐ ☐ ☐ 0-5 5-20 20-50 50-100 >100	14. Silphidae (Adults)  Present ☐ Absent ☐ Abundance: ☐ ☐ ☐ ☐ ☐ 0-5 5-20 20-50 50-100 >100	15. Silphidae (Larvae)  Present ☐ Absent ☐ Abundance: ☐ ☐ ☐ ☐ ☐ 0-5 5-20 20-50 50-100 >100	16. Trogidae  Present ☐ Absent ☐ Abundance: ☐ ☐ ☐ ☐ ☐ 0-5 5-20 20-50 50-100 >100

Appendix A3.1: Statistical outputs for Kruskal Wallis tests of differences between weather variable measures with respect to habitat and season of deployment, and habitats within-season.

Table A3.1.1: Kruskal Wallis test outputs for statistically significant differences between habitats with respect to weather variables.

	Habitat	Median value	Kruskal-Wallis H	df	Asymp. Sig.
Maximum Temperature (24h) (°C)	CFDS/O	24.15	2.472	1	0.116
	CFDS/C	23.50			
Minimum Temperature (24h) (°C)	CFDS/O	11.10	33.009	1	0.000
	CFDS/C	12.40			
Mode Temperature (24h) (°C)	CFDS/O	15.20	4.010	1	0.045
	CFDS/C	14.70			
Mean Temperature (24h) (°C)	CFDS/O	17.16	0.508	1	0.476
	CFDS/C	17.22			
Maximum Temperature (Daytime) (°C)	CFDS/O	24.15	2.524	1	0.112
	CFDS/C	23.50			
Minimum Temperature (Daytime) (°C)	CFDS/O	13.25	0.108	1	0.742
	CFDS/C	13.38			
Mode Temperature (Daytime) (°C)	CFDS/O	22.75	0.763	1	0.383
	CFDS/C	22.13			
Mean Temperature (Daytime) (°C)	CFDS/O	20.64	7.626	1	0.006
	CFDS/C	19.92			
Maximum Temperature (Nighttime) (°C)	CFDS/O	18.60	0.014	1	0.906
	CFDS/C	18.60			
Minimum Temperature (Nighttime) (°C)	CFDS/O	11.10	33.867	1	0.000
	CFDS/C	12.40			
Mode Temperature (Nighttime) (°C)	CFDS/O	14.05	0.204	1	0.652
	CFDS/C	14.10			
Mean Temperature (Nighttime) (°C)	CFDS/O	14.21	10.282	1	0.001
	CFDS/C	14.75			
Mean Humidity (24h) (%)	CFDS/O	75.95	8.067	1	0.005
	CFDS/C	76.71			
Mean Humidity (Daytime) (%)	CFDS/O	64.84	42.735	1	0.000
	CFDS/C	68.52			
Mean Humidity (Nighttime) (%)	CFDS/O	85.79	0.782	1	0.377
	CFDS/C	85.30			
Total Rainfall (24h) (mm)	CFDS/O	0.00	25.830	1	0.000
	CFDS/C	0.00			
Total Rainfall (Daytime) (mm)	CFDS/O	0.00	6.205	1	0.013
	CFDS/C	0.00			
Total Rainfall (Nighttime) (mm)	CFDS/O	0.00	36.364	1	0.000
	CFDS/C	0.00			
Mean Daily Solar Radiation (W.m^{-2})	CFDS/O	479.12	1179.973	1	0.000
	CFDS/C	46.63			
Mean Wind Speed (24h) (km.h^{-1})	CFDS/O	5.81	1112.431	1	0.000
	CFDS/C	0.90			
Mean Wind Speed (Daytime) (km.h^{-1})	CFDS/O	7.60	1157.189	1	0.000
	CFDS/C	1.32			
Mean Wind Speed (Nighttime) (km.h^{-1})	CFDS/O	3.93	914.897	1	0.000
	CFDS/C	0.45			

a. Kruskal Wallis Test; significant differences denoted by red highlighting (p < 0.05).

b. Grouping Variable: Habitat

Table A3.1.2: Kruskal Wallis test outputs for statistically significant differences between seasons with respect to weather variables.

	Season	Median value	Kruskal-Wallis H	df	Asymp. Sig.
Maximum Temperature (24h) (°C)	Winter	20.15	616.471	1	0.000
	Summer	27.20			
Minimum Temperature (24h) (°C)	Winter	9.90	690.422	1	0.000
	Summer	15.70			
Mode Temperature (24h) (°C)	Winter	13.10	651.949	1	0.000
	Summer	18.35			
Mean Temperature (24h) (°C)	Winter	14.67	917.762	1	0.000
	Summer	20.87			
Maximum Temperature (Daytime) (°C)	Winter	20.15	615.479	1	0.000
	Summer	27.20			
Minimum Temperature (Daytime) (°C)	Winter	11.80	720.852	1	0.000
	Summer	16.90			
Mode Temperature (Daytime) (°C)	Winter	18.86	592.141	1	0.000
	Summer	26.10			
Mean Temperature (Daytime) (°C)	Winter	17.10	767.054	1	0.000
	Summer	23.69			
Maximum Temperature (Nighttime) (°C)	Winter	16.20	828.554	1	0.000
	Summer	21.30			
Minimum Temperature (Nighttime) (°C)	Winter	9.90	691.837	1	0.000
	Summer	15.70			
Mode Temperature (Nighttime) (°C)	Winter	12.40	797.797	1	0.000
	Summer	18.00			
Mean Temperature (Nighttime) (°C)	Winter	12.77	952.385	1	0.000
	Summer	18.13			
Mean Humidity (24h) (%)	Winter	79.62	268.335	1	0.000
	Summer	72.67			
Mean Humidity (Daytime) (%)	Winter	70.33	194.383	1	0.000
	Summer	62.87			
Mean Humidity (Nighttime) (%)	Winter	87.40	199.848	1	0.000
	Summer	82.19			
Total Rainfall (24h) (mm)	Winter	0.00	31.715	1	0.000
	Summer	0.00			
Total Rainfall (Daytime) (mm)	Winter	0.00	11.852	1	0.001
	Summer	0.00			
Total Rainfall (Nighttime) (mm)	Winter	0.00	48.444	1	0.000
	Summer	0.00			
Mean Daily Solar Radiation (W.m^{-2})	Winter	80.23	129.631	1	0.000
	Summer	149.95			
Mean Wind Speed (24h) (km.h^{-1})	Winter	2.27	32.867	1	0.000
	Summer	2.97			
Mean Wind Speed (Daytime) (km.h^{-1})	Winter	3.12	38.259	1	0.000
	Summer	4.01			
Mean Wind Speed (Nighttime) (km.h^{-1})	Winter	1.38	6.668	1	0.010
	Summer	1.60			

a. Kruskal Wallis Test; significant differences denoted by red highlighting (p < 0.05).

b. Grouping Variable: Habitat

Table A3.1.3: Kruskal Wallis test outputs for statistically significant differences between habitats within-season with respect to weather variables.

	Habitat	Winter				Summer			
		Median value	Kruskal-Wallis H	df	Asymp. Sig.	Median value	Kruskal-Wallis H	df	Asymp. Sig.
Maximum Temperature (24h) (°C)	CFDS/O	20.50	2.088	1	0.149	27.40	2.726	1	0.099
	CFDS/C	19.96				26.80			
Minimum Temperature (24h) (°C)	CFDS/O	9.05	36.594	1	0.000	15.20	18.624	1	0.000
	CFDS/C	10.55				16.30			
Mode Temperature (24h) (°C)	CFDS/O	13.10	1.460	1	0.227	18.70	6.598	1	0.010
	CFDS/C	13.05				18.00			
Mean Temperature (24h) (°C)	CFDS/O	14.55	1.680	1	0.195	20.88	0.004	1	0.951
	CFDS/C	14.78				20.82			
Maximum Temperature (Daytime) (°C)	CFDS/O	20.50	2.123	1	0.145	27.40	2.732	1	0.098
	CFDS/C	19.96				26.80			
Minimum Temperature (Daytime) (°C)	CFDS/O	11.80	0.561	1	0.454	17.10	5.131	1	0.023
	CFDS/C	11.90				16.70			
Mode Temperature (Daytime) (°C)	CFDS/O	18.90	0.152	1	0.697	26.20	1.070	1	0.301
	CFDS/C	18.86				25.85			
Mean Temperature (Daytime) (°C)	CFDS/O	17.46	4.047	1	0.044	24.11	14.015	1	0.000
	CFDS/C	16.95				23.31			
Maximum Temperature (Nighttime) (°C)	CFDS/O	16.10	0.454	1	0.501	21.40	0.291	1	0.589
	CFDS/C	16.20				21.30			
Minimum Temperature (Nighttime) (°C)	CFDS/O	9.05	37.209	1	0.000	15.20	19.607	1	0.000
	CFDS/C	10.60				16.30			
Mode Temperature (Nighttime) (°C)	CFDS/O	12.40	0.056	1	0.813	17.90	0.364	1	0.546
	CFDS/C	12.28				18.20			
Mean Temperature (Nighttime) (°C)	CFDS/O	12.46	14.942	1	0.000	17.92	8.070	1	0.004
	CFDS/C	13.05				18.29			
Mean Humidity (24h) (%)	CFDS/O	78.75	9.430	1	0.002	72.38	1.335	1	0.248
	CFDS/C	80.44				73.01			
Mean Humidity (Daytime) (%)	CFDS/O	68.47	28.662	1	0.000	61.22	22.355	1	0.000
	CFDS/C	72.22				64.83			
Mean Humidity (Nighttime) (%)	CFDS/O	87.44	0.028	1	0.867	82.73	3.721	1	0.054
	CFDS/C	87.37				81.72			
Total Rainfall (24h) (mm)	CFDS/O	0.00	14.107	1	0.000	0.00	13.992	1	0.000
	CFDS/C	0.00				0.00			
Total Rainfall (Daytime) (mm)	CFDS/O	0.00	2.400	1	0.121	0.00	5.260	1	0.022
	CFDS/C	0.00				0.00			
Total Rainfall (Nighttime) (mm)	CFDS/O	0.00	27.462	1	0.000	0.00	9.469	1	0.002
	CFDS/C	0.00				0.00			
Mean Daily Solar Radiation (W.m^{-2})	CFDS/O	387.49	737.150	1	0.000	560.99	449.255	1	0.000
	CFDS/C	36.24				65.57			
Mean Wind Speed (24h) (km.h^{-1})	CFDS/O	5.26	680.006	1	0.000	6.60	446.143	1	0.000
	CFDS/C	0.73				1.14			
Mean Wind Speed (Daytime) (km.h^{-1})	CFDS/O	6.96	709.358	1	0.000	8.96	457.651	1	0.000
	CFDS/C	1.12				1.59			
Mean Wind Speed (Nighttime) (km.h^{-1})	CFDS/O	3.64	565.201	1	0.000	4.39	352.218	1	0.000
	CFDS/C	0.41				0.56			

a. Kruskal Wallis Test; significant differences denoted by red highlighting (p < 0.05).

b. Grouping Variable: Habitat

Appendix A3.2: Summary of daily weather parameter values for Cycle 1 (W-2014)

DATE (YYYY-MM-DD)	TEMP_24hr _MAX	TEMP_24hr _MIN	TEMP_24hr_ MODE	TEMP_24hr _MEAN	TEMP_day _MAX	TEMP_day _MIN	TEMP_day_ MODE	TEMP_day _MEAN	TEMP_night _MAX	TEMP_night _MIN	TEMP_night _MODE	TEMP_night _MEAN	HUMIDITY_ 24hr_MEAN	HUMIDITY_ day_MEAN	HUMIDITY_ night_MEAN	RAIN_24hr _TOTAL	RAIN_day_ TOTAL	RAIN_night _TOTAL	SOLAR_daylight_ PERCENT	SOLAR_day _MEAN	WINDSPEED_ 24hr_MEAN	WINDSPEED_ day_MEAN	WINDSPEED_ night_MEAN	WINDGUST_ 24hr_MAX
Highlight rules	> 32°C	≤ 0°C				< 7°C								< 40%										
2014-07-00	34.5	-1.2	13.9	14.98	34.5	1.6	17.7	18.79	24.4	-1.2	11.9	12.08	78.23	66.82	86.94	287.4	93	194.4	40.77	414.55	5.19	7.09	3.73	46.7
2014/07/01	16.6	10.1	10.5	13.4	16.6	11.7	16.6	14.76	16.1	10.1	10.4	12.61	88.47	86.57	89.58	0	0	0	36.84	97.63	7.84	10.32	6.4	25.7
2014/07/02	19.3	10.6	10.6	14.28	19.3	11.2	17.9	16.41	16.4	10.6	10.6	13.07	86.63	80.29	90.26	0	0	0	36.46	221.37	3.7	4.3	3.36	20.9
2014/07/03	18.3	11.7	12.1	13.75	18.3	12.8	17.3	15.46	15.8	11.7	12.1	12.77	87.09	82.46	89.75	1.2	0.2	1	36.46	181.57	8.09	8.69	7.74	33.8
2014/07/04	14.8	7.8	11.3	11.25	14.8	11.6	14.8	13.57	14.8	7.8	9.8	10.39	89.7	84.23	91.73	32.8	0	32.8	27.08	160.46	10.35	15.12	8.57	46.7
2014/07/05	11.8	5.5	7.2	8.39	11.8	6.3	11.3	10.15	10.1	5.5	7.1	7.43	85.04	77.12	89.39	4.2	1.2	3	35.42	200.09	2.68	3.58	2.2	24.1
2014/07/06	12.5	1.6	7.1	7.03	12.5	6.9	9.4	9.54	8.8	1.6	6.6	5.59	90.5	86.54	92.77	2.8	0.2	2.6	36.46	156.54	2.95	3.47	2.65	14.5
2014/07/07	14.3	-0.4	0.8	6.12	14.3	4.3	14.3	12.4	11.6	-0.4	0.8	2.83	85.34	70.3	93.22	0.4	0.2	0.2	34.38	351.45	1.52	3.78	0.33	14.5
2014/07/08	16.1	0.8	3.4	8.3	16.1	6.8	15.2	13.57	12.3	0.8	8.8	5.67	80.09	63.75	88.27	0	0	0	33.33	285.19	2.4	3.85	1.68	14.5
2014/07/09	16.4	3.8	16.4	11.02	16.4	7.5	16.4	14.41	13.8	3.8	8.6	8.98	78.41	70.86	82.93	0.2	0.2	0	37.5	324.61	4.38	6.49	3.12	20.9
2014/07/10	18.4	-1.2	18.4	7.4	18.4	4.9	18.4	15.51	14.8	-1.2	0.6	3.16	81.06	60.15	92.02	0.4	0.4	0	34.38	368.67	1.07	2.91	0.1	12.9
2014/07/11	19.3	0.2	18	9.94	19.3	5.6	18.6	15.91	14.6	0.2	3.2	6.66	85.13	68.91	94.02	0.2	0.2	0	35.42	338.38	1.93	3.29	1.19	19.3
2014/07/12	18.7	6.6	8.8	11.97	18.7	8.2	18.4	15.91	15.9	6.6	8.8	9.71	81.74	66.66	90.39	0	0	0	36.46	323.6	3.32	3.61	3.15	16.1
2014/07/13	17.2	6	9	10.71	17.2	10.4	14.8	13.94	15.2	6	7.8	9.17	90.2	86.19	92.11	0.4	0.2	0.2	32.29	198.61	2.93	3.56	2.63	19.3
2014/07/14	19.9	2.5	8.1	10.5	19.9	5.6	19.8	16.03	15.7	2.5	4.7	7.47	84.95	70.35	92.95	0.2	0	0.2	35.42	349.79	1.12	2.02	0.62	11.3
2014/07/15	22.8	3.8	5.7	12.14	22.8	7.6	22.8	18.2	22.4	3.8	5.6	10.45	75.15	54.29	80.99	0	0	0	21.88	64.76	0.72	0.91	0.66	8
2014/07/16	19.1	8.2	8.4	12.83	19.1	13.2	15.2	16.64	14.2	8.2	13.7	11.09	74.38	62.37	79.83	0	0	0	31.25	298.3	5.82	8.01	4.83	32.2
2014/07/17	14.9	9.8	13.1	12.62	14.9	12.4	13.6	13.64	13.2	9.8	12.9	12.07	88.32	89.62	87.61	27.6	17.8	9.8	35.42	149.82	10.21	9.23	10.74	43.5
2014/07/18	16.3	9.1	10.5	12.27	16.3	11	14.7	13.73	13.6	9.1	13.6	11.43	88.42	79.66	93.44	15.8	2.2	13.6	36.46	177.06	8.12	11.14	6.39	46.7
2014/07/19	16.9	10.7	12.2	13.16	16.9	11.8	15	14.64	14.3	10.7	12.4	12.32	86	78.8	90.13	0.8	0.2	0.6	36.46	158.83	2	2.7	1.6	12.9
2014/07/20	17.3	9.2	11.3	12.82	17.3	11.7	16.6	15.38	14.1	9.2	11.2	11.36	79.59	68.97	85.69	0	0	0	36.46	208.49	3.25	4.22	2.7	19.3
2014/07/21	19.7	-0.6	7.5	9.5	19.7	1.6	19.6	15.36	14.7	-0.6	-0.6	5.98	81.17	63.47	91.78	0.2	0.2	0	37.5	355.33	1.23	2.58	0.43	12.9
2014/07/22	19.2	6	8	11.96	19.2	11.2	17.8	16.24	16.6	6	7.7	9.4	84.58	73.61	91.17	0	0	0	37.5	240.69	3.92	6.28	2.51	24.1
2014/07/23	21.8	6.1	7.4	11.81	21.8	7	20	16.58	15.2	6.1	7.4	8.81	86.26	73.73	94.12	0	0	0	38.54	262.14	1.12	1.73	0.73	11.3
2014/07/24	16.9	9.7	12.4	12.65	16.9	11.2	11.2	14.39	13.2	9.7	12.8	11.6	86.95	79.31	91.53	1.8	0	1.8	37.5	226.5	11.97	14.68	10.34	40.2
2014/07/25	14.8	8.6	12.4	11.36	14.8	10.2	12	12.23	13.2	8.6	12.8	10.89	85.53	79.62	88.77	14.2	4.4	9.8	35.42	291.09	5.4	5.84	5.15	27.4
2014/07/26	15.2	8.4	8.5	11.24	15.2	9.4	11.8	12.76	13.7	8.4	8.5	10.29	91.69	89.59	93	18	10.4	7.6	38.54	139.08	6.14	7.91	5.03	30.6
2014/07/27	17.6	11.4	11.5	13.53	17.6	12	16.2	15.37	15.8	11.4	11.5	12.38	92.04	86.97	95.22	1	0.2	0.8	38.54	156.73	2.42	2.16	2.58	12.9
2014/07/28	22.1	9.1	11	14.42	22.1	10.9	20.4	18.72	17.9	9.1	10.6	11.84	83.52	65.78	94.17	0.2	0.2	0	37.5	364.53	1.23	2.76	0.32	12.9
2014/07/29	18.2	4	7.6	11.43	18.2	4.6	18.1	15.34	15.3	4	7.1	8.97	91.95	87.03	95.03	0.2	0.2	0	38.54	350.59	2.68	5.99	0.6	20.9
2014/07/30	17.5	7.1	7.5	10.93	17.5	9.3	17.5	14.65	15.3	7.1	7.5	9.35	95.34	91.22	97.14	0.2	0	0.2	10.42	210.6	1.14	2.41	0.61	8
2014/07/31	19.7	8.7	13.1	14.3	19.7	13.1	13.1	17.23	15.3	8.7	13.1	12.73	86.68	81.82	90.94	0	0	0	0	-999	2.88	3.07	2.78	-999
2014/08/01	17.5	8.7	10.9	12.6	17.5	10.9	17.5	15.42	15.3	8.7	8.7	10.9	84.77	78.97	92.51	0	0	0	0	-999	1.86	1.84	1.87	-999
2014/08/02	15.3	9.8	12	13.15	15.3	12	15.3	14.2	14.2	9.8	12	12.47	85.07	82.08	87.52	0	0	0	0	-999	7	9.64	5.3	-999
2014/08/03	17.5	12	13.1	14.1	17.5	12	17.5	15.54	15.3	12	13.1	13.18	83.96	77.99	87.8	0	0	0	0	-999	6.81	8.74	5.57	-999
2014/08/04	15.3	10.9	12	12.5	15.3	12	12	13.34	13.1	10.9	12	12	89.27	86.42	90.61	18	0	18	0	-999	5.67	6.79	5	-999
2014/08/05	15.3	9.8	12	12.2	15.3	12	13.1	13.79	12	9.8	12	11.29	85.19	80.59	88.02	0.6	0	0.6	0	-999	4.88	6.14	4.16	-999
2014/08/06	14.2	8.7	9.8	11.63	14.2	10.9	14.2	13.34	13.1	8.7	9.8	10.61	86.6	80.24	90.69	0	0	0	0	-999	5.59	7.47	4.47	-999
2014/08/07	18.6	4.3	15.8	12.62	18.6	10.9	17.5	16.28	16.3	4.3	15.8	11.44	82.53	73.92	85.31	0	0	0	3.13	94.67	4.86	9.33	3.42	29
2014/08/08	24.2	5.1	11.7	13.39	24.2	8.5	24.2	19.85	18.8	5.1	5.2	9.52	82.41	64.17	93.35	0	0	0	37.5	386.92	1.05	2.18	0.37	11.3
2014/08/09	22.8	8.9	21.4	15.66	22.8	11.4	21.8	19.72	21.1	8.9	11	13.11	86.4	75.86	93	0.4	0.2	0.2	38.54	387.49	2.62	5.34	0.92	19.3
2014/08/10	24.5	10.2	10.4	16.05	24.5	10.9	24.5	21.22	19.8	10.2	10.4	12.67	83.49	68.34	93.41	0.2	0.2	0	39.58	364.32	1.57	3.2	0.5	14.5
2014/08/11	17.1	10.9	13	14.22	17.1	12.3	16.9	15.51	15.3	10.9	12.8	13.33	91.23	88.08	93.39	0.2	0.2	0	40.63	222.28	4.06	7.42	1.77	29
2014/08/12	20.6	10.1	13.8	15.09	20.6	13.5	20.2	17.66	16.7	10.1	13.5	13.34	88.79	81.77	93.6	0	0	0	40.63	330.74	3.47	3.98	3.12	29
2014/08/13	18.4	13.8	14.2	15.32	18.4	13.9	16.8	16.46	16.1	13.8	14.2	14.58	85.95	80.39	89.59	6.8	1.6	5.2	39.58	250.95	9.82	11.68	8.6	38.6
2014/08/14	18.2	11.3	14	14.52	18.2	12.7	17.1	16.01	15.5	11.3	13.8	13.46	89.91	84.72	93.61	0.2	0	0.2	41.67	165.72	2.82	3.2	2.54	14.5
2014/08/15	18.2	10.8	13.2	14.53	18.2	13.9	18.2	16.84	14.9	10.8	13.1	13.02	86.09	77.05	92.02	0.2	0.2	0	39.58	420.42	7.34	11.93	4.33	30.6
2014/08/16	23.2	5.1	7.5	13.77	23.2	8.8	23.1	19.49	18.4	5.1	6.6	10.02	83.39	66.97	94.14	0.2	0.2	0	39.58	426.11	1.42	3.12	0.3	17.7
2014/08/17	29.4	7.5	29.4	16.85	29.4	9.2	29.4	23.43	19.2	7.5	14	12.35	78.43	56.92	93.14	0.4	0.2	0.2	40.63	374.85	1.72	3.2	0.7	16.1
2014/08/18	22.3	13.9	14.8	16.45	22.3	15.5	18.5	18.69	15.8	13.9	15.2	14.92	77.68	68.44	84	0.2	0.2	0	40.63	368.85	6.83	7.32	6.5	25.7
2014/08/19	17.8	13.2	14	15.07	17.8	14.7	16.8	16.45	15.9	13.2	14	14.21	82.7	77.86	85.73	0	0	0	38.54	172.24	8.79	9.89	8.1	30.6
2014/08/20	15.9	9.4	13	12.73	15.9	11.9	12.7	13.56	13.8	9.4	13.2	12.23	88.26	87.33	88.82	21.6	16.4	5.2	37.5	146.53	6.23	6.36	6.14	35.4
2014/08/21	17.2	9	9.1	12.35	17.2	10.3	17.1	15.02	13.9	9	12.4	10.75	81.44	66.03	90.68	11	0.4	10.6	37.5	386.81	5.31	5.42	5.25	27.4
2014/08/22	18.2	5.7	11.6	12.48	18.2	10.8	17.2	15.7	13.8	5.7	11.3	10.27	84.4	73.51	91.84	0.8	0.2	0.6	40.63	344.49	2.63	4.55	1.32	16.1
2014/08/23	16.9	3.4	14	10.87	16.9	4.8	16.7	14.32	14	3.4	13	8.29	78.75	67.95	86.8	0	0	0	42.71	363.76	5.9	9.35	3.33	27.4
2014/08/24	22.5	3.7	6.9	12.02	22.5	7.3	22.5	18.68	16.2	3.7	3.7	7.66	74.17	52.61	88.29	0	0	0	39.58	470.71	1.92	2.82	1.33	24.1
2014/08/25	23.6	6.7	8.7	14.51	23.6	15.2	17.4	18.92	16.7	6.7	9	11.74	71.71	59.08	79.63	8.4	0	8.4	38.54	451.73	6.49	9.64	4.51	30.6
2014/08/26	18.7	12.3	12.5	14.45	18.7	12.4	17.9	15.96	15.1	12.3	14.6	13.41	87.69	82.13	91.49	0.6	0	0.6	40.63	260.36	5.22	6.49	4.35	24.1
2014/08/27	17.5	11.1	13	13.6	17.5	11.7	14	14.86	14.1	11.1	12.9	12.85	84.05	77.92	87.73	15.8	2.6	13.2	37.5	291.44	6.46	6.05	6.71	29
2014/08/28	13.6	6.8	10.5	10.07	13.6	8.8	10.5	11.17	12	6.8	10.5	9.35	82.05	69.95	89.98	13.4	1.6	11.8	39.58	327.89	7.1	11.86	3.97	45.1
2014/08/29	16.3	6.8	6.8	11.19	16.3	7.3	16.1	13.71	13.4	6.8	6.9	9.22	79.36	70.79	86.04	2.6	0.2	2.4	43.75	403.17	6.07	7.35	5.07	29
2014/08/30	22	4.4	21.7	13.05	22	6.8	21.8	18.88	19.4	4.4	4.8	9.05	72.75	55.23	84.74	0	0	0	40.63	479.44	2.25	3.45	1.43	16.1
2014/08/31	25.9	3.9	7.5	14.33	25.9	8.2	25.8	21.93	20.4	3.9	6.8	9.12	72.52	47.44	89.68	0	0	0	40.63	481.64	1.45	2.95	0.42	14.5
2014/09/01	30.5	4.8	5.6	16.02	30.5	8.6	30.1	25.63	22.3	4.8	5.7	9.15	68.52	38.6	89.89	0.2	0.2	0	41.67	482.7	1.08	2.4	0.14	14.5
2014/09/02	31.4	5.9	5.9	17.76	31.4	9.3	31.4	26.13	20.2	5.9	5.9	11.79	54.66	33.02	70.11	0	0	0	41.67	477.25	2.98	5.2	1.4	24.1
2014/09/03	18.4	8.3	14.9	13.76	18.4	8.3	18.4	16.09	15.3	8.4	14.4	11.95	82.18	77.52	85.8	0	0	0	43.75	404.17	5.86	7.68	4.44	29
2014/09/04	30.9	6.8	12.8	17.02	30.9	8.9	26.8	22.77	20.9	6.8	11.3	12.54	71.52	54.95	84.41	0	0	0	43.75	424.29	2.81	2.02	3.43	32.2
2014/09/05	20.1	11.8	14	15.24	20.1	13.7	18	17.32	15.7	11.8	14	13.62	78.93	70.19	85.72	0	0	0	43.75	284.98	4.72	6.13	3.61	19.3
2014/09/06	20.1	7.2	12.4	14.04	20.1	13.1	15.4	16.79	16.4	7.2	12.1	11.99	86.15	81.93	89.29	0.4	0.4	0	42.71	231.07	3.6	4.41	3	17.7
2014/09/07	22.3	6.2	6.2	14.38	22.3	10.8	22.2	18.7	17.2	6.2	6.2	11.02	82.18	68.67	92.69	0.4	0.2	0.2	43.75	446.79	2.07	3.96	0.59	19.3
2014/09/08	20.1	8.8	12.8	15.02	20.1	13.3	20.1	18.08	16.2	8.8	12.6	12.64	83.11	72.95	91.02	0.2	0	0.2	43.75	430.52	5.8	9.12	3.21	25.7
2014/09/09	22.9	8.1	14.7	15.61	22.9	12.9	22.1	18.94	16.2	8.1	15.2	13.02	78.36	67.48	86.83	0.2	0.2	0	43.75	452.88	7.31	7.16	7.43	27.4
2014/09/10	18.6	8.3	14.6	14.59	18.6	10.8	18.3	16.53	14.7	8.3	14.1	12.96	79.92	74.16	84.79	0	0	0	45.83	440.27	9.86	13.43	6.84	35.4
2014/09/11	19.7	12.3	13.2	15.16	19.7	13.9	18.7	17.41	14.1	12.3	14.1	13.41	81.31	75.67	85.7	0	0	0	43.75	479.12	9.18	10.75	7.97	30.6
2014/09/12	21.1	4.8	12.9	13.64	21.1	6.8	20.6	17.78	15.6	4.8	12.6	10.28	69.59	54	82.25	0	0	0	44.79	484.67	2.3	2.79	1.9	17.7
2014/09/13	20.1	3.2	19.2	12.61	20.1	7.3	19.7	17.63	15.6	3.2	13	8.86	82.41	69.98	91.67	0	0	0	42.71	509.07	3.85	6.39	1.95	22.5
2014/09/14	21.3	7.4	13.6	15.21	21.3	7.4	20.7	18.18	16.8	7.4	13.1	12.79	81.45	72.77	88.49	0	0	0	44.79	467.33	3.85	4.28	3.5	22.5
2014/09/15	21.1	11.1	20.7	15.33	21.1	11.4	20.9	18.35	16.3	11.1	12.5	12.77	79.95	69.2	89.04	0	0	0	45.83	439.39	5.01	5.82	4.31	22.5
2014/09/16	24.4	10.9	11.8	17.23	24.4	13.8	24.4	20.63	19.7	10.9	11.6	14.48	77.85	65.21	88.11	0	0	0	44.79	354.84	3.41	5.22	1.93	22.5
2014/09/17	20.5	13	14.7	16.01	20.5	14.4	17.5	17.24	17.2	13	14.7	15.06	84.73	82.07	86.8	2.4	1.6	0.8	43.75	262.17	5.86	7.37	4.69	27.4
2014/09/18	15.6	8.3	11.5	11.99	15.6	11.4	15.3	13.44	12.9	8.3	11.4	10.86	83.93	76.43	89.76	16	2.4	13.6	43.75	391.02	5.67	7.69	4.09	33.8
2014/09/19	16.3	4.8	7.7	10.7	16.3	9.2	15	14.13	13.4	4.8	7.6	8.04	83.42	77.76	87.81	4.2	4.2	0	43.75	310.12	2.23	4.34	0.59	19.3
2014/09/20	17.8	0.9	15.4	11.17	17.8	7.9	17.8	15.8	14.2	0.9	13.5	7.58	76.52	62.29	87.59	0	0	0	43.75	535.29	7.01	10.43	4.36	29
2014/09/21	25.4	6.1	25.4	16.07	25.4	8.2	25.4	21.4	20.9	6.1	10	11.92	69.17	53.4	81.43	0	0	0	43.75	544.83	3.5	4.53	2.7	22.5
2014/09/22	30.1	8.9	9.7	16.64	30.1	9.4	19.4	21.88	15.8	8.9	10	12.01	76.45	60.47	90.55	0	0	0	46.88	439.31	3.24	4.48	2.13	20.9
2014/09/23	21.2	12.8	12.8	15.89	21.2	13.9	17.6	18.31	17.1	12.8	12.8	13.92	75.1	65.14	83.19	0	0	0	44.79	383.81	7.05	8.48	5.89	25.7
2014/09/24	20.1	12.9	16	16.03	20.1	14.1	18.2	17.79	16.6	12.9	13.5	14.54	77.75	69.91	84.38	0	0	0	45.83	286.36	7.92	9.07	6.95	27.4
2014/09/25	20.5	12.1	13.4	15.18	20.5	14.3	18.5	17.25	14.7	12.1	13.8	13.56	83.06	74.71	89.56	0.4	0.2	0.2	43.75	233.74	5.18	5.64	4.83	19.3
2014/09/26	17.6	9.2	13.4	13.09	17.6	11.4	11.5	14.28	14.1	9.2	13.9	12.21	80.18	74.71	84.25	1.4	1.2	0.2	42.71	310.76	5.98	7.55	4.8	22.5
2014/09/27	16.7	3.9	16.6	11.75	16.7	10.4	16.7	14.39	13.9	3.9	13.1	9.52	80.02	77.39	82.25	3.4	3.2	0.2	45.83	442.66	7.07	11.09	3.67	29
2014/09/28	21.7	3.8	5.1	12.37	21.7	5.8	21.1	16.44	17	3.8	4.4	8.78	74.34	62.71	84.61	0	0	0	46.88	372.91	2.84	4.67	1.22	20.9
2014/09/29	19.2	7.2	9.2	12.25	19.2	10.4	15.4	15.24	14.7	7.2	7.8	9.73	83.17	75.7	89.48	2.6	2.6	0	45.83	305.84	3.62	5.97	1.63	24.1
2014/09/30	19.7	5	6.8	13.25	19.7	7.9	19.5	16.62	16.7	5	6.3	10.28	88.02	80.69	94.49	0.2	0	0.2	46.88	329.49	4.51	6.77	2.51	25.7
2014/10/01	24.8	7.6	23.8	17.32	24.8	10.4	24	21.29	19.4	7.6	9.3	13.96	74	62.3	83.9	0	0	0	45.83	546.7	5.99	7.65	4.58	25.7
2014/10/02	26.3	6.3	26.2	17.56	26.3	10.1	26.3	23.08	20.7	6.3	6.3	12.89	67.76	52.59	80.6	0	0	0	45.83	559.82	5.35	7.51	3.53	29
2014/10/03	24.9	8.7	14.3	17.66	24.9	11.7	23.6	21.68	18.8	8.7	14.1	14.25	67.8	57.36	76.63	0	0	0	45.83	564.32	7.72	11.27	4.72	37
2014/10/04	28.7	6.8	28.1	17.74	28.7	10.7	28.4	24.36	20.1	6.8	8.2	12.13	69.13	47.89	87.1	0	0	0	45.83	569.55	2.67	4.62	1.02	20.9
2014/10/05	32	8.1	9.4	17.71	32	11.9	29.1	25.12	19.1	8.1	9.6	11.43	75.58	54.48	93.44	0.2	0.2	0	45.83	578.5	2.2	4.51	0.25	16.1
2014/10/06	34.5	8.9	12.4	18.82	34.5	13.8	26.1	25.22	17.9	8.9	15.7	13.4	75.19	53.93	93.17	0.4	0.2	0.2	45.83	565.86	3.07	5.61	0.92	24.1
2014/10/07	20.8	12.9	15.3	16.66	20.8	15.2	18.8	18.53	17.9	12.9	15.1	15.08	79.56	68.82	88.65	1	0	1	45.83	230.89	2.87	3.13	2.65	16.1
2014/10/08	18.4	8.4	12.9	13.39	18.4	11.3	17.5	15.4	13	8.4	12.9	11.54	78.29	66.57	89.08	3	0.4	2.6	47.92	440.15	5.95	9.38	2.79	30.6
2014/10/09	15.9	3.4	15.7	10.59	15.9	5.3	15.7	13.45	13.2	3.4	11.2	7.97	81.98	73.96	89.36	0.8	0.8	0	47.92	300.67	3.95	7.1	1.06	25.7
2014/10/10	25.4	8.6	25.4	17.41	25.4	13.6	25.4	22.24	20.3	8.6	11	13.15	66.32	47.69	82.76	0	0	0	46.88	579.02	5.62	7.19	4.25	29
2014/10/11	25.6	6.5	25.4	17.24	25.6	8.7	25.6	22.5	18.8	6.5	13.9	12.4	74.34	58.67	88.76	0.2	0.2	0	47.92	562.04	3.06	5.51	0.8	22.5
2014/10/12	24.3	9.4	22.6	17.23	24.3	11.2	22.9	20.18	19.2	9.4	17.7	14.41	76.99	71.81	81.96	0.2	0.2	0	48.96	516.21	7.49	9.93	5.15	33.8
2014/10/13	29.2	15.3	16.1	21.2	29.2	16	29.2	24.79	22.6	15.3	15.6	17.61	58.45	47.58	69.31	0	0	0	50	516.19	6.97	6.82	7.11	29
2014/10/14	28.3	8.7	16	18.19	28.3	13.1	28	23.43	16.9	8.7	16.3	13.38	75.53	58.89	90.84	0	0	0	47.92	567.76	5.09	6.33	3.96	25.7
2014/10/15	21.9	14.8	15.3	17.53	21.9	15.8	21.3	19.57	16.3	14.8	15.5	15.49	84.07	76.75	91.4	0.4	0.2	0.2	50	478.42	8.09	10.91	5.27	27.4
2014/10/16	20.9	13.3	13.7	16.36	20.9	13.3	20.1	18.36	16.5	13.3	13.7	14.43	77.45	74.6	80.18	0.6	0.2	0.4	48.96	523.83	9.54	12.64	6.57	35.4
2014/10/17	27.2	4.6	13.6	17.38	27.2	7.9	27.2	21.3	4.6	4.6	12.9	12.04	56.79	38.04	74.04	0	0	0	47.92	593.61	3.77	5.06	2.59	27.4
2014/10/18	28.7	3.7	28	17.14	28.7	10.2	28.4	24.85	19.3	3.7	15.1	10.05	64.79	38.11	89.34	0	0	0	47.92	594.63	3.76	5.58	2.08	19.3
2014/10/19	28.8	10.7	12	19.78	28.8	15.3	26.9	24.27	22.9	10.7	11.8	15.64	64.55	48.02	79.76	0.2	0	0.2	47.92	592.28	8.42	13.17	4.05	40.2
2014/10/20	29.5	8.1	18.3	20.74	29.5	12.3	29.5	25.83	23.6	8.1	17.2	16.06	62.6	48.15	75.9	0	0	0	47.92	561.83	4.34	6.23	2.59	27.4
2014/10/21	26.3	9.2	24.9	17.9	26.3	12.9	25.6	22.42	17.5	9.2	11.7	13.38	76.78	63.17	90.4	0	0	0	50	560.35	3.03	5.27	0.8	20.9
2014/10/22	26	11.1	14.3	17.01	26	12.7	23.6	20.04	16.2	11.1	15.7	13.98	84.38	73.81	94.94	0	0	0	50	483.31	4.15	5.4	2.9	19.3
2014/10/23	23.7	15.2	15.3	18.53	23.7	15.8	23.6	20.64	18.7	15.2	15.2	16.51	83.08	74.72	91.1	0.2	0	0.2	48.96	492.15	8.57	10	7.19	35.4
2014/10/24	26.6	17.4	18.3	20.75	26.6	18.6	21.6	23.1	19.7	17.4	18.3	18.49	68.9	61.3	76.18	0	0	0	48.96	589.21	14.59	16.07	13.18	38.6
2014/10/25	28.8	17.6	18.2	22.02	28.8	18.8	28.8	25.29	21.8	17.6	18.2	18.89	59.08	51.02	66.82	0	0	0	48.96	589.68	10.73	11.97	9.53	37
2014/10/26	30.1	9.9	29.7	19.99	30.1	12.6	29.9	25.83	20.8	9.9	11.4	14.39	66.02	48.23	83.08	0	0	0	48.96	598.23	3.5	6.12	0.98	19.3
2014/10/27	24.4	9.2	16.8	16.61	24.4	12.8	19.8	19.74	17.4	9.2	16.9	13.6	83.66	75.68	91.31	0	0	0	48.96	284.51	4.06	4.77	3.37	24.1
2014/10/28	29.2	10.4	16.5	20.27	29.2	12.7	28.4	24.75	20.5	10.4	16.5	15.79	75.42	62.35	88.48	0.2	0.2	0	50	566.1	4.13	6.32	1.93	25.7
2014/10/29	24.9	14.8	16.6	18.81	24.9	16.2	24.9	20.81	19.2	14.8	16.7	16.72	79.64	69.86	89.83	1.6	0	1.6	51.04	322.76	6.53	8.81	4.15	32.2
2014/10/30	19.6	13	15.4	15.86	19.6	13.9	16.3	16.66	16.6	13	14.9	15.03	76.73	72.65	80.98	1.2	1.2	0	51.04	380.8	7.42	9.06	5.71	27.4
2014/10/31	25.1	12.8	13.7	18.78	25.1	14.8	24.6	22.37	19.6	12.8	13.6	15.18	49.89	39.38	60.4	0	0	0	50	612.21	8.24	8.59	7.88	33.8
2014/11/01	27.5	7.3	27.5	19.23	27.5	10.4	27.4	24.04	20.4	7.3	14.7	14.41	60.99	47.23	74.75	0	0	0	50	601	6.5	9.12	3.88	33.8
2014/11/02	29.3	13.8	14.1	21.89	29.3	16.3	28.9	26.14	24.4	13.8	14.2	17.64	63.33	49.94	76.73	0	0	0	50	603.25	5.61	7.75	3.47	29
2014/11/03	20.6	14.8	17.4	17.08	20.6	15.7	17.3	17.51	19.6	14.8	17.6	16.73	84.99	86	84.17	3.6	3.6	0	44.79	117.12	4.05	4.65	3.56	22.5
2014/11/04	22.5	14.2	14.7	16.73	22.5	14.8	14.8	18.35	18.1	14.2	14.7	15.24	87.97	83.24	92.32	8	1	7	47.92	253.85	4.17	4.59	3.78	19.3
2014/11/05	22.5	15.2	15.8	18.48	22.5	15.9	22.2	20.38	18.1	15.2	15.6	16.42	78.59	70.92	86.93	0.2	0.2	0	52.08	560.64	6.35	8.73	3.76	30.6
2014/11/06	29.3	11.8	17.4	21.09	29.3	15.2	27.9	25.32	22.8	11.8	16.8	16.86	66.24	54.29	78.19	0	0	0	50	630.46	5.97	8.04	3.9	25.7
2014/11/07	31.9	9.8	31.9	20.48	31.9	12.2	31.9	27.1	22.3	9.8	11.9	13.57	67.14	47.9	87.19	0	0	0	51.04	622.51	2.6	4.8	0.31	19.3
2014/11/08	23	14.3	14.9	18.14	23	16.8	21.7	20.35	17.4	14.3	14.9	15.75	80.84	72.88	89.5	0	0	0	52.08	441.82	5.41	7.38	3.27	24.1
2014/11/09	25.1	12.8	14.1	19.36	25.1	13.2	24.4	21.64	21.2	12.8	13.6	16.87	74.51	68.88	80.63	0	0	0	52.08	569.7	7.33	9.98	4.45	32.2
2014/11/10	25.2	16.3	19.7	21.14	25.2	19.8	24.2	23.42	20.1	16.3	19	18.86	62.96	57.33	68.58	0	0	0	50	618.21	9.3	12.59	6.01	37
2014/11/11	26.3	11.2	14.4	18.79	26.3	14.2	24.8	22.01	19.6	11.2	14.5	15.3	69.64	60.52	79.54	0	0	0	52.08	451.08	2.99	4.55	1.29	20.9
2014/11/12	24.5	10.7	16.5	18.18	24.5	16.8	21.7	21	18	10.7	16.1	15.24	78.19	66.07	90.19	2.8	0.4	2.4	51.04	519.12	7.04	10.27	3.68	35.4
2014/11/13	22.3	12	22.1	17.18	22.3	12.1	22.2	19.72	17.4	12	12	14.42	73.74	61.9	86.61	0.6	0.2	0.4	52.08	553.48	3.4	5.25	1.39	27.4
2014/11/14	21.6	9.9	11.3	14.83	21.6	12	21.3	17.62	13.3	9.9	12.4	11.8	76.65	68.02	86.02	4	4	0	52.08	495.42	6.23	8.79	3.45	33.8
2014/11/15	18.9	6.8	14.2	13.65	18.9	8.8	18.1	16.27	14.2	6.8	14.2	10.92	71.96	62.41	81.91	1.2	0.4	0.8	51.04	611.33	7.21	11.22	3.04	38.6
2014/11/16	20.4	10.6	20.3	15.78	20.4	12.5	20.4	18.07	15.4	10.6	15.1	13.08	66.76	56.77	78.57	0.4	0	0.4	54.17	592.33	10.93	13.72	7.64	37
2014/11/17	25.3	14.6	14.6	19.18	25.3	15.7	24.7	22.27	19.1	14.6	14.6	15.81	56.77	48.92	65.3	0	0	0	52.08	630.8	13.04	12.85	13.25	35.4
2014/11/18	26.6	14.6	15.1	19.49	26.6	15.9	26.6	22.57	19.1	14.6	15.1	16.15	61.16	51.96	71.15	0	0	0	52.08	634.36	12.49	13.66	11.21	35.4
2014/11/19	23.8	15.8	15.8	18.96	23.8	16.9	22.2	21.17	18	15.8	16	16.56	67.57	58.98	76.91	0	0	0	52.08	623.02	16.82	18.4	15.09	41.8

Record length: 142 days; the first row is the parameter value calculated over the whole season (all available data); all subsequent rows are parameters calculated over a 24 hour period; each day (24hrs) is calculated from 00:00 to 23:59; night hours are defined as the period in each 24 hours when solar radiation ≤ 30 W.m-2; day hours are defined as the period in each 24 hours when solar radiation > 30 W.m-2; temperatures are in °C; wind speed is in km.h-1; rainfall is in mm; solar radiation is in W.m-2; missing/bad data are flagged as -999.

Appendix A3.3: Summary of daily weather parameter values for Cycle 2 (S-2015)

DATE (YYYY-MM-DD)	TEMP_24hr _MAX	TEMP_24hr _MIN	TEMP_24hr_ MODE	TEMP_24hr _MEAN	TEMP_day _MAX	TEMP_day _MIN	TEMP_day_ MODE	TEMP_day _MEAN	TEMP_night _MAX	TEMP_night _MIN	TEMP_night _MODE	TEMP_night _MEAN	HUMIDITY_ 24hr_MEAN	HUMIDITY_ day_MEAN	HUMIDITY_ night_MEAN	RAIN_24hr _TOTAL	RAIN_day_ TOTAL	RAIN_night _TOTAL	SOLAR_daylight_ PERCENT	SOLAR_day _MEAN	WINDSPEED_ 24hr_MEAN	WINDSPEED_ day_MEAN	WINDSPEED_ night_MEAN	WINDGUST_ 24hr_MAX
Highlight rules	> 32°C	≤ 0°C				< 7°C								< 40%										
2015-01-00	42.8	6.4	16.6	20.86	42.8	9.1	23.7	24.3	31.1	6.4	16.4	17.59	70.32	59.07	81.03	25.4	7.2	18.2	48.77	549.63	7.43	9.93	5.04	**43.5**
2015/01/13	27.4	14.3	24.2	21.81	27.4	17.9	26.1	24.78	23.5	14.3	23.2	18.31	75.95	68.4	84.86	0.2	0.2	0	54.17	612.79	10.41	16.31	3.44	40.2
2015/01/14	33.6	14.6	22.5	24.74	33.6	17.7	33.4	29.26	24.2	14.6	22.5	19.39	66.64	53.44	82.23	0	0	0	54.17	601	4.41	7.86	0.33	24.1
2015/01/15	26.7	19.1	19.3	22.44	26.7	19.2	26.3	23.87	22.2	19.1	19.5	20.83	71.93	66.24	78.38	0.4	0	0.4	53.13	576.29	8.16	10.25	5.8	33.8
2015/01/16	22.6	11.1	19.7	18.53	22.6	15.5	22.4	20.35	19.2	11.1	17.1	16.45	70.54	58.39	84.31	9.8	0.2	9.6	53.13	477.53	7.48	9.67	5	32.2
2015/01/17	24.6	8.9	9.2	17.7	24.6	10.2	24.6	21.75	18.9	8.9	9.2	12.91	69.29	55.56	85.52	0.2	0.2	0	54.17	626.77	6.7	9.69	3.17	27.4
2015/01/18	24.9	15.2	16.8	19.9	24.9	17.1	23.8	22.35	19.1	15.2	18.3	17.13	70.53	61.82	80.4	0	0	0	53.13	578.67	11.72	14.54	8.54	38.6
2015/01/19	28.6	17.7	17.7	21.93	28.6	18.6	25.4	24.85	22.8	17.7	17.7	18.75	55.35	46.04	65.48	0	0	0	52.08	653.24	15.26	15.96	14.49	40.2
2015/01/20	32.5	9.7	19.5	21.65	32.5	14.5	31.1	26.46	20.4	9.7	19.5	16.19	62.06	48.76	77.13	0	0	0	53.13	644.82	7.51	9.91	4.78	30.6
2015/01/21	32.7	16.1	19.7	24.51	32.7	20	30.6	28.31	26.9	16.1	19.4	20.38	59.55	47.26	72.91	0	0	0	52.08	642.18	10.5	12.98	7.8	37
2015/01/22	30.4	14.8	30.3	23.33	30.4	17.3	30.4	26.85	21.6	14.8	21.2	19.34	70.23	58.82	83.16	0	0	0	53.13	622.84	6.18	8.28	3.81	27.4
2015/01/23	30.8	15.9	24.6	24.1	30.8	18.1	28.1	27.05	24.6	15.9	21.3	20.75	69.21	59.98	79.67	0	0	0	53.13	620.71	6.94	9.21	4.36	32.2
2015/01/24	30.8	15.5	19.1	22.24	30.8	16.6	30.4	25.7	21.2	15.5	21.1	18.31	76.68	64.43	90.56	0.2	0.2	0	53.13	611.65	3.88	6.17	1.28	27.4
2015/01/25	28.3	16.2	28.1	22.37	28.3	17	28.2	25.53	23.1	16.2	18.1	18.79	73.88	61.08	88.38	0.2	0	0.2	53.13	613.1	3.15	5.05	1	22.5
2015/01/26	26.3	15.6	18.1	20.62	26.3	18.2	22	22.58	20.6	15.6	18.1	18.21	76.83	69.75	85.56	0	0	0	55.21	250.66	5.11	6.11	3.89	24.1
2015/01/27	25.8	17.6	17.7	21.39	25.8	18.7	24.9	23.37	21.1	17.6	17.7	19.06	67.97	60.6	76.68	0	0	0	54.17	594.58	14.38	17.88	10.24	41.8
2015/01/28	31.1	11.4	30.9	23.16	31.1	16.3	30.2	27.24	26.1	11.4	11.4	18.71	65.36	54.24	77.46	0.2	0.2	0	52.08	614.98	6.07	8.83	3.07	25.7
2015/01/29	34.8	16.2	18.7	25.17	34.8	17.1	34.4	30.24	26.6	16.2	17.4	19.66	63.96	47.36	82	0	0	0	52.08	604.94	3.21	5.13	1.11	19.3
2015/01/30	26.9	19.4	19.6	22.25	26.9	20	26.9	24.51	21	19.4	19.6	19.8	72.97	63.28	83.5	0.2	0.2	0	52.08	563.9	6.54	8.59	4.31	29
2015/01/31	24.3	16.8	16.8	19.9	24.3	17.1	23.3	21.48	19.9	16.8	16.8	18.11	71.05	63.59	79.51	2.2	0.2	2	53.13	454.88	8.15	9.98	6.06	30.6
2015/02/01	26.2	16.5	16.9	21.42	26.2	17.6	25.9	24.26	23	16.5	16.7	18.45	54.67	46.82	62.85	0	0	0	51.04	632.61	13.18	15.33	10.93	38.6
2015/02/02	30.6	9.1	30.3	22.2	30.6	12.6	29.3	26.48	23.7	9.1	19.6	17.91	51.14	39.54	62.73	0.2	0.2	0	50	646.77	6.2	8.16	4.25	25.7
2015/02/03	30.1	12.1	26.3	20.25	30.1	15.8	27.1	24.93	20.1	12.1	12.1	15.38	71.03	54.49	88.28	0.2	0.2	0	51.04	610.1	3.81	6.58	0.92	22.5
2015/02/04	25.4	16.2	17.2	19.92	25.4	18.5	25.4	22.35	21.4	16.2	17.2	17.86	79.66	69.91	87.9	0.4	0.4	0	45.83	330.64	3.79	5.72	2.15	24.1
2015/02/05	26.5	14.9	16.4	20.56	26.5	17.1	26.2	23.84	21.2	14.9	16.6	17.29	75.39	61.67	89.1	0.2	0.2	0	50	531.35	4.87	7.98	1.77	25.7
2015/02/06	27.7	12.8	18.6	20.46	27.7	16.3	26.7	24.31	20.9	12.8	18.8	16.62	75.57	62.19	88.96	0.2	0.2	0	50	621.77	6.57	9.79	3.35	30.6
2015/02/07	31.6	13.9	15.6	22.08	31.6	16	31	26.88	22.5	13.9	15.7	17.28	71.28	53.81	88.75	0.2	0	0.2	50	619.33	3.6	6.17	1.03	22.5
2015/02/08	26.8	12.8	26.1	20.55	26.8	16.8	26.3	24.13	21.6	12.8	19.4	17.12	75.9	63.62	87.67	0.4	0.4	0	48.96	635.38	5.1	8.28	2.06	27.4
2015/02/09	27.7	16.7	16.7	21.92	27.7	17.1	27.6	24.52	22.6	16.7	16.7	19.11	71.06	62.74	80.11	0.2	0.2	0	52.08	576.72	5.52	6.92	4	29
2015/02/10	24.7	16.2	17.9	20.21	24.7	17.5	24.5	22.29	20.4	16.2	17.8	18.22	70.78	59.23	81.86	1.4	0.2	1.2	48.96	588.11	4.95	7.38	2.61	25.7
2015/02/11	24.6	9.2	21.1	18.2	24.6	13.4	24.2	22.36	19.6	9.2	19	14.04	74.59	64.75	84.44	0	0	0	50	604.02	9.66	14.71	4.6	38.6
2015/02/12	24.7	12.1	24.7	19.33	24.7	13.4	24.7	22.3	19.3	12.1	18.3	16.6	74.71	64.28	84.3	0.4	0.2	0.2	47.92	566.5	7.04	10.58	3.79	30.6
2015/02/13	24.5	13	19.8	19.03	24.5	14.6	22.3	21.26	20.6	13	18.7	16.72	81	72.98	89.36	0.6	0.2	0.4	51.04	402.02	5.6	8.64	2.42	25.7
2015/02/14	23.2	17.1	18.1	19.82	23.2	17.8	22.7	21.43	19.3	17.1	18.3	18.29	71.13	59.6	82.18	1.6	0.4	1.2	48.96	606.09	11.83	15.31	8.49	35.4
2015/02/15	24.3	15.8	22.4	20.16	24.3	17.7	23	22.36	21.4	15.8	18.8	17.96	65.15	59.94	70.35	0	0	0	50	623.33	12.47	16.62	8.31	43.5
2015/02/16	31.9	7.4	31.7	21.99	31.9	12.8	31.9	27.67	27.1	7.4	17.4	16.76	52.61	37.96	66.1	0	0	0	47.92	633.37	4.98	7.38	2.76	29
2015/02/17	33.4	8.8	33.4	22.5	33.4	13.9	33.4	29.6	27.5	8.8	15.3	15.97	57.81	36.98	76.98	0	0	0	47.92	627.85	2.95	5.5	0.61	19.3
2015/02/18	27.4	15.3	27	20.63	27.4	16.4	26.2	23.56	21.7	15.3	15.8	17.58	69.08	60	78.55	0	0	0	51.04	478.55	6.75	8.46	4.96	32.2
2015/02/19	23.8	15	18.4	19.26	23.8	16.7	23.3	21.2	19.3	15	16.9	17.41	72.53	63.43	81.27	0.8	0.2	0.6	48.96	565.21	10.79	14.13	7.58	43.5
2015/02/20	24.2	8	24	18.25	24.2	11	24.1	21.4	19	8	17.7	15.23	66.32	57.66	74.63	0.2	0.2	0	48.96	600.34	9.59	13.61	5.74	38.6
2015/02/21	20.6	15.1	15.6	17.57	20.6	16.4	20.5	19.31	16.9	15.1	16.1	15.9	63.59	54.19	72.61	0.4	0	0.4	48.96	575.94	12.39	16.51	8.45	35.4
2015/02/22	27.3	6.4	17.7	18.64	27.3	9.1	27.3	23.3	23.1	6.4	14.8	14.36	54.16	41.67	65.64	0	0	0	47.92	619.39	6.91	7.8	6.08	37
2015/02/23	29.7	11.4	18.9	21.98	29.7	14.3	29.4	25.98	23.5	11.4	17.4	18.3	60.07	48.74	70.5	0	0	0	47.92	609.3	9.57	10.47	8.74	33.8
2015/02/24	30.1	15.7	21.3	22.83	30.1	16.7	28.2	25.68	21.6	15.7	21.5	20.21	70.42	62.43	77.76	0.2	0.2	0	47.92	580.28	11.5	12.62	10.47	38.6
2015/02/25	28.3	15.1	20.4	22.57	28.3	17.5	28.1	25.73	22.3	15.1	20.8	19.66	72.3	62.41	81.4	0	0	0	47.92	572.65	9.85	13.05	6.9	32.2
2015/02/26	24.9	16.6	16.6	20.46	24.9	17.3	24.4	22.71	20.2	16.6	16.6	18.4	79.88	73.74	85.52	0	0	0	47.92	575.13	11.59	14.91	8.54	33.8
2015/02/27	25.8	16	17.2	20.9	25.8	18.2	25.4	23.5	21.3	16	17.2	18.6	69.58	59.73	78.27	0.2	0.2	0	46.88	599.11	11.7	15.05	8.74	38.6
2015/02/28	28.1	12	20.7	20.98	28.1	13.8	28.1	24.65	20.7	12	20.3	17.6	73.24	62.65	82.98	0	0	0	47.92	573.26	9.37	10.98	7.89	37
2015/03/01	29.7	18.6	23.7	23.94	29.7	19.8	28.4	26.69	24.8	18.6	23.7	21.3	62.59	53.32	71.49	0	0	0	48.96	540.21	14.47	16.44	12.59	38.6
2015/03/02	35.6	16	21.9	25.05	35.6	20.3	34.2	29.47	24.3	16	22.6	21.15	52.43	39.87	63.51	0.2	0.2	0	46.88	582.51	5.32	6.97	3.86	22.5
2015/03/03	42.8	11.9	12.1	26.53	42.8	13.7	42.8	36.12	31.1	11.9	11.9	17.71	50.74	26.65	72.9	0	0	0	47.92	560.17	2.67	4.11	1.34	24.1
2015/03/04	26	16	18.5	20.41	26	18.9	22.1	22.82	20.6	16	18.5	18.27	79.54	72.82	85.47	0	0	0	46.88	344.44	6.65	5.76	7.43	27.4
2015/03/05	23.7	16.1	17.4	19.4	23.7	17	23.5	21.64	18.8	16.1	17.4	17.42	67.7	56.42	77.65	0.2	0.2	0	46.88	576.73	12.3	15.1	9.82	37
2015/03/06	26.6	12.1	16.9	19.44	26.6	13.1	25.8	22.97	20.2	12.1	17	16.33	70.28	59.22	80.04	0	0	0	46.88	566.89	6.85	8.3	5.57	32.2
2015/03/07	24.4	12.9	17.3	18.57	24.4	14.3	24.2	21.32	19.2	12.9	17.6	16.15	79.1	71.58	85.75	0	0	0	46.88	561.09	7.96	12.63	3.84	35.4
2015/03/08	24.1	13.8	23.2	19.45	24.1	17.1	23.7	22.27	19.4	13.8	17.5	17.06	73.52	63.75	81.79	0.2	0.2	0	45.83	579.25	9.84	14.28	6.08	35.4
2015/03/09	31	11.4	17.6	20.55	31	14.9	28.5	25.74	20.6	11.4	18.2	16.16	73.6	55.52	88.9	0	0	0	45.83	571.45	4.54	5.24	3.95	25.7
2015/03/10	23.5	17	17.2	19.71	23.5	17.3	23	21.65	19.6	17	17	18.07	76.11	65.32	85.25	0	0	0	45.83	560.89	13.39	16.64	10.65	41.8
2015/03/11	31.6	9.6	19.2	21.13	31.6	10.3	31.6	25.75	22.2	9.6	18.8	17.06	67.67	54.33	79.43	0.2	0.2	0	46.88	474.93	4.94	5.15	4.76	37
2015/03/12	27.3	14.4	16.8	20.03	27.3	16.5	26.9	23.49	20.1	14.4	18	16.98	77.63	64.2	89.47	0	0	0	46.88	515.36	6.37	7.47	5.39	29
2015/03/13	23.7	16.2	17.4	20.41	23.7	18	23.4	22.47	22.6	16.2	17.2	18.52	73.47	65.04	81.22	0	0	0	47.92	497.33	10.65	16.24	5.51	35.4
2015/03/14	31.7	13.9	29.7	21.62	31.7	15	30.4	26.91	25.3	13.9	14.1	16.94	68.18	53.49	81.14	0	0	0	46.88	507.44	2.03	3.91	0.38	17.7
2015/03/15	28.1	14.3	17.9	20.14	28.1	18.7	18.7	23.25	20.1	14.3	18	17.72	75.85	62.62	86.15	0.2	0.2	0	43.75	418.31	4.48	6.12	3.2	24.1
2015/03/16	21.4	11.5	21	17.05	21.4	14.8	21.1	19.75	18.9	11.5	12.2	14.77	84.01	80.64	86.87	0.2	0.2	0	45.83	391.82	9.65	13.85	6.1	38.6
2015/03/17	28.3	17.3	17.3	21.71	28.3	18.7	28.1	25.31	23.8	17.3	17.3	18.79	61.43	49.65	70.98	0	0	0	44.79	533.09	10.14	10.8	9.61	35.4
2015/03/18	29.7	11.2	13.3	19.31	29.7	12.9	24.7	23.79	19.4	11.2	13.6	15.36	73.15	58.8	85.8	0	0	0	46.88	500.18	2.44	4.2	0.88	19.3
2015/03/19	26.2	13	14.5	19.26	26.2	16.1	25.7	22.6	22.7	13	14.2	16.3	79.84	70	88.53	0.2	0	0.2	46.88	422.84	2.25	4.27	0.47	17.7
2015/03/20	24.3	13.2	16.6	18.64	24.3	16.9	24.2	21.89	17.9	13.2	16.7	16.12	79.8	68.17	88.85	0	0	0	43.75	504.67	4.9	8.31	2.25	29
2015/03/21	27.1	14.1	17.1	20.52	27.1	19.1	26.6	24.86	22.4	14.1	16.8	17.27	74.83	59.12	86.55	2	0.4	1.6	42.71	534	5.17	7.6	3.36	33.8
2015/03/22	25.7	10.3	23.2	19.09	25.7	13.4	25	22.59	23.2	10.3	22.6	16.25	76.61	70.14	81.87	0	0	0	44.79	518.23	6.51	9.93	3.73	32.2
2015/03/23	27.2	15	21.2	21.58	27.2	16.2	26.3	24.71	23.3	15	20.6	19.05	71.09	63.6	77.17	0	0	0	44.79	312.51	6.61	8.24	5.28	38.6
2015/03/24	26.9	16.8	19.5	21.28	26.9	19.1	26.9	24	21.3	16.8	19.4	19.15	76.86	66.98	84.56	0.2	0.2	0	43.75	517.83	9.07	12.43	6.45	30.6
2015/03/25	28.2	15	15	20.07	28.2	16.7	20.5	23.1	19.6	15	18.7	17.62	80.4	70.86	88.13	0	0	0	44.79	488.19	7.45	9.26	5.98	35.4
2015/03/26	24.7	14	17.7	19.58	24.7	17.8	23	22.23	20.1	14	17.6	17.43	82.03	70.95	91.02	0	0	0	44.79	334.91	4.48	5.45	3.69	22.5
2015/03/27	26.3	14.2	18.3	20.6	26.3	18.6	26.2	23.97	21.7	14.2	18	17.98	72.53	58.74	83.26	0	0	0	43.75	514.5	9.47	12.6	7.03	30.6
2015/03/28	28.1	10.1	27.9	18.94	28.1	12.7	28.1	24.71	20.6	10.1	12.1	14.45	72.67	54.76	86.59	0	0	0	43.75	516.55	3.18	6.32	0.74	20.9
2015/03/29	28.1	9.7	22.4	20.14	28.1	14.4	28.1	24.59	24.4	9.7	13.9	16.69	72.95	61.07	82.19	0.2	0.2	0	43.75	507.76	5.82	7.09	4.84	29
2015/03/30	27.9	12.7	13.7	19.26	27.9	16.3	27.4	24.63	20.7	12.7	14.1	15.4	75.58	61.35	85.81	0.2	0.2	0	41.82	547.17	2.1	3.97	0.75	19.3

Record length: 77 days; the first row is the parameter value calculated over the whole season (all available data); all subsequent rows are parameters calculated over a 24 hour period; each day (24hrs) is calculated from 00:00 to 23:59; night hours are defined as the period in each 24 hours when solar radiation ≤ 30 W.m-2; day hours are defined as the period in each 24 hours when solar radiation > 30 W.m-2; temperatures are in °C; wind speed is in km.h-1; rainfall is in mm; solar radiation is in W.m-2; missing/bad data are flagged as -999.

Appendix A3.4: **Summary of daily weather parameter values for Cycle 3 (W-2015)**

DATE (YYYY-MM-DD)	TEMP_24hr_MAX	TEMP_24hr_MIN	TEMP_24hr_MODE	TEMP_24hr_MEAN	TEMP_day_MAX	TEMP_day_MIN	TEMP_day_MODE	TEMP_day_MEAN	TEMP_night_MAX	TEMP_night_MIN	TEMP_night_MODE	TEMP_night_MEAN	HUMIDITY_24hr_MEAN	HUMIDITY_day_MEAN	HUMIDITY_night_MEAN	RAIN_24hr_TOTAL	RAIN_day_TOTAL	RAIN_night_TOTAL	SOLAR_daylight_PERCENT	SOLAR_day_MEAN	WINDSPEED_24hr_MEAN	WINDSPEED_day_MEAN	WINDSPEED_night_MEAN	WINDGUST_24hr_MAX
Highlight rules	> 32°C	≤ 0°C				< 7°C								< 40%										
2015-07-00	36.9	-0.1	12	14.87	36.9	3.4	17.6	18.29	26.1	-0.1	12.5	12.23	77.36	66.98	85.39	168.6	30.6	138	32.01	406.77	6.42	8.4	4.89	**51.5**
2015/07/06	23.4	4.2	4.9	11.97	23.4	7.1	23.4	19.04	20.4	4.2	4.8	8.09	75.98	55.56	87.18	0.4	0.4	0	35.42	350.24	0.93	1.55	0.59	19.3
2015/07/07	24.5	4.8	14.9	13.88	24.5	8.3	24.5	20	20.4	4.8	14.9	10.96	77.16	55.35	87.55	0	0	0	32.29	158.81	4.13	3.41	4.48	30.6
2015/07/08	19.6	12.1	12.7	14.38	19.6	13.1	16.1	16.46	14.8	12.1	12.9	13.24	88.46	79.94	93.13	0.4	0	0.4	35.42	227.26	5.17	4.24	5.68	19.3
2015/07/09	21.5	4.9	12.2	13.64	21.5	6.1	21.5	17.56	17.7	4.9	12.4	11.29	82.13	71.11	88.73	0.2	0	0.2	37.5	319	3.24	3.21	3.27	24.1
2015/07/10	24.6	3.2	7.7	12.33	24.6	4.2	23.4	18.91	16.8	3.2	7.8	8.38	81.47	66.22	90.62	0.2	0	0.2	37.5	310.39	0.8	1.96	0.11	9.7
2015/07/11	15.1	10.6	12.7	13.05	15.1	12.6	14.9	14.37	14.7	10.6	11.1	12.33	89.76	88.38	90.52	8.2	0.2	8	35.42	79.79	4.37	6.27	3.33	22.5
2015/07/12	14	6.7	9.4	9.92	14	7.8	13.7	11.75	10.9	6.7	7.2	8.77	79.69	68.22	86.88	2.6	1	1.6	38.54	289.54	3.01	5.6	1.38	25.7
2015/07/13	14.4	5.1	6	8.76	14.4	6.5	13.8	12.18	10.7	5.1	6	6.8	81.27	70.03	87.72	0	0	0	36.46	294.29	2.67	4.43	1.65	17.7
2015/07/14	17.8	2.9	4.8	9.42	17.8	3.4	17.6	13.76	12.7	2.9	4.9	6.81	73	56.75	82.75	0	0	0	37.5	311.44	2.17	2.18	2.17	22.5
2015/07/15	15.4	4.2	4.2	9.44	15.4	5.1	15.2	12.54	12.3	4.2	4.2	7.49	75	63.03	82.51	0	0	0	38.54	311.76	3.69	6.58	1.87	22.5
2015/07/16	16.1	7.1	7.2	10.63	16.1	8.3	14.9	13.03	12.2	7.1	7.2	9.18	82.54	74.92	87.12	0.4	0	0.4	37.5	233.42	5.27	6.27	4.67	22.5
2015/07/17	12.4	10.4	12.3	11.71	12.4	11.7	11.7	12.07	12.3	10.4	12.2	11.64	93.11	92.82	93.18	22.4	1	21.4	17.71	64.29	10.88	13.46	10.32	40.2
2015/07/18	19.2	8.5	9.5	12.73	19.2	9.2	18.8	16.14	15.2	8.5	9.5	10.6	80.54	66.76	89.19	0.4	0	0.4	38.54	335.57	2.67	2.12	3.02	25.7
2015/07/19	17.4	7.9	9.3	11.54	17.4	9.1	16.2	14.5	13.8	7.9	9	9.69	86.09	77.51	91.47	0.2	0.2	0	38.54	302.78	2.9	4.97	1.6	19.3
2015/07/20	15.3	9.2	12	12.4	15.3	11.9	14.4	13.99	12.7	9.2	12	11.49	78.34	70.97	82.57	0	0	0	36.46	248.31	11.87	15.28	9.91	32.2
2015/07/21	16.6	10.5	10.6	12.92	16.6	11.2	16.6	14.69	13.6	10.5	10.6	11.81	62.99	55.3	67.81	0	0	0	38.54	360.14	18.98	21.98	17.1	49.9
2015/07/22	17.7	10.8	13.6	14.2	17.7	13.7	13.7	16.06	14.5	10.8	13.8	13.09	76.33	70.42	79.88	0	0	0	37.5	265.44	12.89	13.74	12.39	38.6
2015/07/23	15.8	9.3	10.6	11.94	15.8	10.9	15.8	13.69	12.7	9.3	10.8	11.06	86.88	71.31	94.66	34	0.2	33.8	33.33	307.09	3.47	5.75	2.33	25.7
2015/07/24	13.2	8.3	12.3	10.74	13.2	8.8	12.4	11.8	12.4	8.3	8.5	10.14	90.31	87.89	91.7	4.6	1	3.6	36.46	182.97	6.61	5.97	6.98	25.7
2015/07/25	15.8	7.9	10.8	11.87	15.8	11.5	15.6	14.4	12.4	7.9	11	10.36	81.38	72.75	86.55	0	0	0	37.5	378.75	8.29	13.83	4.97	32.2
2015/07/26	18.8	-0.1	3.1	8.51	18.8	4.3	17.9	14.47	13.3	-0.1	2.8	4.94	81.16	68.5	88.75	0	0	0	37.5	383.69	1.12	2.62	0.21	12.9
2015/07/27	14.9	0.4	0.4	6.61	14.9	6.9	14.2	12.51	10.9	0.4	0.4	3.22	87.91	78.03	93.59	0.2	0	0.2	18.75	381.5	2.65	5.99	0.72	16.1
2015/07/28	14.2	5.4	9.8	10.21	14.2	7.6	14.2	12.61	10.9	5.4	9.8	8.77	83.35	76.77	87.73	0	0	0	0	-999	5.56	8.04	4.07	-999
2015/07/29	12	7.6	12	10.21	12	8.7	12	11.14	12	7.6	8.7	9.65	78.74	76.53	80.07	2	0	2	0	-999	8.12	12.35	5.59	-999
2015/07/30	13.1	6.5	9.8	10.4	13.1	10.9	12	12	10.9	6.5	9.8	9.43	79.11	75.62	81.97	0	0	0	0	-999	7.85	7.17	8.25	-999
2015/07/31	13.1	3.2	3.2	7.74	13.1	6.5	13.1	11.14	10.9	3.2	3.2	5.69	80.26	67.84	87.71	0	0	0	0	-999	3.82	5.66	2.71	-999
2015/08/01	17.5	2.1	3.2	9.07	17.5	6.5	15.3	13.47	10.9	2.1	10.9	6.43	80.61	66.02	90.71	0	0	0	0	-999	2.56	2.03	2.89	-999
2015/08/02	25.2	3.2	4.3	12.55	25.2	6.5	25.2	19.33	15.3	3.2	4.3	8.48	68.82	50.65	81.4	0	0	0	0	-999	1.88	3.01	1.19	-999
2015/08/03	14.2	6.5	12	11.59	14.2	10.9	13.1	12.98	13.1	6.5	10.9	10.75	78.52	77.24	79.28	2	0	2	0	-999	7.17	9.9	5.54	-999
2015/08/04	15.3	10.9	14.2	13.19	15.3	13.1	14.2	14.44	14.2	10.9	10.9	12.44	90.66	89.57	91.41	0.2	0	0.2	0	-999	11.13	13.47	9.73	-999
2015/08/05	16.4	7.6	12	12.43	16.4	12	16.4	15.06	15.3	7.6	10.9	10.74	85.18	76.94	91.37	0	0	0	0	-999	3.89	4.01	3.82	-999
2015/08/06	27.4	2.1	2.1	12.69	27.4	8.7	27.4	21.17	15.3	2.1	2.1	7.6	70.56	52.47	83.08	0	0	0	0	-999	1.37	1.97	1.01	-999
2015/08/07	17.5	2.1	17.5	9.75	17.5	9.8	17.5	15.67	14.2	2.1	2.1	6.21	79.92	68.64	86.68	0	0	0	0	-999	1.45	3.1	0.46	-999
2015/08/08	18.6	2.7	14.3	10.88	18.6	5.9	18	15.31	15.8	2.7	4.3	8.25	88.41	80.69	92.99	0.4	0.2	0.2	36.46	372.6	2.14	4.34	0.84	17.7
2015/08/09	15.6	3.3	10.9	10.79	15.6	3.6	15.4	13.34	11.7	3.3	11.1	9.04	78.54	67.87	85.84	0.2	0.2	0	40.63	366.59	6.49	9.54	4.4	27.4
2015/08/10	17.3	5.4	10.2	11.84	17.3	9.8	16.9	15.12	14.2	5.4	10	9.78	66.44	53.65	74.46	0	0	0	38.54	430.86	8.71	10.58	7.53	32.2
2015/08/11	18.3	0.8	10.6	9.56	18.3	5.1	17.7	14.42	13.2	0.8	10.3	6.23	79.88	66.92	88.74	0.2	0.2	0	40.63	320.38	1.18	2.5	0.28	12.9
2015/08/12	15.8	11.1	14.8	13.63	15.8	12.9	15	14.61	15.2	11.1	12.2	13.14	74.05	73.91	74.13	1.8	1	0.8	33.33	84.16	2.68	2.6	2.72	16.1
2015/08/13	15.7	11.7	12.2	13.01	15.7	12.9	13.5	14.44	13.2	11.7	12.2	12.2	91.66	89.43	92.93	6.8	2	4.8	36.46	214.91	7.99	11.52	5.97	32.2
2015/08/14	19.6	9	11.4	13.21	19.6	11.8	15.5	16.01	13.8	9	11.3	11.3	88.24	80.59	93.47	0.2	0.2	0	40.63	303.26	2.85	4.55	1.68	20.9
2015/08/15	15	9.6	12.1	12.58	15	12.2	14.9	13.93	14.6	9.6	12	12.1	90.8	87.44	91.99	2.2	0	2.2	26.04	87.96	7.18	11.1	5.8	32.2
2015/08/16	16.1	11.1	11.5	12.74	16.1	11.6	15.8	14.29	13.3	11.1	11.5	11.69	87.25	81.87	90.93	2.6	0.2	2.4	40.63	341.36	9.97	14.95	6.56	30.6
2015/08/17	20.7	4	6	12.59	20.7	4.3	20	16.48	14.9	4	14.1	9.8	85.47	77.47	91.18	0	0	0	41.67	410.9	4.54	7.13	2.69	27.4
2015/08/18	14.5	11.8	12.3	12.74	14.5	12.2	13.3	13.31	13.6	11.8	11.8	12.37	91.06	90.45	91.47	0.2	0	0.2	39.58	200.97	12.36	16.77	9.46	33.8
2015/08/19	20.2	10.3	10.7	14.48	20.2	11.5	19.2	17.13	15.3	10.3	10.7	12.58	77.34	67.85	84.13	0	0	0	41.67	430.88	11.17	14.29	8.94	29
2015/08/20	22.6	5.2	5.6	13.73	22.6	8.3	22.6	18.82	17.6	5.2	5.6	10.09	81.36	69.83	89.61	0	0	0	41.67	430.98	2.18	4.12	0.8	16.1
2015/08/21	24.3	5.9	8.6	15.08	24.3	7.6	24.2	20.27	18.8	5.9	8.5	11.38	80.48	67.15	90	0.4	0.2	0.2	41.67	436.73	2.39	3.28	1.75	19.3
2015/08/22	26.6	5.5	7.8	15.5	26.6	8.8	24.2	20.9	19.8	5.5	16.4	11.64	78.41	64.1	88.63	0.2	0	0.2	41.67	439.27	2.84	4.9	1.37	22.5
2015/08/23	18.9	13.1	13.7	15.04	18.9	13.8	15.9	16.54	16.8	13.1	13.4	14.23	88.19	85.09	89.89	0.2	0	0.2	35.42	212.03	3.97	5.56	3.1	22.5
2015/08/24	18.1	12.5	12.6	14.48	18.1	12.8	12.8	15.91	16.1	12.5	12.6	13.5	84.91	77.31	90.11	0.2	0.2	0	40.63	199.62	5.69	7.08	4.74	27.4
2015/08/25	20.4	9.1	13.4	14.69	20.4	13.3	20.4	17.56	16.3	9.1	13.2	12.81	85.46	76.61	91.26	5.6	0.2	5.4	39.58	330.61	3.53	5.47	2.26	20.9
2015/08/26	18.9	6.1	14.5	12.85	18.9	9.1	18.3	16.25	14.9	6.1	14.2	10.42	91.67	87.38	94.73	0.4	0.2	0.2	41.67	403.77	5.77	9.83	2.87	27.4
2015/08/27	22.4	10.1	11.4	15.25	22.4	11.8	20.7	18.34	16.5	10.1	11.4	13.04	88.36	81.65	93.16	0.6	0.4	0.2	41.67	370.45	1.82	2.48	1.34	16.1
2015/08/28	17.5	13.1	13.6	14.7	17.5	13.8	15.6	15.78	15.1	13.1	13.9	13.93	82.2	75.7	86.84	0	0	0	41.67	181.22	4.63	6.92	3	24.1
2015/08/29	17.6	12.7	13.1	14.34	17.6	13.4	13.4	15.98	14.6	12.7	13	13.31	81.63	77.49	84.22	0	0	0	38.54	361.16	7.95	9.66	6.87	33.8
2015/08/30	18.2	12.9	13.4	14.49	18.2	13.9	17.3	16.34	15.7	12.9	13.2	13.57	83.35	77.53	86.27	13.2	0	13.2	33.33	166.94	8.86	8.24	9.17	35.4
2015/08/31	15.8	12.4	12.9	13.46	15.8	13.3	14.3	14.22	13.3	12.4	13.1	12.92	94.9	93.85	95.64	3.2	2	1.2	41.67	232.9	9.93	15.18	6.18	37
2015/09/01	17.6	6.8	12.8	12.87	17.6	9.3	17	15.3	13.8	6.8	12.8	11.07	74.66	68.51	79.24	0	0	0	42.71	419.41	8.1	11.43	5.62	30.6
2015/09/02	18.2	9.1	11.9	13.99	18.2	12.2	17.9	16.34	15.2	9.1	11.6	12.23	67	61.61	71.02	0	0	0	42.71	488.51	12.37	15.09	10.34	30.6
2015/09/03	23.9	5.4	6.3	13.97	23.9	7.2	23.9	19.22	19.7	5.4	5.9	8.72	69.84	54.22	85.47	0	0	0	37.5	521.36	2.47	3.27	1.67	17.7
2015/09/04	24.1	5.4	12	14.93	24.1	8.7	24.1	20.25	18.6	5.4	9.8	11.14	65.4	50.95	75.72	0	0	0	0	-999	2.27	2.82	1.87	-999
2015/09/05	30.7	7.6	7.6	18.1	30.7	12	30.7	25.42	20.8	7.6	7.6	12.86	59.71	45.04	70.19	0	0	0	0	-999	1.98	2.99	1.26	-999
2015/09/06	25.2	12	12	16.35	25.2	14.2	14.2	19.59	19.7	12	12	14.04	67.41	59.87	72.79	0	0	0	0	-999	8.16	11.09	6.07	-999
2015/09/07	16.4	10.9	13.1	13.28	16.4	13.1	14.2	14.53	14.2	10.9	13.1	12.39	82.12	81.71	82.41	1	0	1	0	-999	6.78	7.86	6.01	-999
2015/09/08	17.5	8.7	10.9	12.37	17.5	9.8	17.5	14.64	14.2	8.7	10.9	10.74	75.94	65.97	83.06	0	0	0	0	-999	2.37	3.95	1.23	-999
2015/09/09	16.4	6.5	13.8	12.37	16.4	8.7	15.3	14.16	13.8	6.5	13.8	11.65	77.63	67.62	81.7	0	0	0	3.13	80.67	4.36	5.94	3.71	19.3
2015/09/10	13.8	7.6	11.9	11.59	13.8	10.8	13.4	12.26	12.6	7.6	12.1	11.17	86.15	86.73	85.78	4	2.6	1.4	38.54	207.32	6.15	7.47	5.32	27.4
2015/09/11	21.7	9.1	12.5	15.47	21.7	12.8	21.5	19.11	17.2	9.1	12.1	12.52	69.83	57.26	80.04	0	0	0	44.79	499.35	8.19	8.07	8.29	32.2
2015/09/12	22.2	8.6	14.3	16.04	22.2	13.7	21.7	19.36	17.6	8.6	13.4	13.35	69.94	58.37	79.32	0	0	0	44.79	404.19	10.82	13.89	8.32	37
2015/09/13	26.6	7.5	8.1	15.97	26.6	9.9	25.9	21.62	20	7.5	7.9	11.38	75.5	59.07	88.83	0	0	0	44.79	427.4	1.69	3.58	0.15	19.3
2015/09/14	27.2	12.4	13.9	18.35	27.2	16.2	23.4	22.62	23.3	12.4	14.2	15.67	74.05	57.32	84.54	0.4	0.2	0.2	38.54	204.27	7.11	9.17	5.81	37
2015/09/15	17.7	12.6	15.3	15.07	17.7	14.6	15.4	15.89	15.8	12.6	15.4	14.53	91.97	93.26	91.12	3.2	2.8	0.4	39.58	154.66	5.45	4.47	6.09	35.4
2015/09/16	18.8	8.4	13.5	14.32	18.8	10.3	17.9	16.47	14.3	8.4	13.5	12.58	83.13	75.51	89.3	0.2	0.2	0	44.79	409.77	7.87	10.16	6.01	27.4
2015/09/17	18.8	10.7	12.8	14.63	18.8	13.2	18.4	16.73	14.9	10.7	12.8	12.93	69.92	60.4	77.64	0	0	0	44.79	518.23	14.49	17.63	11.94	41.8
2015/09/18	20.2	12.1	12.8	15.43	20.2	13.2	19	17.8	16.3	12.1	12.9	13.51	66.82	59.19	73.02	0	0	0	44.79	517.95	14.82	16.58	13.38	38.6
2015/09/19	25.6	5.9	24.7	15.7	25.6	8.7	24.9	21.45	20.5	5.9	9.6	11.04	62.31	42.56	78.34	0	0	0	44.79	539.58	3.22	4.1	2.51	20.9
2015/09/20	30.2	5.5	5.5	15.86	30.2	13.3	21.3	22.59	19.6	5.5	5.5	11.06	72.75	51.92	87.63	0	0	0	41.67	344.3	4.56	6.6	3.09	29
2015/09/21	19.3	12.7	13.1	15.09	19.3	13.8	18.8	16.93	15.1	12.7	13.1	13.53	82.49	73.86	89.79	0	0	0	45.83	308.57	6.36	7.55	5.36	24.1
2015/09/22	21.2	11.3	11.4	15.13	21.2	11.8	20.1	17.76	15.9	11.3	11.4	12.9	77.26	66.84	86.08	0.2	0.2	0	45.83	468.43	4.6	6.48	3.02	24.1
2015/09/23	23	7.9	12.1	15.8	23	11.6	22.4	20.12	17.7	7.9	9.3	11.99	73.75	59.29	86.51	0	0	0	46.88	483.33	3.35	6.33	0.72	19.3
2015/09/24	21.4	7	14.7	15.16	21.4	11.7	21.4	18.82	15.8	7	11.5	12.06	81.74	69.82	91.83	0.2	0.2	0	45.83	511.07	5.55	7.57	3.85	24.1
2015/09/25	24.1	12.3	13.3	16.97	24.1	14.2	24.1	19.9	18.3	12.3	13.3	14.49	80.56	69.2	90.17	0	0	0	45.83	412.36	4.35	5.45	3.42	19.3
2015/09/26	17.8	13.2	14.2	15.08	17.8	13.4	17.3	16.22	15.3	13.2	14.3	14.23	85.58	81.17	88.87	0	0	0	42.71	372.39	12.91	15.9	10.68	35.4
2015/09/27	19.3	8.9	13.2	14.35	19.3	12.7	18.8	16.22	14.6	8.9	13.2	12.83	79.45	73.51	84.26	0.6	0.2	0.4	44.79	439.05	13.35	14.72	12.24	46.7
2015/09/28	20.7	6.6	6.6	12.93	20.7	9.8	20.7	17.31	14.5	6.6	6.6	9.07	80.71	68.93	91.1	0.2	0	0.2	46.88	433	3.11	6.04	0.53	20.9
2015/09/29	19.2	6.9	10	12.93	19.2	10.3	17.4	15.87	14.5	6.9	9.7	10.64	85.24	74.55	93.56	2	0.2	1.8	43.75	263.12	3.97	7.63	1.13	27.4
2015/09/30	16.3	11.1	11.5	13.16	16.3	11.6	15.8	14.47	13.8	11.1	11.4	12.05	83.29	80.77	85.42	10.8	1.4	9.4	45.83	300.3	9.53	12.79	6.78	30.6
2015/10/01	22.8	4.2	9.3	13.18	22.8	6.3	21.4	17.73	15	4.2	9.3	9	68.71	54.85	81.46	0	0	0	47.92	446.63	2.64	3.51	1.83	24.1
2015/10/02	20.2	5.4	15.4	13.19	20.2	8.1	19.9	16.5	15	5.4	14.1	10.14	79.49	68.43	89.66	0	0	0	47.92	433.96	4.73	6.71	2.91	24.1
2015/10/03	21.3	11.9	12	15.04	21.3	12.5	20.3	17.07	15.7	11.9	12	13.4	87.49	83.49	90.74	0.4	0.2	0.2	44.79	375.91	6.85	8.26	5.7	25.7
2015/10/04	18.9	10.3	16	14.64	18.9	11.9	17.1	16.17	17.2	10.3	10.6	13.3	88.71	87	90.22	0.2	0	0.2	46.88	257.31	4.59	7.26	2.23	24.1
2015/10/05	23.6	10.1	14	16.85	23.6	13	21.6	20.1	17.6	10.1	13.9	13.87	75.46	61.41	88.38	0.2	0.2	0	47.92	521.28	4.03	5.04	3.1	19.3
2015/10/06	19.7	5.3	8.2	10.75	19.7	7	15.1	15.12	17.5	5.3	5.3	8.95	87.79	80.45	90.82	0	0	0	9.38	284.11	0.94	1.62	0.66	6.4
2015/10/07	21.9	8.7	9.8	15.16	21.9	10.9	20.8	18.23	16.4	8.7	9.8	12.09	78.17	67.63	88.72	0	0	0	0	-999	5.21	7.55	2.88	-999
2015/10/08	21.9	9.8	20.8	15.9	21.9	10.9	21.9	18.78	16.4	9.8	9.8	13.01	80.37	70.21	90.54	0	0	0	0	-999	3.95	4.67	3.23	-999
2015/10/09	26.3	14.2	14.2	19.1	26.3	14.2	26.3	22.27	19.7	14.2	14.2	15.94	73.47	64.22	82.72	0	0	0	0	-999	3.71	2.99	4.43	-999
2015/10/10	18.6	12	15.3	15.35	18.6	14.2	17.5	16.49	16.4	12	13.1	14.2	73.43	62.02	84.85	0.2	0	0.2	0	-999	6.83	7.89	5.76	-999
2015/10/11	19.7	8.7	9.8	14.11	19.7	12	17.5	16.68	14.2	8.7	9.8	11.54	73.13	64.07	82.19	0	0	0	0	-999	6.28	7.59	4.98	-999
2015/10/12	19.7	12	13.1	15.3	19.7	13.1	18.6	17.04	15.3	12	13.1	13.56	73.02	64.68	81.36	0	0	0	0	-999	5.63	6.99	4.28	-999
2015/10/13	18.6	12	12	14.57	18.6	13.1	16.4	16.58	14.2	12	12	12.55	79.58	71.73	87.43	1	0	1	0	-999	5.84	9.17	2.51	-999
2015/10/14	18.6	10.9	13.1	14.43	18.6	13.1	15.3	16.31	14.2	10.9	12	12.55	76.35	68.92	83.79	0	0	0	0	-999	7.03	8.57	5.48	-999
2015/10/15	17.5	9.8	10.9	13.65	17.5	9.8	17.5	15.58	14.2	9.8	10.9	11.73	71.84	64.75	78.93	0	0	0	0	-999	3.28	4.07	2.49	-999
2015/10/16	20.8	6.5	20.8	14.68	20.8	10.9	20.8	17.77	16.4	6.5	16.4	11.3	69.27	58.76	80.73	0	0	0	0	-999	3.68	4.52	2.76	-999
2015/10/17	23	8.7	17.5	16.4	23	10.9	23	19.79	17.5	8.7	17.5	13.01	78.74	67.79	89.7	0	0	0	0	-999	5.85	7.19	4.52	-999
2015/10/18	26.3	14.2	14.2	20.39	26.3	16.4	26.3	23.09	23	14.2	14.2	17.68	67.06	58	76.13	0	0	0	0	-999	10.34	11.16	9.52	-999
2015/10/19	27.4	17.5	17.5	21.3	27.4	19.7	23	23.46	20.8	17.5	18.6	19.15	70.14	64.83	75.44	0	0	0	0	-999	5.71	6.34	5.09	-999
2015/10/20	30.7	15.3	17.5	20.75	30.7	16.4	21.9	23.55	19.7	15.3	18.6	17.96	77.34	66.72	87.96	0	0	0	0	-999	3.43	4.05	2.82	-999
2015/10/21	21.9	16.4	16.4	18.22	21.9	16.4	19.7	19.4	18.6	16.4	16.4	17.13	75.64	67.74	82.88	0	0	0	0	-999	13.14	14.68	11.72	-999
2015/10/22	26.3	14.2	18.2	19.62	26.3	14.2	24.1	22.63	20.8	14.2	19.8	18.22	61.84	54.36	65.29	0	0	0	0	-999	11.35	8.61	12.62	29
2015/10/23	31.2	8.8	14	20.75	31.2	9.7	30.8	26.06	23.4	8.8	10.1	15.23	60.93	47.41	75.02	0	0	0	51.04	497.02	5.25	8.55	1.81	30.6
2015/10/24	32.1	11.3	14.8	20.7	32.1	14.5	30.6	26.03	19.3	11.3	15.5	15.37	68.06	51.71	84.42	0	0	0	50	575.56	6.54	7.51	5.57	32.2
2015/10/25	24.6	15.4	16.4	18.58	24.6	17.1	21.9	20.66	17.7	15.4	16.5	16.59	72.47	64.68	79.94	0	0	0	48.96	395.89	8.92	9.47	8.39	30.6
2015/10/26	31.1	12.3	17.1	22.51	31.1	12.3	31.1	26.8	25.3	12.4	16.7	18.04	58.45	45.96	71.47	0	0	0	51.04	574.57	7.62	9.24	5.92	29
2015/10/27	36.9	12.6	14.2	24.12	36.9	12.9	34.8	30.29	26.1	12.6	14.2	17.68	61.65	43.92	80.13	0	0	0	51.04	585.57	3.25	5.09	1.33	19.3
2015/10/28	29.6	13.9	15	19.7	29.6	16.3	22.5	23.03	18.3	13.9	17.4	16.23	79.89	71.14	89	0	0	0	51.04	552.27	6.21	8.01	4.32	29
2015/10/29	24.8	16.4	16.5	19.92	24.8	17	24.1	22.18	19.7	16.4	16.5	17.56	78.08	70	86.51	0	0	0	51.04	574.33	12.72	14.72	10.62	35.4
2015/10/30	25.3	16.5	16.7	20.03	25.3	16.6	23.7	22.04	19.3	16.5	16.8	17.83	76.53	70.86	82.7	0	0	0	52.08	539.22	14.13	15.38	12.77	40.2
2015/10/31	20.8	12.8	15.8	16.87	20.8	15.5	18.8	18.26	17.1	12.8	15.8	15.42	71.83	63.86	80.15	0	0	0	51.04	301.94	7.69	9.05	6.27	25.7
2015/11/01	18.6	12.3	12.8	14.02	18.6	12.3	13.8	14.79	13.9	12.6	13.3	13.32	85.13	82.61	87.44	19.4	10.6	8.8	47.92	278.41	10.42	14.8	6.39	51.5
2015/11/02	20.5	10.1	20.4	15.57	20.5	12.2	20.4	18.14	15.9	10.1	12.2	12.9	68.34	60.94	76.06	0	0	0	51.04	616.27	10.34	14.46	6.05	37
2015/11/03	26.9	13.7	14	19.39	26.9	14.3	24.6	22.49	21.7	13.7	13.9	16.16	53.97	44.73	63.6	0	0	0	51.04	621.1	11.23	12.26	10.15	32.2
2015/11/04	32.3	8.3	32.3	20.92	32.3	9.9	32.3	26.39	22.8	8.3	8.7	14.72	56.32	40.98	73.71	0	0	0	53.13	559.78	2.84	4.47	1	19.3
2015/11/05	30.1	12.1	15.8	20.04	30.1	16	24.2	23.86	18.1	12.1	15.9	15.53	60.29	43.58	80.05	0	0	0	54.17	318.77	6.16	7.95	4.05	38.6
2015/11/06	24.3	14.6	15.5	18.08	24.3	15.5	15.5	20.45	17.2	14.6	14.7	15.5	75.44	64.76	87.04	0	0	0	52.08	509.4	8.07	9.45	6.56	29
2015/11/07	26.4	15.2	15.6	19.31	26.4	16.6	25.7	22.09	19.2	15.2	15.6	16.29	75.42	64.3	87.5	0	0	0	52.08	463.02	3.9	5.06	2.64	19.3
2015/11/08	26	14.6	17.2	19.46	26	15.3	25.2	22.49	19.4	14.6	14.7	16.3	74.41	59.73	89.7	0.6	0.2	0.4	51.04	604.22	4.24	6.6	1.77	19.3
2015/11/09	24	15.4	16.6	18.88	24	16.4	23.4	20.87	17.4	15.4	17.3	16.63	74.97	66.37	84.71	0.4	0.2	0.2	53.13	581.98	6.78	9.25	3.98	27.4
2015/11/10	22.9	10.7	18.2	17.9	22.9	16.1	21.9	20.32	17.3	10.7	17.1	15.27	63.33	54.04	73.43	0	0	0	52.08	604.04	12.37	16.07	8.36	35.4
2015/11/11	22.2	15	15.6	17.92	22.2	15.8	21	19.58	16.8	15	15.8	15.95	68.39	59.96	78.34	0	0	0	54.17	460.63	10.33	11.94	8.44	27.4
2015/11/12	23.4	8.1	23.4	16.55	23.4	8.1	23.4	20.07	16.6	8.3	14.6	12.57	71.31	62.69	81.09	0	0	0	53.13	618.55	6.15	9.85	1.96	32.2
2015/11/13	23.9	5	15.1	15.75	23.9	11.4	23.3	20.31	18.7	5	5	11	73.43	60.16	87.26	0.6	0	0.6	51.04	580.98	3.57	6.31	0.71	24.1
2015/11/14	21.7	7.7	20.4	15.53	21.7	12.7	20.9	18.72	15.7	7.7	14.3	12.06	67.6	55.1	81.2	0	0	0	52.08	467.8	4.64	7.08	1.98	27.4
2015/11/15	22.7	7.8	17.3	16.62	22.7	12.7	21.3	19.76	17	7.8	16	13.06	67.8	59.47	77.24	0	0	0	53.13	567.55	9.37	13.16	5.08	32.2
2015/11/16	26.7	7.3	15.7	17.86	26.7	9.8	26.7	21.66	17.6	7.3	15.8	13.56	68.36	56.55	81.76	0	0	0	53.13	633.98	6.29	7.25	5.2	27.4
2015/11/17	24.1	13.1	15.9	17.94	24.1	13.6	20.6	20.44	17.4	13.1	15.9	14.98	75.21	70.65	80.59	0	0	0	54.17	410.85	9.19	9.65	8.66	35.4
2015/11/18	25.2	14.4	14.4	18.13	25.2	14.9	24.8	20.89	17.5	14.4	14.5	15.37	61.29	50.86	71.73	0	0	0	21.88	580.43	13.02	12.71	13.34	33.8
2015/11/19	26.3	9.8	9.8	18.46	26.3	14.2	26.3	22.32	16.4	9.8	16.4	13.43	66.06	53.75	82.07	2	0	2	0	-999	6.01	7.5	4.08	-999
2015/11/20	17.5	13.1	14.2	14.98	17.5	14.2	15.3	15.81	15.3	13.1	14.2	14	65.28	56.9	75.19	0.8	0	0.8	0	-999	5.64	7.23	3.76	-999
2015/11/21	18.6	8.1	17.9	13.57	18.6	10.9	18.1	16.43	15.6	8.1	8.1	11.46	69.5	59.98	76.55	3	0	3	10.42	290.6	4.57	8.45	1.69	25.7
2015/11/22	24.7	6.6	17.9	17.06	24.7	11.8	23.7	20.93	17.3	6.6	16.6	12.48	68.75	54.23	85.91	0	0	0	54.17	608.69	3.67	4.74	2.4	22.5
2015/11/23	24.4	14.8	20.5	19.87	24.4	16.8	24.1	22.01	19.8	14.8	19.8	17.35	77.31	70.87	84.93	0	0	0	54.17	619.33	11.29	14.31	7.71	41.8
2015/11/24	31.9	12.7	18.8	21.64	31.9	13.5	30.9	25.12	19.7	12.7	19.4	17.53	72.66	62.54	84.61	0	0	0	54.17	624.94	7.47	7.73	7.18	35.4

Record length: 142 days; the first row is the parameter value calculated over the whole season (all available data); all subsequent rows are parameters calculated over a 24 hour period; each day (24hrs) is calculated from 00:00 to 23:59; night hours are defined as the period in each 24 hours when solar radiation ≤ 30 W.m-2; day hours are defined as the period in each 24 hours when solar radiation > 30 W.m-2; temperatures are in °C; wind speed is in km.h-1; rainfall is in mm; solar radiation is in W.m-2; missing/bad data are flagged as -999.

Appendix A3.5: Summary of daily weather parameter values for Cycle 4 (S-2016)

DATE (YYYY-MM-DD)	TEMP_24hr_MAX	TEMP_24hr_MIN	TEMP_24hr_MODE	TEMP_24hr_MEAN	TEMP_day_MAX	TEMP_day_MIN	TEMP_day_MODE	TEMP_day_MEAN	TEMP_night_MAX	TEMP_night_MIN	TEMP_night_MODE	TEMP_night_MEAN	HUMIDITY_24hr_MEAN	HUMIDITY_day_MEAN	HUMIDITY_night_MEAN	RAIN_24hr_TOTAL	RAIN_day_TOTAL	RAIN_night_TOTAL	SOLAR_daylight_PERCENT	SOLAR_day_MEAN	WINDSPEED_24hr_MEAN	WINDSPEED_day_MEAN	WINDSPEED_night_MEAN	WINDGUST_24hr_MAX
Highlight rules	> 32°C	≤ 0°C				< 7°C								< 40%										
2016-01-00	36.8	7.4	17.7	21.34	36.8	7.7	25.6	24.65	29.1	7.4	18.2	18.16	72.12	61.35	82.49	40.2	5.6	34.6	45.56	517.94	7.55	10.1	5.1	**45.1**
2016/01/13	29.3	20	24.3	24.26	29.3	21.6	25.4	25.96	24.6	20	20.3	22.25	74	69.31	79.55	0	0	0	54.17	604.63	16.4	20.9	11.07	45.1
2016/01/14	26.4	17.9	19.1	22.17	26.4	18.8	25.7	23.81	22.8	17.9	18.8	20.31	65.82	56.14	76.8	0	0	0	53.13	576.98	17.41	18.3	16.41	38.6
2016/01/15	33	20.9	21.1	25.94	33	22.7	33	29.1	26.6	20.9	21.1	22.36	53.97	44.1	65.16	0	0	0	53.13	620.39	13.6	14.28	12.83	40.2
2016/01/16	35.1	17.1	20.8	26.15	35.1	17.1	34.1	29.64	25.7	17.2	21.3	21.66	54.71	45.96	65.95	0	0	0	56.25	578.46	9.39	11.78	6.31	33.8
2016/01/17	36.8	18.5	20.5	26.26	36.8	20.2	31.9	30.5	26.7	18.5	19.5	21.25	57.44	46.21	70.7	0	0	0	54.17	544.4	5.49	8.1	2.4	22.5
2016/01/18	33.2	17.2	17.2	24.51	33.2	17.9	32.7	28.77	23.9	17.2	17.2	19.68	64.18	52.45	77.47	0	0	0	53.13	561.25	5.09	6.77	3.17	24.1
2016/01/19	35.2	19.3	20.2	27.31	35.2	20.3	33.2	31.07	29.1	19.3	20.1	23.04	56.71	46.33	68.47	0	0	0	53.13	602.73	9.32	11.31	7.08	35.4
2016/01/20	33.6	20.4	20.9	26.91	33.6	21.9	33.1	30.11	28.3	20.4	20.8	23.28	60.05	51.22	70.07	0	0	0	53.13	588.27	10.17	11.78	8.34	32.2
2016/01/21	35.3	18.5	30.9	27.27	35.3	19.3	33	30.68	27.9	18.5	25.2	23.23	61.72	52.69	72.39	0	0	0	54.17	535.17	8.89	12.41	4.72	35.4
2016/01/22	32.4	19.3	27.7	25.6	32.4	20.3	29.6	28.11	26.7	19.3	24.8	22.77	68.5	61.92	75.96	0	0	0	53.13	550.96	9.18	13.75	4	37
2016/01/23	30.8	17.6	19.2	23	30.8	17.9	28.9	26.01	22.4	17.6	19.8	19.6	75.53	66.08	86.24	0	0	0	53.13	587.14	8.63	10.67	6.33	30.6
2016/01/24	27.7	18.3	27.4	22.52	27.7	19.9	27.5	25.1	22.1	18.3	18.3	19.73	77.04	65.66	89.41	3.4	0	3.4	52.08	541.14	6.05	6.48	5.59	24.1
2016/01/25	24.7	16.2	18.4	19.72	24.7	16.6	22.7	21.13	20.1	16.2	18.7	18.31	83.39	76.35	90.42	4.6	0.4	4.2	50	475.83	6.56	10.66	2.47	30.6
2016/01/26	28.3	13.6	13.6	20.77	28.3	17.4	26.3	24.52	22	13.6	13.6	16.7	72.99	63.7	83.09	0	0	0	52.08	562.94	3.39	5.8	0.77	20.9
2016/01/27	26.7	17.3	17.3	21.16	26.7	18.3	24.4	23.29	20.7	17.3	17.3	18.65	73.78	64.85	84.34	0	0	0	54.17	429.31	6.54	8.64	4.07	25.7
2016/01/28	28.1	16.9	19.6	22.19	28.1	17.1	25.6	24.63	21.6	16.9	19.7	19.42	73.6	61.86	86.91	0	0	0	53.13	508.29	6.46	8.39	4.27	27.4
2016/01/29	29.1	15.6	29	21.95	29.1	17.3	29.1	25.61	20.9	15.6	16.6	17.98	76.78	65.68	88.85	0	0	0	52.08	627.92	7.72	10.08	5.17	32.2
2016/01/30	28.7	15.9	16.4	22.56	28.7	17.2	28.4	25.14	25.6	15.9	16.3	19.75	77.94	70.9	85.59	0	0	0	52.08	621.02	7.51	11.17	3.53	32.2
2016/01/31	35.3	16.4	17.6	25.64	35.3	18.1	35.1	30.92	26.7	16.4	17.5	19.9	67.8	52.6	84.33	0	0	0	52.08	624	3.06	5.71	0.17	20.9
2016/02/01	32.6	16.2	18.8	24.2	32.6	21.8	30.9	28.12	22.8	16.2	21.3	19.94	74.23	60.76	88.87	0	0	0	52.08	569.8	6.62	8.55	4.52	29
2016/02/02	26.8	19.2	19.9	22.26	26.8	20.1	25.7	24.28	20.6	19.2	19.9	20.06	80.1	70.6	90.43	0	0	0	52.08	567.8	14.46	16.64	12.09	38.6
2016/02/03	25.8	17.6	19.7	21.24	25.8	17.9	25.8	22.82	21.6	17.6	19.8	19.52	71.28	63.42	79.83	0	0	0	52.08	581.12	15.45	17.67	13.03	35.4
2016/02/04	32.2	14.3	18.7	22.2	32.2	14.9	29.8	26.16	26.2	14.3	18.7	19.22	68.49	57.48	76.75	0	0	0	15.63	477.13	5.17	4.92	5.36	29
2016/02/05	35.8	19	19	26.25	35.8	19	35.8	30.35	25	19	19	21.4	56.87	46.56	69.05	0	0	0	0	-999	3.12	3.95	2.14	-999
2016/02/06	29.8	19	21.4	23.65	29.8	21.4	25	26.02	22.6	19	21.4	20.85	71.72	67.63	76.55	0	0	0	0	-999	6.53	8.31	4.42	-999
2016/02/07	26.2	19	20.2	22.55	26.2	20.2	26.2	24.08	22.6	19	19	20.56	78.33	70.42	88.62	0	0	0	0	-999	16.81	19.02	14.19	-999
2016/02/08	32.2	17.8	19	25.5	32.2	19	32.2	28.78	27.4	17.8	20.2	21.62	64.98	55.95	75.65	0	0	0	0	-999	6.6	8.38	4.5	-999
2016/02/09	35.8	17.3	17.3	24.55	35.8	20.2	28.7	29.99	26.6	17.3	19.1	20.77	61.74	48.39	70.98	0	0	0	7.29	197.57	2.96	5.32	1.32	14.5
2016/02/10	34.8	11.8	30.4	23.03	34.8	16.9	32	29.37	26.9	11.8	12.9	16.69	66.46	49.65	83.27	0	0	0	50	605	2.97	5.81	0.13	19.3
2016/02/11	30.4	17.9	19.1	22.95	30.4	19.9	28.8	26.1	22.7	17.9	19.3	19.67	72.69	58.59	87.38	0	0	0	51.04	557.78	6.59	8.41	4.69	29
2016/02/12	28.2	17.5	18.2	22.37	28.2	18.1	27.3	24.93	22.3	17.5	20.5	19.59	77.02	66.16	88.83	0	0	0	52.08	562.74	9.8	12.6	6.76	29
2016/02/13	27.3	15.3	19.4	21.83	27.3	17.1	26.8	24.53	22.3	15.3	19.9	18.89	77.11	67.76	87.28	0	0	0	52.08	497.5	3.84	5.87	1.63	25.7
2016/02/14	26.2	16.8	17.6	20.74	26.2	17.2	23.9	22.98	20.3	16.8	17.7	18.49	70.8	62.96	78.65	0.2	0.2	0	50	359.69	5.56	7.58	3.54	25.7
2016/02/15	24.9	10.9	19.8	19.24	24.9	16.3	23.7	21.96	20.2	10.9	18.8	16.4	68.56	59.45	78.06	0	0	0	51.04	325.31	4.97	6.8	3.07	25.7
2016/02/16	28.8	18.3	18.8	23	28.8	19.8	28.8	25.77	24.6	18.3	18.7	20.23	61.9	54.33	69.46	0.2	0.2	0	50	595.08	13.86	16.13	11.6	40.2
2016/02/17	33.7	18.4	20.1	25.02	33.7	19.1	33.2	29.3	23.7	18.4	20.4	20.74	59.17	46.73	71.6	0	0	0	50	575.65	5.74	7.58	3.9	22.5
2016/02/18	29	15.9	17.7	21.04	29	17.7	25.3	23.95	20.2	15.9	16.8	18.14	76.65	65.98	87.31	0	0	0	50	558.15	6.1	9.89	2.3	30.6
2016/02/19	24.8	15.3	17.3	18.64	24.8	17.1	19.4	20.68	18.3	15.3	18.3	16.92	85.98	77.7	92.98	3	3	0	45.83	306.41	4.74	8.16	1.85	27.4
2016/02/20	24.8	13.8	18.9	18.94	24.8	14.6	23.5	21.74	20.3	13.8	18.8	16.25	80.73	71.23	89.84	0.2	0	0.2	48.96	471.11	7.41	8.18	6.66	27.4
2016/02/21	24.5	17.1	17.2	20.03	24.5	17.8	24.2	22.4	19.8	17.1	17.2	17.75	77.67	67.66	87.27	0.2	0.2	0	48.96	594.98	12.68	16.17	9.33	35.4
2016/02/22	25	16.7	16.8	19.89	25	17.5	23.8	22.54	19.1	16.7	16.9	17.34	72.65	62.02	82.84	0	0	0	48.96	596.77	12.03	14.52	9.65	35.4
2016/02/23	25.5	15.3	15.3	19.58	25.5	16.2	24.4	22.57	19.9	15.3	15.3	16.71	77.02	66.21	87.39	0	0	0	48.96	596.36	9.06	11.99	6.26	29
2016/02/24	26.4	11.1	25.9	19.45	26.4	14.4	26.2	23	20.8	11.1	12.5	15.91	76.08	65.63	86.54	0.4	0.2	0.2	50	537.69	4.95	8.01	1.9	22.5
2016/02/25	29.6	11.6	11.9	20.89	29.6	14.9	29.6	25.69	24.1	11.6	11.6	16.28	69.33	56.4	81.73	0	0	0	48.96	566.02	1.97	3.68	0.33	19.3
2016/02/26	24.6	16.1	16.8	19.9	24.6	17.4	23.3	22.04	19.5	16.1	17.1	17.84	76.13	69.62	82.37	0.2	0.2	0	48.96	339.83	6.08	9.21	3.08	30.6
2016/02/27	25.1	13.3	18.6	19.32	25.1	16.7	24.7	22.36	19.6	13.3	15.1	16.41	64.55	52.77	75.86	0.2	0.2	0	48.96	573.81	10.38	13.8	7.09	33.8
2016/02/28	28.9	12.4	27.1	21.29	28.9	16.4	27.9	25.4	22.6	12.4	21.1	17.5	65.51	53.11	76.92	0	0	0	47.92	592.89	7.07	9.9	4.46	27.4
2016/02/29	29.9	15	15.1	21.04	29.9	16.7	29	25.11	21.4	15	15.1	17.29	75.82	64.67	86.08	0	0	0	47.92	577.98	6.42	9.09	3.96	27.4
2016/03/01	27.6	12.2	17.6	20.32	27.6	12.2	26.9	23.57	21.2	12.4	17.7	17.2	76.33	64.83	87.37	0.2	0.2	0	48.96	524.85	4.26	5.5	3.08	22.5
2016/03/02	27.7	16.9	20.3	22.28	27.7	19.8	26.9	25.03	22.2	16.9	20.2	19.75	77.64	67.2	87.24	0	0	0	47.92	525.78	6.6	9.41	4.01	25.7
2016/03/03	29.3	15.2	18.8	22.05	29.3	17.6	29.3	25.47	22.6	15.2	18.6	18.9	80.91	70	90.94	0.2	0	0.2	47.92	556.3	6.55	9.44	3.88	29
2016/03/04	33.2	15.8	17.1	24.08	33.2	17.3	32.4	29.06	24.8	15.8	19.7	19.68	71.09	55.64	84.73	0	0	0	46.88	566.71	3.82	6.22	1.7	20.9
2016/03/05	29.8	17.2	19.6	21.5	29.8	19.3	19.7	23.25	21.9	17.2	19.8	19.89	89.84	85.59	93.76	1	0.2	0.8	47.92	272.74	4.96	4.33	5.54	22.5
2016/03/06	29.8	16.7	18.5	21.46	29.8	19	26.1	24.86	19.7	16.7	19.3	18.58	82.71	73.09	90.85	0.2	0.2	0	45.83	553.09	10.35	9.94	10.69	37
2016/03/07	23.9	16.2	17.5	19.66	23.9	17.5	22.4	21.95	19.8	16.2	17.4	17.63	70.8	60.78	79.65	0	0	0	46.88	545.56	12.56	15.78	9.73	35.4
2016/03/08	24.2	14.2	16.9	19.52	24.2	16.4	24	22.11	19.6	14.2	16.7	17.22	68.78	57.82	78.45	0	0	0	46.88	565.42	12.72	17.23	8.74	38.6
2016/03/09	26.1	10.2	18.2	18.75	26.1	13.2	24.6	22.6	20	10.2	18.2	15.35	73.92	63.91	82.75	0	0	0	46.88	563.02	7.95	10.58	5.63	35.4
2016/03/10	25.3	16.4	17	20.17	25.3	17.3	25.1	22.82	19.4	16.4	17.2	17.84	75.35	63.38	85.92	0	0	0	46.88	533.2	12.79	15.02	10.83	38.6
2016/03/11	28.7	17.7	19.3	23.02	28.7	20.8	28.3	26.4	23.8	17.7	19.2	20.04	65.4	53.76	75.67	0	0	0	46.88	545.44	10.92	13.03	9.06	37
2016/03/12	30.4	13.9	14.4	20.93	30.4	15.2	28	25.56	20.4	13.9	14.6	16.85	74.94	60.07	88.06	0	0	0	46.88	538.13	2.97	5.27	0.94	19.3
2016/03/13	22.8	16	19.4	19.56	22.8	18	22.3	20.8	20.1	16	18.8	18.48	70.07	60.07	78.9	0	0	0	46.88	445.18	12.24	17.24	7.82	35.4
2016/03/14	29.6	7.4	29.6	19.22	29.6	7.7	29.6	24.69	22.8	7.4	10	14.59	66.13	50.82	79.08	0	0	0	45.83	554	3.57	5.87	1.63	20.9
2016/03/15	26.2	13.9	15.7	20.67	26.2	17.8	26	23.9	22.6	13.9	15.5	17.93	70.15	60.45	78.35	0	0	0	45.83	540.95	10.36	16.06	5.53	40.2
2016/03/16	31.2	9.7	31.1	21.39	31.2	13.4	31.1	27.29	25.3	9.7	18.5	16.6	67.44	52.65	79.43	0	0	0	44.79	541.81	4.46	7.83	1.73	25.7
2016/03/17	27.1	14.4	16.4	19.26	27.1	14.7	23.7	21.55	20.2	14.4	16.9	17.33	81.14	71.41	89.37	0	0	0	45.83	487.66	4.81	6.84	3.08	22.5
2016/03/18	26	13.4	13.5	18.99	26	14.1	25.7	22.36	20.1	13.4	13.5	16.13	81	69.8	90.48	0.4	0	0.4	45.83	509.61	3.65	5.64	1.97	22.5
2016/03/19	24.2	12.5	16.6	18.67	24.2	12.6	23.5	21.06	19.7	12.5	16.7	16.56	72.46	59.38	84	0.8	0	0.8	46.88	487.78	4.06	6.75	1.69	25.7
2016/03/20	25.4	12.7	13.8	18.17	25.4	14.7	24.4	21.7	18.7	12.7	14	15.3	67.2	52.33	79.26	0	0	0	44.79	415.37	4.15	7.52	1.42	25.7
2016/03/21	23	12.1	12.3	17.55	23	14.8	22.9	20.64	20.2	12.1	12.3	15.04	72.91	63.77	80.32	0.4	0	0.4	44.79	521.42	6.62	11.61	2.58	32.2
2016/03/22	27.1	9.2	9.4	16.86	27.1	11.4	24.6	21.6	20.5	9.2	12.1	13.02	73.3	58.77	85.09	0.2	0.2	0	44.79	382.4	3.12	4.88	1.69	20.9
2016/03/23	24.4	12.2	13.8	17.81	24.4	13.3	23.9	21.37	18.6	12.2	13.8	14.91	78.8	66.58	88.72	0.2	0	0.2	44.79	501.7	5.14	7.8	2.99	25.7
2016/03/24	26.4	15.3	20.1	20.87	26.4	19.2	25.7	23.48	21.2	15.3	20	18.76	68.58	60.63	75.04	0	0	0	44.79	490.91	11.99	14.91	9.63	35.4
2016/03/25	28	12.7	20.1	20.3	28	16.8	24.1	23.7	20.3	12.7	20.3	17.54	71.88	62.16	79.75	0	0	0	44.79	363.33	4.35	5.74	3.23	20.9
2016/03/26	22.4	13	16.7	17.75	22.4	16.5	20.8	19.99	20.3	13	16.4	16.14	77.85	64.88	87.13	20.4	0	20.4	41.67	277.82	7.32	11	4.7	45.1
2016/03/27	20	12.6	15.4	15.71	20	13.2	18.4	17.43	16.9	12.6	15.6	14.26	79.17	70.23	86.73	3.2	0.2	3	45.83	261.11	5.67	8.19	3.54	29
2016/03/28	24.1	8.8	14.6	16.75	24.1	13.9	23.6	20.51	18.3	8.8	14.3	13.7	71.53	57.77	82.7	0	0	0	44.79	441.21	3.47	5.25	2.02	17.7
2016/03/29	20.8	7.4	18.1	15.35	20.8	11.7	20.6	18.61	17.4	7.4	17.3	13.13	80.78	68.49	89.19	0.4	0	0.4	40.63	241.41	8.04	10.59	6.31	38.6

Record length: 77 days; the first row is the parameter value calculated over the whole season (all available data); all subsequent rows are parameters calculated over a 24 hour period; each day (24hrs) is calculated from 00:00 to 23:59; night hours are defined as the period in each 24 hours when solar radiation ≤ 30 W.m-2; day hours are defined as the period in each 24 hours when solar radiation > 30 W.m-2; temperatures are in °C; wind speed is in km.h-1; rainfall is in mm; solar radiation is in W.m-2; missing/bad data are flagged as -999.

Appendix A4.1 – Carcass biographics

Table A4.1: Demographic details of pig carcasses comprising experimental sample.

CarcassID	Carcass #	Sex	Sub_fat	W	L	S	ToD	ToDep	TbtwnDDep	Year	Season
CFDS/O-1	1	M	0.7	34	125	55	07:55	09:44	01:49:00	2014	W
CFDS/O-1	2	M	0.6	33	123	57	07:50	09:59	02:09:00	2015	S
CFDS/O-1	3	M	0.6	31	121	55	07:45	09:37	01:52:00	2015	W
CFDS/O-1	4	M	0.5	27	114	51	08:15	09:21	01:06:00	2016	S
CFDS/O-2	5	F	0.6	36	120	54	07:55	09:49	01:54:00	2014	W
CFDS/O-2	6	F	0.8	28	125	56	07:50	09:52	02:02:00	2015	S
CFDS/O-2	7	F	0.7	28	122	54	07:45	09:41	01:56:00	2015	W
CFDS/O-2	8	F	0.6	26	122	55	08:15	09:26	01:11:00	2016	S
CFDS/C-1	9	M	0.6	38	124	55	07:55	09:58	02:03:00	2014	W
CFDS/C-1	10	M	0.8	27	126	57	07:50	09:38	01:48:00	2015	S
CFDS/C-1	11	M	0.6	28	128	56	07:45	09:49	02:04:00	2015	W
CFDS/C-1	12	M	0.6	24	118	53	08:15	09:31	01:16:00	2016	S
CFDS/C-2	13	F	0.6	35	119	58	07:55	09:55	02:00:00	2014	W
CFDS/C-2	14	F	0.7	27	125	56	07:50	09:45	01:55:00	2015	S
CFDS/C-2	15	F	0.6	27	123	55	07:45	09:53	02:08:00	2015	W
CFDS/C-2	16	F	0.6	28	117	54	08:15	09:35	01:20:00	2016	S

***Sex** is denoted by* M *(Male) and* F *(Female);* ***Sub-fat** = subcutaneous fat depth (cm);* ***W** = carcass width at broadest point of abdomen (cm);* ***L** = carcass length from snout to base of tail (cm);* ***S** = carcass stature from base of hoof to apex of shoulder;* ***ToD** = time of death;* ***ToDep** = time of deposition at research site;* ***TbtwnDDep** = time between death and deposition;* ***Season** is denoted by* W *(Winter) and* S *(Summer).*

APPENDIX A4.2
Source Code: Weight loss data interpolation
****

```
require(tidyverse)
require(data.table)
require(ggplot2)
require(splines2)

dfW2014 = fread('./1. W-2014 Weight loss plot (full dates).csv')
dfS2015 = fread('./2. S-2015 Weight loss plot (full dates).csv')
dfW2015 = fread('./3. W-2015 Weight loss plot (full dates).csv')
dfS2016 = fread('./4. S-2016 Weight loss plot (full dates).csv')

###########
#W-2014
###########

#CFDS-O-1

dfW2014CFDSO1 = dfW2014 %>%
  filter(Carcass=='CFDS-O-1') %>% #CHOOSE PIG
  select(-`Weight loss`, -`Cumulative % weight loss`, -`% Weight loss`, -Weight,
-`Grid weight`, -Carcass, -Date) %>% #
  rename(PigWeight = `Pig Weight`)

##COMPLETE CASES FOR FITTING LEARNING MODELS
dfCompleteW2014CFDSO1 = dfW2014CFDSO1[complete.cases(dfW2014CFDSO1),]

##LINEAR/SPLINE INTERPOLATION
linFunc = approxfun(dfCompleteW2014CFDSO1$Day, dfCompleteW2014CFDSO1$PigWeight,
ties = mean)
linPnts = linFunc(seq(dfW2014CFDSO1$Day))
linPntsSmall = linFunc(seq(dfCompleteW2014CFDSO1$Day))
dfW2014CFDSO1$LinInterp = linPnts

R2 = cor(dfCompleteW2014CFDSO1$PigWeight, linPntsSmall)^2
print(R2)

ggplot(dfW2014CFDSO1, aes(Day)) +
  geom_line(aes(x=Day, y = LinInterp), colour = 'lightgreen') +
  geom_point(aes(x=Day, y = LinInterp), colour = 'lightgreen', size = 3) +
  geom_point(aes(x=Day, y = PigWeight), colour='black')

##USE FITTED VALUES
dfImputedW2014CFDSO1 = dfW2014CFDSO1 %>%
  mutate(PigWeight=ifelse(is.na(PigWeight),LinInterp,PigWeight))
print(dfImputedW2014CFDSO1)
```

```
##OUTPUT TO .csv
fwrite(dfImputedW2014CFDSO1, file='Weightloss_W2014_CFDSO1_Imputed.csv')

###

#CFDS-O-2

dfW2014CFDSO2 = dfW2014 %>%
  filter(Carcass=='CFDS-O-2') %>% #CHOOSE PIG
  select(-`Weight loss`, -`Cumulative % weight loss`, -`% Weight loss`, -Weight,
-`Grid weight`, -Carcass, -Date) %>% #
  rename(PigWeight = `Pig Weight`)

##COMPLETE CASES FOR FITTING LEARNING MODELS
dfCompleteW2014CFDSO2 = dfW2014CFDSO2[complete.cases(dfW2014CFDSO2),]

##LINEAR/SPLINE INTERPOLATION
linFunc = approxfun(dfCompleteW2014CFDSO2$Day, dfCompleteW2014CFDSO2$PigWeight,
ties = mean)
linPnts = linFunc(seq(dfW2014CFDSO2$Day))
linPntsSmall = linFunc(seq(dfCompleteW2014CFDSO2$Day))
dfW2014CFDSO2$LinInterp = linPnts

R2 = cor(dfCompleteW2014CFDSO2$PigWeight, linPntsSmall)^2
print(R2)

ggplot(dfW2014CFDSO2, aes(Day)) +
  geom_line(aes(x=Day, y = LinInterp), colour = 'lightgreen') +
  geom_point(aes(x=Day, y = LinInterp), colour = 'lightgreen', size = 3) +
  geom_point(aes(x=Day, y = PigWeight), colour='black')

##USE FITTED VALUES
dfImputedW2014CFDSO2 = dfW2014CFDSO2 %>%
  mutate(PigWeight=ifelse(is.na(PigWeight),LinInterp,PigWeight))
print(dfImputedW2014CFDSO2)

##OUTPUT TO .csv
fwrite(dfImputedW2014CFDSO2, file='Weightloss_W2014_CFDSO2_Imputed.csv')

###

#CFDS-C-1

dfW2014CFDSC1 = dfW2014 %>%
  filter(Carcass=='CFDS-C-1') %>% #CHOOSE PIG
  select(-`Weight loss`, -`Cumulative % weight loss`, -`% Weight loss`, -Weight,
-`Grid weight`, -Carcass, -Date) %>% #
```

```
  rename(PigWeight = `Pig Weight`)

##COMPLETE CASES FOR FITTING LEARNING MODELS
dfCompleteW2014CFDSC1 = dfW2014CFDSC1[complete.cases(dfW2014CFDSC1),]

##LINEAR/SPLINE INTERPOLATION
linFunc = approxfun(dfCompleteW2014CFDSC1$Day, dfCompleteW2014CFDSC1$PigWeight,
ties = mean)
linPnts = linFunc(seq(dfW2014CFDSC1$Day))
linPntsSmall = linFunc(seq(dfCompleteW2014CFDSC1$Day))
dfW2014CFDSC1$LinInterp = linPnts

R2 = cor(dfCompleteW2014CFDSC1$PigWeight, linPntsSmall)^2
print(R2)

ggplot(dfW2014CFDSC1, aes(Day)) +
  geom_line(aes(x=Day, y = LinInterp), colour = 'lightgreen') +
  geom_point(aes(x=Day, y = LinInterp), colour = 'lightgreen', size = 3) +
  geom_point(aes(x=Day, y = PigWeight), colour='black')

##USE FITTED VALUES
dfImputedW2014CFDSC1 = dfW2014CFDSC1 %>%
  mutate(PigWeight=ifelse(is.na(PigWeight),LinInterp,PigWeight))
print(dfImputedW2014CFDSC1)

##OUTPUT TO .csv
fwrite(dfImputedW2014CFDSC1, file='Weightloss_W2014_CFDSC1_Imputed.csv')

###

#CFDS-C-2

dfW2014CFDSC2 = dfW2014 %>%
  filter(Carcass=='CFDS-C-2') %>% #CHOOSE PIG
  select(-`Weight loss`, -`Cumulative % weight loss`, -`% Weight loss`, -Weight,
-`Grid weight`, -Carcass, -Date) %>% #
  rename(PigWeight = `Pig Weight`)

##COMPLETE CASES FOR FITTING LEARNING MODELS
dfCompleteW2014CFDSC2 = dfW2014CFDSC2[complete.cases(dfW2014CFDSC2),]

##LINEAR/SPLINE INTERPOLATION
linFunc = approxfun(dfCompleteW2014CFDSC2$Day, dfCompleteW2014CFDSC2$PigWeight,
ties = mean)
linPnts = linFunc(seq(dfW2014CFDSC2$Day))
linPntsSmall = linFunc(seq(dfCompleteW2014CFDSC2$Day))
dfW2014CFDSC2$LinInterp = linPnts
```

```
R2 = cor(dfCompleteW2014CFDSC2$PigWeight, linPntsSmall)^2
print(R2)

ggplot(dfW2014CFDSC2, aes(Day)) +
  geom_line(aes(x=Day, y = LinInterp), colour = 'lightgreen') +
  geom_point(aes(x=Day, y = LinInterp), colour = 'lightgreen', size = 3) +
  geom_point(aes(x=Day, y = PigWeight), colour='black')

##USE FITTED VALUES
dfImputedW2014CFDSC2 = dfW2014CFDSC2 %>%
  mutate(PigWeight=ifelse(is.na(PigWeight),LinInterp,PigWeight))
print(dfImputedW2014CFDSC2)

##OUTPUT TO .csv
fwrite(dfImputedW2014CFDSC2, file='Weightloss_W2014_CFDSC2_Imputed.csv')

###########
#S-2015
###########

#CFDS-O-1

dfS2015CFDSO1 = dfS2015 %>%
  filter(Carcass=='CFDS-O-1') %>% #CHOOSE PIG
  select(-`Weight loss`, -`Cumulative % weight loss`, -`% Weight loss`, -Weight,
-`Grid weight`, -Carcass, -Date) %>% #
  rename(PigWeight = `Pig Weight`)

##COMPLETE CASES FOR FITTING LEARNING MODELS
dfCompleteS2015CFDSO1 = dfS2015CFDSO1[complete.cases(dfS2015CFDSO1),]

##LINEAR/SPLINE INTERPOLATION
linFunc = approxfun(dfCompleteS2015CFDSO1$Day, dfCompleteS2015CFDSO1$PigWeight,
ties = mean)
linPnts = linFunc(seq(dfS2015CFDSO1$Day))
linPntsSmall = linFunc(seq(dfCompleteS2015CFDSO1$Day))
dfS2015CFDSO1$LinInterp = linPnts

R2 = cor(dfCompleteS2015CFDSO1$PigWeight, linPntsSmall)^2
print(R2)

ggplot(dfS2015CFDSO1, aes(Day)) +
  geom_line(aes(x=Day, y = LinInterp), colour = 'lightgreen') +
  geom_point(aes(x=Day, y = LinInterp), colour = 'lightgreen', size = 3) +
  geom_point(aes(x=Day, y = PigWeight), colour='black')

##USE FITTED VALUES
dfImputedS2015CFDSO1 = dfS2015CFDSO1 %>%
```

```
  mutate(PigWeight=ifelse(is.na(PigWeight),LinInterp,PigWeight))
print(dfImputedS2015CFDSO1)

##OUTPUT TO .csv
fwrite(dfImputedS2015CFDSO1, file='Weightloss_S2015_CFDSO1_Imputed.csv')

###

#CFDS-2

dfS2015CFDSO2 = dfS2015 %>%
  filter(Carcass=='CFDS-O-2') %>% #CHOOSE PIG
  select(-`Weight loss`, -`Cumulative % weight loss`, -`% Weight loss`, -Weight,
-`Grid weight`, -Carcass, -Date) %>% #
  rename(PigWeight = `Pig Weight`)

##COMPLETE CASES FOR FITTING LEARNING MODELS
dfCompleteS2015CFDSO2 = dfS2015CFDSO2[complete.cases(dfS2015CFDSO2),]

##LINEAR/SPLINE INTERPOLATION
linFunc = approxfun(dfCompleteS2015CFDSO2$Day, dfCompleteS2015CFDSO2$PigWeight,
ties = mean)
linPnts = linFunc(seq(dfS2015CFDSO2$Day))
linPntsSmall = linFunc(seq(dfCompleteS2015CFDSO2$Day))
dfS2015CFDSO2$LinInterp = linPnts

R2 = cor(dfCompleteS2015CFDSO2$PigWeight, linPntsSmall)^2
print(R2)

ggplot(dfS2015CFDSO2, aes(Day)) +
  geom_line(aes(x=Day, y = LinInterp), colour = 'lightgreen') +
  geom_point(aes(x=Day, y = LinInterp), colour = 'lightgreen', size = 3) +
  geom_point(aes(x=Day, y = PigWeight), colour='black')

##USE FITTED VALUES
dfImputedS2015CFDSO2 = dfS2015CFDSO2 %>%
  mutate(PigWeight=ifelse(is.na(PigWeight),LinInterp,PigWeight))
print(dfImputedS2015CFDSO2)

##OUTPUT TO .csv
fwrite(dfImputedS2015CFDSO2, file='Weightloss_S2015_CFDSO2_Imputed.csv')

###

#CFDS-C-1

dfS2015CFDSC1 = dfS2015 %>%
  filter(Carcass=='CFDS-C-1') %>% #CHOOSE PIG
```

```
  select(-`Weight loss`, -`Cumulative % weight loss`, -`% Weight loss`, -Weight,
-`Grid weight`, -Carcass, -Date) %>% #
  rename(PigWeight = `Pig Weight`)

##COMPLETE CASES FOR FITTING LEARNING MODELS
dfCompleteS2015CFDSC1 = dfS2015CFDSC1[complete.cases(dfS2015CFDSC1),]

##LINEAR/SPLINE INTERPOLATION
linFunc = approxfun(dfCompleteS2015CFDSC1$Day, dfCompleteS2015CFDSC1$PigWeight,
ties = mean)
linPnts = linFunc(seq(dfS2015CFDSC1$Day))
linPntsSmall = linFunc(seq(dfCompleteS2015CFDSC1$Day))
dfS2015CFDSC1$LinInterp = linPnts

R2 = cor(dfCompleteS2015CFDSC1$PigWeight, linPntsSmall)^2
print(R2)

ggplot(dfS2015CFDSC1, aes(Day)) +
  geom_line(aes(x=Day, y = LinInterp), colour = 'lightgreen') +
  geom_point(aes(x=Day, y = LinInterp), colour = 'lightgreen', size = 3) +
  geom_point(aes(x=Day, y = PigWeight), colour='black')

##USE FITTED VALUES
dfImputedS2015CFDSC1 = dfS2015CFDSC1 %>%
  mutate(PigWeight=ifelse(is.na(PigWeight),LinInterp,PigWeight))
print(dfImputedS2015CFDSC1)

##OUTPUT TO .csv
fwrite(dfImputedS2015CFDSC1, file='Weightloss_S2015_CFDSC1_Imputed.csv')

###

#CFDS-C-2

dfS2015CFDSC2 = dfS2015 %>%
  filter(Carcass=='CFDS-C-2') %>% #CHOOSE PIG
  select(-`Weight loss`, -`Cumulative % weight loss`, -`% Weight loss`, -Weight,
-`Grid weight`, -Carcass, -Date) %>% #
  rename(PigWeight = `Pig Weight`)

##COMPLETE CASES FOR FITTING LEARNING MODELS
dfCompleteS2015CFDSC2 = dfS2015CFDSC2[complete.cases(dfS2015CFDSC2),]

##LINEAR/SPLINE INTERPOLATION
linFunc = approxfun(dfCompleteS2015CFDSC2$Day, dfCompleteS2015CFDSC2$PigWeight,
ties = mean)
linPnts = linFunc(seq(dfS2015CFDSC2$Day))
linPntsSmall = linFunc(seq(dfCompleteS2015CFDSC2$Day))
```

```
dfS2015CFDSC2$LinInterp = linPnts

R2 = cor(dfCompleteS2015CFDSC2$PigWeight, linPntsSmall)^2
print(R2)

ggplot(dfS2015CFDSC2, aes(Day)) +
  geom_line(aes(x=Day, y = LinInterp), colour = 'lightgreen') +
  geom_point(aes(x=Day, y = LinInterp), colour = 'lightgreen', size = 3) +
  geom_point(aes(x=Day, y = PigWeight), colour='black')

##USE FITTED VALUES
dfImputedS2015CFDSC2 = dfS2015CFDSC2 %>%
  mutate(PigWeight=ifelse(is.na(PigWeight),LinInterp,PigWeight))
print(dfImputedS2015CFDSC2)

##OUTPUT TO .csv
fwrite(dfImputedS2015CFDSC2, file='Weightloss_S2015_CFDSC2_Imputed.csv')

###########
#W-2015
###########

#CFDS-O-1

dfW2015CFDSO1 = dfW2015 %>%
  filter(Carcass=='CFDS-O-1') %>% #CHOOSE PIG
  select(-`Weight loss`, -`Cumulative % weight loss`, -`% Weight loss`, -Weight,
-`Grid weight`, -Carcass, -Date) %>% #
  rename(PigWeight = `Pig Weight`)

##COMPLETE CASES FOR FITTING LEARNING MODELS
dfCompleteW2015CFDSO1 = dfW2015CFDSO1[complete.cases(dfW2015CFDSO1),]

##LINEAR/SPLINE INTERPOLATION
linFunc = approxfun(dfCompleteW2015CFDSO1$Day, dfCompleteW2015CFDSO1$PigWeight,
ties = mean)
linPnts = linFunc(seq(dfW2015CFDSO1$Day))
linPntsSmall = linFunc(seq(dfCompleteW2015CFDSO1$Day))
dfW2015CFDSO1$LinInterp = linPnts

R2 = cor(dfCompleteW2015CFDSO1$PigWeight, linPntsSmall)^2
print(R2)

ggplot(dfW2015CFDSO1, aes(Day)) +
  geom_line(aes(x=Day, y = LinInterp), colour = 'lightgreen') +
  geom_point(aes(x=Day, y = LinInterp), colour = 'lightgreen', size = 3) +
  geom_point(aes(x=Day, y = PigWeight), colour='black')
```

```
##USE FITTED VALUES
dfImputedW2015CFDSO1 = dfW2015CFDSO1 %>%
  mutate(PigWeight=ifelse(is.na(PigWeight),LinInterp,PigWeight))
print(dfImputedW2015CFDSO1)

##OUTPUT TO .csv
fwrite(dfImputedW2015CFDSO1, file='Weightloss_W2015_CFDSO1_Imputed.csv')

###

#CFDS-O-2

dfW2015CFDSO2 = dfW2015 %>%
  filter(Carcass=='CFDS-O-2') %>% #CHOOSE PIG
  select(-`Weight loss`, -`Cumulative % weight loss`, -`% Weight loss`, -Weight,
-`Grid weight`, -Carcass, -Date) %>% #
  rename(PigWeight = `Pig Weight`)

##COMPLETE CASES FOR FITTING LEARNING MODELS
dfCompleteW2015CFDSO2 = dfW2015CFDSO2[complete.cases(dfW2015CFDSO2),]

##LINEAR/SPLINE INTERPOLATION
linFunc = approxfun(dfCompleteW2015CFDSO2$Day, dfCompleteW2015CFDSO2$PigWeight,
ties = mean)
linPnts = linFunc(seq(dfW2015CFDSO2$Day))
linPntsSmall = linFunc(seq(dfCompleteW2015CFDSO2$Day))
dfW2015CFDSO2$LinInterp = linPnts

R2 = cor(dfCompleteW2015CFDSO2$PigWeight, linPntsSmall)^2
print(R2)

ggplot(dfW2015CFDSO2, aes(Day)) +
  geom_line(aes(x=Day, y = LinInterp), colour = 'lightgreen') +
  geom_point(aes(x=Day, y = LinInterp), colour = 'lightgreen', size = 3) +
  geom_point(aes(x=Day, y = PigWeight), colour='black')

##USE FITTED VALUES
dfImputedW2015CFDSO2 = dfW2015CFDSO2 %>%
  mutate(PigWeight=ifelse(is.na(PigWeight),LinInterp,PigWeight))
print(dfImputedW2015CFDSO2)

##OUTPUT TO .csv
fwrite(dfImputedW2015CFDSO2, file='Weightloss_W2015_CFDSO2_Imputed.csv')

###

#CFDS-C-1
```

```
dfW2015CFDSC1 = dfW2015 %>%
  filter(Carcass=='CFDS-C-1') %>% #CHOOSE PIG
  select(-`Weight loss`, -`Cumulative % weight loss`, -`% Weight loss`, -Weight,
-`Grid weight`, -Carcass, -Date) %>% #
  rename(PigWeight = `Pig Weight`)

##COMPLETE CASES FOR FITTING LEARNING MODELS
dfCompleteW2015CFDSC1 = dfW2015CFDSC1[complete.cases(dfW2015CFDSC1),]

##LINEAR/SPLINE INTERPOLATION
linFunc = approxfun(dfCompleteW2015CFDSC1$Day, dfCompleteW2015CFDSC1$PigWeight,
ties = mean)
linPnts = linFunc(seq(dfW2015CFDSC1$Day))
linPntsSmall = linFunc(seq(dfCompleteW2015CFDSC1$Day))
dfW2015CFDSC1$LinInterp = linPnts

R2 = cor(dfCompleteW2015CFDSC1$PigWeight, linPntsSmall)^2
print(R2)

ggplot(dfW2015CFDSC1, aes(Day)) +
  geom_line(aes(x=Day, y = LinInterp), colour = 'lightgreen') +
  geom_point(aes(x=Day, y = LinInterp), colour = 'lightgreen', size = 3) +
  geom_point(aes(x=Day, y = PigWeight), colour='black')

##USE FITTED VALUES
dfImputedW2015PJ1 = dfW2015PJ1 %>%
  mutate(PigWeight=ifelse(is.na(PigWeight),LinInterp,PigWeight))
print(dfImputedW2015CFDSC1)

##OUTPUT TO .csv
fwrite(dfImputedW2015CFDSC1, file='Weightloss_W2015_CFDSC1_Imputed.csv')

###

#PJ-2

dfW2015CFDSC2 = dfW2015 %>%
  filter(Carcass=='CFDS-C-2') %>% #CHOOSE PIG
  select(-`Weight loss`, -`Cumulative % weight loss`, -`% Weight loss`, -Weight,
-`Grid weight`, -Carcass, -Date) %>% #
  rename(PigWeight = `Pig Weight`)

##COMPLETE CASES FOR FITTING LEARNING MODELS
dfCompleteW2015CFDSC2 = dfW2015CFDSC2[complete.cases(dfW2015CFDSC2),]

##LINEAR/SPLINE INTERPOLATION
linFunc = approxfun(dfCompleteW2015CFDSC2$Day, dfCompleteW2015CFDSC2$PigWeight,
ties = mean)
```

```
linPnts = linFunc(seq(dfW2015CFDSC2$Day))
linPntsSmall = linFunc(seq(dfCompleteW2015CFDSC2$Day))
dfW2015CFDSC2$LinInterp = linPnts

R2 = cor(dfCompleteW2015CFDSC2$PigWeight, linPntsSmall)^2
print(R2)

ggplot(dfW2015CFDSC2, aes(Day)) +
  geom_line(aes(x=Day, y = LinInterp), colour = 'lightgreen') +
  geom_point(aes(x=Day, y = LinInterp), colour = 'lightgreen', size = 3) +
  geom_point(aes(x=Day, y = PigWeight), colour='black')

##USE FITTED VALUES
dfImputedW2015CFDSC2 = dfW2015CFDSC2 %>%
  mutate(PigWeight=ifelse(is.na(PigWeight),LinInterp,PigWeight))
print(dfImputedW2015CFDSC2)

##OUTPUT TO .csv
fwrite(dfImputedW2015CFDSC2, file='Weightloss_W2015_CFDSC2_Imputed.csv')

###########
#S-2016
###########

#CFDS-O-1

dfS2016CFDSO1 = dfS2016 %>%
  filter(Carcass=='CFDS-O-1') %>% #CHOOSE PIG
  select(-`Weight loss`, -`Cumulative % weight loss`, -`% Weight loss`, -Weight,
-`Grid weight`, -Carcass, -Date) %>% #
  rename(PigWeight = `Pig Weight`)

##COMPLETE CASES FOR FITTING LEARNING MODELS
dfCompleteS2016CFDSO1 = dfS2016CFDSO1[complete.cases(dfS2016CFDSO1),]

##LINEAR/SPLINE INTERPOLATION
linFunc = approxfun(dfCompleteS2016CFDSO1$Day, dfCompleteS2016CFDSO1$PigWeight,
ties = mean)
linPnts = linFunc(seq(dfS2016CFDSO1$Day))
linPntsSmall = linFunc(seq(dfCompleteS2016CFDSO1$Day))
dfS2016CFDSO1$LinInterp = linPnts

R2 = cor(dfCompleteS2016CFDSO1$PigWeight, linPntsSmall)^2
print(R2)

ggplot(dfS2016CFDSO1, aes(Day)) +
  geom_line(aes(x=Day, y = LinInterp), colour = 'lightgreen') +
  geom_point(aes(x=Day, y = LinInterp), colour = 'lightgreen', size = 3) +
```

```
  geom_point(aes(x=Day, y = PigWeight), colour='black')

##USE FITTED VALUES
dfImputedS2016CFDSO1 = dfS2016CFDSO1 %>%
  mutate(PigWeight=ifelse(is.na(PigWeight),LinInterp,PigWeight))
print(dfImputedS2016CFDSO1)

##OUTPUT TO .csv
fwrite(dfImputedS2016CFDS1, file='Weightloss_S2016_CFDS1_Imputed.csv')

###

#CFDS-2

dfS2016CFDSO2 = dfS2016 %>%
  filter(Carcass=='CFDS-O-2') %>% #CHOOSE PIG
  select(-`Weight loss`, -`Cumulative % weight loss`, -`% Weight loss`, -Weight,
-`Grid weight`, -Carcass, -Date) %>% #
  rename(PigWeight = `Pig Weight`)

##COMPLETE CASES FOR FITTING LEARNING MODELS
dfCompleteS2016CFDSO2 = dfS2016CFDSO2[complete.cases(dfS2016CFDS2),]

##LINEAR/SPLINE INTERPOLATION
linFunc = approxfun(dfCompleteS2016CFDSO2$Day, dfCompleteS2016CFDS2O$PigWeight,
ties = mean)
linPnts = linFunc(seq(dfS2016CFDSO2$Day))
linPntsSmall = linFunc(seq(dfCompleteS2016CFDSO2$Day))
dfS2016CFDSO2$LinInterp = linPnts

R2 = cor(dfCompleteS2016CFDSO2$PigWeight, linPntsSmall)^2
print(R2)

ggplot(dfS2016CFDSO2, aes(Day)) +
  geom_line(aes(x=Day, y = LinInterp), colour = 'lightgreen') +
  geom_point(aes(x=Day, y = LinInterp), colour = 'lightgreen', size = 3) +
  geom_point(aes(x=Day, y = PigWeight), colour='black')

##USE FITTED VALUES
dfImputedS2016CFDSO2 = dfS2016CFDSO2 %>%
  mutate(PigWeight=ifelse(is.na(PigWeight),LinInterp,PigWeight))
print(dfImputedS2016CFDSO2)

##OUTPUT TO .csv
fwrite(dfImputedS2016CFDSO2, file='Weightloss_S2016_CFDSO2_Imputed.csv')

###
```

```
#CFDS-C-1

dfS2016CFDSC1 = dfS2016 %>%
  filter(Carcass=='CFDS-C-1') %>% #CHOOSE PIG
  select(-`Weight loss`, -`Cumulative % weight loss`, -`% Weight loss`, -Weight,
-`Grid weight`, -Carcass, -Date) %>% #
  rename(PigWeight = `Pig Weight`)

##COMPLETE CASES FOR FITTING LEARNING MODELS
dfCompleteS2016CFDSCJ1 = dfS2016CFDSC1[complete.cases(dfS2016CFDSC1),]

##LINEAR/SPLINE INTERPOLATION
linFunc = approxfun(dfCompleteS2016CFDSC1$Day, dfCompleteS2016CFDSC1$PigWeight,
ties = mean)
linPnts = linFunc(seq(dfS2016CFDSC1$Day))
linPntsSmall = linFunc(seq(dfCompleteS2016CFDSC1$Day))
dfS2016CFDSC1$LinInterp = linPnts

R2 = cor(dfCompleteS2016CFDSC1$PigWeight, linPntsSmall)^2
print(R2)

ggplot(dfS2016CFDSC1, aes(Day)) +
  geom_line(aes(x=Day, y = LinInterp), colour = 'lightgreen') +
  geom_point(aes(x=Day, y = LinInterp), colour = 'lightgreen', size = 3) +
  geom_point(aes(x=Day, y = PigWeight), colour='black')

##USE FITTED VALUES
dfImputedS2016CFDSC1 = dfS2016CFDSC1 %>%
  mutate(PigWeight=ifelse(is.na(PigWeight),LinInterp,PigWeight))
print(dfImputedS2016CFDSC1)

##OUTPUT TO .csv
fwrite(dfImputedS2016CFDSC1, file='Weightloss_S2016_CFDSC1_Imputed.csv')

###

#CFDS-C-2

dfS2016CFDSC2 = dfS2016 %>%
  filter(Carcass=='CFDS-C-2') %>% #CHOOSE PIG
  select(-`Weight loss`, -`Cumulative % weight loss`, -`% Weight loss`, -Weight,
-`Grid weight`, -Carcass, -Date) %>% #
  rename(PigWeight = `Pig Weight`)

##COMPLETE CASES FOR FITTING LEARNING MODELS
dfCompleteS2016CFDSC2 = dfS2016CFDSC2[complete.cases(dfS2016CFDSC2),]

##LINEAR/SPLINE INTERPOLATION
```

```
linFunc = approxfun(dfCompleteS2016CFDSC2$Day, dfCompleteS2016CFDSC2$PigWeight,
ties = mean)
linPnts = linFunc(seq(dfS2016CFDSC2$Day))
linPntsSmall = linFunc(seq(dfCompleteS2016CFDSC2$Day))
dfS2016CFDSC2$LinInterp = linPnts

R2 = cor(dfCompleteS2016CFDSC2$PigWeight, linPntsSmall)^2
print(R2)

ggplot(dfS2016CFDSC2, aes(Day)) +
  geom_line(aes(x=Day, y = LinInterp), colour = 'lightgreen') +
  geom_point(aes(x=Day, y = LinInterp), colour = 'lightgreen', size = 3) +
  geom_point(aes(x=Day, y = PigWeight), colour='black')

##USE FITTED VALUES
dfImputedS2016CFDSC2 = dfS2016CFDSC2 %>%
  mutate(PigWeight=ifelse(is.na(PigWeight),LinInterp,PigWeight))
print(dfImputedS2016CFDSC2)

##OUTPUT TO .csv
fwrite(dfImputedS2016CFDSC2, file='Weightloss_S2016_CFDSC2_Imputed.csv')
```

APPENDIX A4.3 - Raw weight loss data (Cycle 1 | W-2014)

CFDS/O-1

Day	Date	Pig Weight	LinInterp	Weight loss	% Weight loss	Cumulative % weight loss
0	2014/07/01	66.50	66.50	0.00	0.00	0.00
1	2014/07/02	66.00	66.00	0.50	0.75	0.75
2	2014/07/03	65.00	65.00	1.00	1.50	2.26
3	2014/07/04	65.50	65.50	-0.50	-0.75	1.50
4	2014/07/05	65.50	65.50	0.00	0.00	1.50
5	2014/07/06	66.00	66.00	-0.50	-0.75	0.75
6	2014/07/07	65.50	65.50	0.50	0.75	1.50
7	2014/07/08	66.00	66.00	-0.50	-0.75	0.75
8	2014/07/09	65.50	65.50	0.50	0.75	1.50
9	2014/07/10	65.00	65.00	0.50	0.75	2.26
10	2014/07/11	65.00	65.00	0.00	0.00	2.26
11	2014/07/12	66.00	66.00	-1.00	-1.50	0.75
12	2014/07/13	65.50	65.50	0.50	0.75	1.50
13	2014/07/14	65.50	65.50	0.00	0.00	1.50
14	2014/07/15	65.50	65.50	0.00	0.00	1.50
15	2014/07/16	65.00	65.00	0.50	0.75	2.26
16	2014/07/17	65.00	65.00	0.00	0.00	2.26
17	2014/07/18	65.00	65.00	0.00	0.00	2.26
18	2014/07/19	65.50	65.50	-0.50	-0.75	1.50
19	2014/07/20	65.50	65.50	0.00	0.00	1.50
20	2014/07/21	65.50	65.50	0.00	0.00	1.50
21	2014/07/22	65.00	65.00	0.50	0.75	2.26
22	2014/07/23		64.50	0.50	0.75	3.01
23	2014/07/24	64.00	64.00	0.50	0.75	3.76
24	2014/07/25	64.00	64.00	0.00	0.00	3.76
25	2014/07/26	64.50	64.50	-0.50	-0.75	3.01
26	2014/07/27	63.50	63.50	1.00	1.50	4.51
27	2014/07/28	64.00	64.00	-0.50	-0.75	3.76
28	2014/07/29	63.00	63.00	1.00	1.50	5.26
29	2014/07/30	63.00	63.00	0.00	0.00	5.26
30	2014/07/31	62.00	62.00	1.00	1.50	6.77
31	2014/08/01	62.00	62.00	0.00	0.00	6.77
32	2014/08/02	61.00	61.00	1.00	1.50	8.27
33	2014/08/03	61.00	61.00	0.00	0.00	8.27
34	2014/08/04	61.00	61.00	0.00	0.00	8.27
35	2014/08/05	61.00	61.00	0.00	0.00	8.27
36	2014/08/06	60.50	60.50	0.50	0.75	9.02
37	2014/08/07	60.50	60.50	0.00	0.00	9.02
38	2014/08/08	59.50	59.50	1.00	1.50	10.53
39	2014/08/09	59.00	59.00	0.50	0.75	11.28
40	2014/08/10	58.00	58.00	1.00	1.50	12.78
41	2014/08/11	57.50	57.50	0.50	0.75	13.53
42	2014/08/12	57.00	57.00	0.50	0.75	14.29
43	2014/08/13	55.00	55.00	2.00	3.01	17.29
44	2014/08/14	54.50	54.50	0.50	0.75	18.05
45	2014/08/15	53.50	53.50	1.00	1.50	19.55
46	2014/08/16	52.00	52.00	1.50	2.26	21.80
47	2014/08/17	52.00	52.00	0.00	0.00	21.80
48	2014/08/18	50.50	50.50	1.50	2.26	24.06
49	2014/08/19	48.50	48.50	2.00	3.01	27.07
50	2014/08/20		47.75	0.75	1.13	28.20
51	2014/08/21	47.00	47.00	0.75	1.13	29.32
52	2014/08/22	47.00	47.00	0.00	0.00	29.32
53	2014/08/23		45.25	1.75	2.63	31.95
54	2014/08/24	43.50	43.50	1.75	2.63	34.59
55	2014/08/25		42.50	1.00	1.50	36.09
56	2014/08/26	41.50	41.50	1.00	1.50	37.59
57	2014/08/27		40.50	1.00	1.50	39.10
58	2014/08/28	39.50	39.50	1.00	1.50	40.60
59	2014/08/29		38.75	0.75	1.13	41.73
60	2014/08/30	38.00	38.00	0.75	1.13	42.86
61	2014/08/31		36.50	1.50	2.26	45.11
62	2014/09/01	35.00	35.00	1.50	2.26	47.37
63	2014/09/02		33.50	1.50	2.26	49.62
64	2014/09/03	32.00	32.00	1.50	2.26	51.88
65	2014/09/04		30.75	1.25	1.88	53.76
66	2014/09/05	29.50	29.50	1.25	1.88	55.64
67	2014/09/06		28.00	1.50	2.26	57.89
68	2014/09/07	26.50	26.50	1.50	2.26	60.15
69	2014/09/08		24.75	1.75	2.63	62.78
70	2014/09/09	23.00	23.00	1.75	2.63	65.41
71	2014/09/10		22.50	0.50	0.75	66.17
72	2014/09/11	22.00	22.00	0.50	0.75	66.92
73	2014/09/12		20.50	1.50	2.26	69.17
74	2014/09/13		19.00	1.50	2.26	71.43
75	2014/09/14	17.50	17.50	1.50	2.26	73.68
76	2014/09/15		16.50	1.00	1.50	75.19
77	2014/09/16	15.50	15.50	1.00	1.50	76.69
78	2014/09/17		15.17	0.33	0.50	77.19
79	2014/09/18		14.83	0.33	0.50	77.69
80	2014/09/19	14.50	14.50	0.33	0.50	78.20
81	2014/09/20		13.83	0.67	1.00	79.20
82	2014/09/21		13.17	0.67	1.00	80.20
83	2014/09/22	12.50	12.50	0.67	1.00	81.20
84	2014/09/23		11.83	0.67	1.00	82.21
85	2014/09/24		11.17	0.67	1.00	83.21
86	2014/09/25	10.50	10.50	0.67	1.00	84.21
87	2014/09/26		10.25	0.25	0.38	84.59
88	2014/09/27		10.00	0.25	0.38	84.96
89	2014/09/28		9.75	0.25	0.38	85.34
90	2014/09/29	9.50	9.50	0.25	0.38	85.71
91	2014/09/30		9.00	0.50	0.75	86.47
92	2014/10/01		8.50	0.50	0.75	87.22
93	2014/10/02	8.00	8.00	0.50	0.75	87.97
94	2014/10/03		7.50	0.50	0.75	88.72
95	2014/10/04		7.00	0.50	0.75	89.47
96	2014/10/05	6.50	6.50	0.50	0.75	90.23
97	2014/10/06		6.67	-0.17	-0.25	89.97
98	2014/10/07		6.83	-0.17	-0.25	89.72
99	2014/10/08	7.00	7.00	-0.17	-0.25	89.47
100	2014/10/09		6.83	0.17	0.25	89.72
101	2014/10/10		6.67	0.17	0.25	89.97
102	2014/10/11	6.50	6.50	0.17	0.25	90.23
103	2014/10/12		6.25	0.25	0.38	90.60
104	2014/10/13		6.00	0.25	0.38	90.98
105	2014/10/14		5.75	0.25	0.38	91.35
106	2014/10/15	5.50	5.50	0.25	0.38	91.73
107	2014/10/16		5.50	0.00	0.00	91.73
108	2014/10/17		5.50	0.00	0.00	91.73
109	2014/10/18		5.50	0.00	0.00	91.73
110	2014/10/19		5.50	0.00	0.00	91.73
111	2014/10/20		5.50	0.00	0.00	91.73
112	2014/10/21		5.50	0.00	0.00	91.73
113	2014/10/22	5.50	5.50	0.00	0.00	91.73
114	2014/10/23		5.36	0.14	0.21	91.94
115	2014/10/24		5.21	0.14	0.21	92.16
116	2014/10/25		5.07	0.14	0.21	92.37
117	2014/10/26		4.93	0.14	0.21	92.59
118	2014/10/27		4.79	0.14	0.21	92.80
119	2014/10/28		4.64	0.14	0.21	93.02
120	2014/10/29	4.50	4.50	0.14	0.21	93.23
121	2014/10/30		4.50	0.00	0.00	93.23
122	2014/10/31		4.50	0.00	0.00	93.23
123	2014/11/01		4.50	0.00	0.00	93.23
124	2014/11/02		4.50	0.00	0.00	93.23
125	2014/11/03		4.50	0.00	0.00	93.23
126	2014/11/04		4.50	0.00	0.00	93.23
127	2014/11/05	4.50	4.50	0.00	0.00	93.23
128	2014/11/06		4.50	0.00	0.00	93.23
129	2014/11/07		4.50	0.00	0.00	93.23
130	2014/11/08		4.50	0.00	0.00	93.23
131	2014/11/09		4.50	0.00	0.00	93.23
132	2014/11/10		4.50	0.00	0.00	93.23
133	2014/11/11		4.50	0.00	0.00	93.23
134	2014/11/12		4.50	0.00	0.00	93.23
135	2014/11/13	4.50	4.50	0.00	0.00	93.23
136	2014/11/14		4.50	0.00	0.00	93.23
137	2014/11/15		4.50	0.00	0.00	93.23
138	2014/11/16		4.50	0.00	0.00	93.23
139	2014/11/17		4.50	0.00	0.00	93.23
140	2014/11/18		4.50	0.00	0.00	93.23
141	2014/11/19	4.50	4.50	0.00	0.00	93.23

END OF WEIGHT LOSS DATA COLLECTION

CFDS/O-2

Day	Date	Pig Weight	LinInterp	Weight loss	% Weight loss	Cumulative % weight loss
0	2014/07/01	65.50	65.50	0.00	0.00	0.00
1	2014/07/02	65.00	65.00	0.50	0.76	0.76
2	2014/07/03	64.00	64.00	1.00	1.53	2.29
3	2014/07/04	64.00	64.00	0.00	0.00	2.29
4	2014/07/05	64.50	64.50	-0.50	-0.76	1.53
5	2014/07/06	64.50	64.50	0.00	0.00	1.53
6	2014/07/07	64.50	64.50	0.00	0.00	1.53
7	2014/07/08	64.50	64.50	0.00	0.00	1.53
8	2014/07/09	63.50	63.50	1.00	1.53	3.05
9	2014/07/10	63.50	63.50	0.00	0.00	3.05
10	2014/07/11	64.50	64.50	-1.00	-1.53	1.53
11	2014/07/12	64.50	64.50	0.00	0.00	1.53
12	2014/07/13	64.00	64.00	0.50	0.76	2.29
13	2014/07/14	63.50	63.50	0.50	0.76	3.05
14	2014/07/15	63.50	63.50	0.00	0.00	3.05
15	2014/07/16	63.50	63.50	0.00	0.00	3.05
16	2014/07/17	64.50	64.50	-1.00	-1.53	1.53
17	2014/07/18	65.00	65.00	-0.50	-0.76	0.76
18	2014/07/19	65.00	65.00	0.00	0.00	0.76
19	2014/07/20	64.50	64.50	0.50	0.76	1.53
20	2014/07/21	64.00	64.00	0.50	0.76	2.29
21	2014/07/22	64.00	64.00	0.00	0.00	2.29
22	2014/07/23		63.25	0.75	1.15	3.44
23	2014/07/24	62.50	62.50	0.75	1.15	4.58
24	2014/07/25	63.00	63.00	-0.50	-0.76	3.82
25	2014/07/26	62.50	62.50	0.50	0.76	4.58
26	2014/07/27	63.00	63.00	-0.50	-0.76	3.82
27	2014/07/28	63.00	63.00	0.00	0.00	3.82
28	2014/07/29	62.50	62.50	0.50	0.76	4.58
29	2014/07/30	61.50	61.50	1.00	1.53	6.11
30	2014/07/31	61.50	61.50	0.00	0.00	6.11
31	2014/08/01	61.50	61.50	0.00	0.00	6.11
32	2014/08/02	61.50	61.50	0.00	0.00	6.11
33	2014/08/03	61.00	61.00	0.50	0.76	6.87
34	2014/08/04	61.00	61.00	0.00	0.00	6.87
35	2014/08/05	60.50	60.50	0.50	0.76	7.63
36	2014/08/06	59.50	59.50	1.00	1.53	9.16
37	2014/08/07	60.00	60.00	-0.50	-0.76	8.40
38	2014/08/08	58.50	58.50	1.50	2.29	10.69
39	2014/08/09	59.00	59.00	-0.50	-0.76	9.92
40	2014/08/10	59.00	59.00	0.00	0.00	9.92
41	2014/08/11	58.00	58.00	1.00	1.53	11.45
42	2014/08/12	57.50	57.50	0.50	0.76	12.21
43	2014/08/13	58.00	58.00	-0.50	-0.76	11.45
44	2014/08/14	58.50	58.50	-0.50	-0.76	10.69
45	2014/08/15	57.50	57.50	1.00	1.53	12.21
46	2014/08/16	56.50	56.50	1.00	1.53	13.74
47	2014/08/17	57.00	57.00	-0.50	-0.76	12.98
48	2014/08/18	54.50	54.50	2.50	3.82	16.79
49	2014/08/19	53.50	53.50	1.00	1.53	18.32
50	2014/08/20		53.25	0.25	0.38	18.70
51	2014/08/21	53.00	53.00	0.25	0.38	19.08
52	2014/08/22	53.00	53.00	0.00	0.00	19.08
53	2014/08/23		52.75	0.25	0.38	19.47
54	2014/08/24	52.50	52.50	0.25	0.38	19.85
55	2014/08/25		51.75	0.75	1.15	20.99
56	2014/08/26	51.00	51.00	0.75	1.15	22.14
57	2014/08/27		50.25	0.75	1.15	23.28
58	2014/08/28	49.50	49.50	0.75	1.15	24.43
59	2014/08/29		49.25	0.25	0.38	24.81
60	2014/08/30	49.00	49.00	0.25	0.38	25.19
61	2014/08/31		47.75	1.25	1.91	27.10
62	2014/09/01	46.50	46.50	1.25	1.91	29.01
63	2014/09/02		45.75	0.75	1.15	30.15
64	2014/09/03	45.00	45.00	0.75	1.15	31.30
65	2014/09/04		43.75	1.25	1.91	33.21
66	2014/09/05	42.50	42.50	1.25	1.91	35.11
67	2014/09/06		42.00	0.50	0.76	35.88
68	2014/09/07	41.50	41.50	0.50	0.76	36.64
69	2014/09/08		41.00	0.50	0.76	37.40
70	2014/09/09	40.50	40.50	0.50	0.76	38.17
71	2014/09/10		39.00	1.50	2.29	40.46
72	2014/09/11	37.50	37.50	1.50	2.29	42.75
73	2014/09/12		36.33	1.17	1.78	44.53
74	2014/09/13		35.17	1.17	1.78	46.31
75	2014/09/14	34.00	34.00	1.17	1.78	48.09
76	2014/09/15		31.75	2.25	3.44	51.53
77	2014/09/16	29.50	29.50	2.25	3.44	54.96
78	2014/09/17		28.67	0.83	1.27	56.23
79	2014/09/18		27.83	0.83	1.27	57.51
80	2014/09/19	27.00	27.00	0.83	1.27	58.78
81	2014/09/20		26.50	0.50	0.76	59.54
82	2014/09/21		26.00	0.50	0.76	60.31
83	2014/09/22	25.50	25.50	0.50	0.76	61.07
84	2014/09/23		24.50	1.00	1.53	62.60
85	2014/09/24		23.50	1.00	1.53	64.12
86	2014/09/25	22.50	22.50	1.00	1.53	65.65
87	2014/09/26		21.75	0.75	1.15	66.79
88	2014/09/27		21.00	0.75	1.15	67.94
89	2014/09/28		20.25	0.75	1.15	69.08
90	2014/09/29	19.50	19.50	0.75	1.15	70.23
91	2014/09/30		18.67	0.83	1.27	71.50
92	2014/10/01		17.83	0.83	1.27	72.77
93	2014/10/02	17.00	17.00	0.83	1.27	74.05
94	2014/10/03		15.67	1.33	2.04	76.08
95	2014/10/04		14.33	1.33	2.04	78.12
96	2014/10/05	13.00	13.00	1.33	2.04	80.15
97	2014/10/06		12.67	0.33	0.51	80.66
98	2014/10/07		12.33	0.33	0.51	81.17
99	2014/10/08	12.00	12.00	0.33	0.51	81.68
100	2014/10/09		11.50	0.50	0.76	82.44
101	2014/10/10		11.00	0.50	0.76	83.21
102	2014/10/11	10.50	10.50	0.50	0.76	83.97
103	2014/10/12		10.25	0.25	0.38	84.35
104	2014/10/13		10.00	0.25	0.38	84.73
105	2014/10/14		9.75	0.25	0.38	85.11
106	2014/10/15	9.50	9.50	0.25	0.38	85.50
107	2014/10/16		9.50	0.00	0.00	85.50
108	2014/10/17		9.50	0.00	0.00	85.50
109	2014/10/18		9.50	0.00	0.00	85.50
110	2014/10/19		9.50	0.00	0.00	85.50
111	2014/10/20		9.50	0.00	0.00	85.50
112	2014/10/21		9.50	0.00	0.00	85.50
113	2014/10/22	9.50	9.50	0.00	0.00	85.50
114	2014/10/23		9.50	0.00	0.00	85.50
115	2014/10/24		9.50	0.00	0.00	85.50
116	2014/10/25		9.50	0.00	0.00	85.50
117	2014/10/26		9.50	0.00	0.00	85.50
118	2014/10/27		9.50	0.00	0.00	85.50
119	2014/10/28		9.50	0.00	0.00	85.50
120	2014/10/29	9.50	9.50	0.00	0.00	85.50
121	2014/10/30		9.50	0.00	0.00	85.50
122	2014/10/31		9.50	0.00	0.00	85.50
123	2014/11/01		9.50	0.00	0.00	85.50
124	2014/11/02		9.50	0.00	0.00	85.50
125	2014/11/03		9.50	0.00	0.00	85.50
126	2014/11/04		9.50	0.00	0.00	85.50
127	2014/11/05	9.50	9.50	0.00	0.00	85.50
128	2014/11/06		9.38	0.13	0.19	85.69
129	2014/11/07		9.25	0.13	0.19	85.88
130	2014/11/08		9.13	0.13	0.19	86.07
131	2014/11/09		9.00	0.13	0.19	86.26
132	2014/11/10		8.88	0.13	0.19	86.45
133	2014/11/11		8.75	0.13	0.19	86.64
134	2014/11/12		8.63	0.13	0.19	86.83
135	2014/11/13	8.50	8.50	0.13	0.19	87.02
136	2014/11/14		8.42	0.08	0.13	87.15
137	2014/11/15		8.33	0.08	0.13	87.28
138	2014/11/16		8.25	0.08	0.13	87.40
139	2014/11/17		8.17	0.08	0.13	87.53
140	2014/11/18		8.08	0.08	0.13	87.66
141	2014/11/19	8.00	8.00	0.08	0.13	87.79

END OF WEIGHT LOSS DATA COLLECTION

CFDS/C-1

Day	Date	Pig Weight	LinInterp	Weight loss	% Weight loss	Cumulative % weight loss
0	2014/07/01	63.00	63.00	0.00	0.00	0.00
1	2014/07/02	61.50	61.50	1.50	2.38	2.38
2	2014/07/03	60.50	60.50	1.00	1.59	3.97
3	2014/07/04	59.50	59.50	1.00	1.59	5.56
4	2014/07/05	59.50	59.50	0.00	0.00	5.56
5	2014/07/06	58.50	58.50	1.00	1.59	7.14
6	2014/07/07	57.50	57.50	1.00	1.59	8.73
7	2014/07/08	56.50	56.50	1.00	1.59	10.32
8	2014/07/09	56.00	56.00	0.50	0.79	11.11
9	2014/07/10	55.50	55.50	0.50	0.79	11.90
10	2014/07/11	54.50	54.50	1.00	1.59	13.49
11	2014/07/12	53.50	53.50	1.00	1.59	15.08
12	2014/07/13	53.00	53.00	0.50	0.79	15.87
13	2014/07/14	53.00	53.00	0.00	0.00	15.87
14	2014/07/15	52.00	52.00	1.00	1.59	17.46
15	2014/07/16	51.50	51.50	0.50	0.79	18.25
16	2014/07/17	51.00	51.00	0.50	0.79	19.05
17	2014/07/18	51.50	51.50	-0.50	-0.79	18.25
18	2014/07/19	51.50	51.50	0.00	0.00	18.25
19	2014/07/20	50.00	50.00	1.50	2.38	20.63
20	2014/07/21	49.50	49.50	0.50	0.79	21.43
21	2014/07/22	49.50	49.50	0.00	0.00	21.43
22	2014/07/23		48.75	0.75	1.19	22.62
23	2014/07/24	48.00	48.00	0.75	1.19	23.81
24	2014/07/25	48.50	48.50	-0.50	-0.79	23.02
25	2014/07/26	48.00	48.00	0.50	0.79	23.81
26	2014/07/27	47.50	47.50	0.50	0.79	24.60
27	2014/07/28	47.50	47.50	0.00	0.00	24.60
28	2014/07/29	46.50	46.50	1.00	1.59	26.19
29	2014/07/30	46.50	46.50	0.00	0.00	26.19
30	2014/07/31	46.00	46.00	0.50	0.79	26.98
31	2014/08/01	45.00	45.00	1.00	1.59	28.57
32	2014/08/02	45.00	45.00	0.00	0.00	28.57
33	2014/08/03	44.50	44.50	0.50	0.79	29.37
34	2014/08/04	43.50	43.50	1.00	1.59	30.95
35	2014/08/05	44.50	44.50	-1.00	-1.59	29.37
36	2014/08/06	44.00	44.00	0.50	0.79	30.16
37	2014/08/07	44.00	44.00	0.00	0.00	30.16
38	2014/08/08	43.00	43.00	1.00	1.59	31.75
39	2014/08/09	42.50	42.50	0.50	0.79	32.54
40	2014/08/10	41.50	41.50	1.00	1.59	34.13
41	2014/08/11	40.50	40.50	1.00	1.59	35.71
42	2014/08/12	39.00	39.00	1.50	2.38	38.10
43	2014/08/13	39.00	39.00	0.00	0.00	38.10
44	2014/08/14	38.00	38.00	1.00	1.59	39.68
45	2014/08/15	38.50	38.50	-0.50	-0.79	38.89
46	2014/08/16	36.50	36.50	2.00	3.17	42.06
47	2014/08/17	36.00	36.00	0.50	0.79	42.86
48	2014/08/18	35.00	35.00	1.00	1.59	44.44
49	2014/08/19	33.50	33.50	1.50	2.38	46.83
50	2014/08/20		33.75	-0.25	-0.40	46.43
51	2014/08/21	34.00	34.00	-0.25	-0.40	46.03
52	2014/08/22	33.00	33.00	1.00	1.59	47.62
53	2014/08/23		32.50	0.50	0.79	48.41
54	2014/08/24	32.00	32.00	0.50	0.79	49.21
55	2014/08/25		32.25	-0.25	-0.40	48.81
56	2014/08/26	32.50	32.50	-0.25	-0.40	48.41
57	2014/08/27		32.00	0.50	0.79	49.21
58	2014/08/28	31.50	31.50	0.50	0.79	50.00
59	2014/08/29		31.25	0.25	0.40	50.40
60	2014/08/30	31.00	31.00	0.25	0.40	50.79
61	2014/08/31		30.25	0.75	1.19	51.98
62	2014/09/01	29.50	29.50	0.75	1.19	53.17
63	2014/09/02		28.25	1.25	1.98	55.16
64	2014/09/03	27.00	27.00	1.25	1.98	57.14
65	2014/09/04		26.25	0.75	1.19	58.33
66	2014/09/05	25.50	25.50	0.75	1.19	59.52
67	2014/09/06		24.25	1.25	1.98	61.51
68	2014/09/07	23.00	23.00	1.25	1.98	63.49
69	2014/09/08		21.50	1.50	2.38	65.87
70	2014/09/09	20.00	20.00	1.50	2.38	68.25
71	2014/09/10		18.25	1.75	2.78	71.03
72	2014/09/11	16.50	16.50	1.75	2.78	73.81
73	2014/09/12		15.33	1.17	1.85	75.66
74	2014/09/13		14.17	1.17	1.85	77.51
75	2014/09/14	13.00	13.00	1.17	1.85	79.37
76	2014/09/15		12.25	0.75	1.19	80.56
77	2014/09/16	11.50	11.50	0.75	1.19	81.75
78	2014/09/17		11.33	0.17	0.26	82.01
79	2014/09/18		11.17	0.17	0.26	82.28
80	2014/09/19	11.00	11.00	0.17	0.26	82.54
81	2014/09/20		11.00	0.00	0.00	82.54
82	2014/09/21		11.00	0.00	0.00	82.54
83	2014/09/22	11.00	11.00	0.00	0.00	82.54
84	2014/09/23		10.71	0.29	0.45	82.99
85	2014/09/24		10.43	0.29	0.45	83.45
86	2014/09/25		10.14	0.29	0.45	83.90
87	2014/09/26		9.86	0.29	0.45	84.35
88	2014/09/27		9.57	0.29	0.45	84.81
89	2014/09/28		9.29	0.29	0.45	85.26
90	2014/09/29	9.00	9.00	0.29	0.45	85.71
91	2014/09/30		8.83	0.17	0.26	85.98
92	2014/10/01		8.67	0.17	0.26	86.24
93	2014/10/02	8.50	8.50	0.17	0.26	86.51
94	2014/10/03		8.17	0.33	0.53	87.04
95	2014/10/04		7.83	0.33	0.53	87.57
96	2014/10/05	7.50	7.50	0.33	0.53	88.10
97	2014/10/06		7.67	-0.17	-0.26	87.83
98	2014/10/07		7.83	-0.17	-0.26	87.57
99	2014/10/08	8.00	8.00	-0.17	-0.26	87.30
100	2014/10/09		7.83	0.17	0.26	87.57
101	2014/10/10		7.67	0.17	0.26	87.83
102	2014/10/11	7.50	7.50	0.17	0.26	88.10
103	2014/10/12		7.50	0.00	0.00	88.10
104	2014/10/13		7.50	0.00	0.00	88.10
105	2014/10/14		7.50	0.00	0.00	88.10
106	2014/10/15	7.50	7.50	0.00	0.00	88.10
107	2014/10/16		7.50	0.00	0.00	88.10
108	2014/10/17		7.50	0.00	0.00	88.10
109	2014/10/18		7.50	0.00	0.00	88.10
110	2014/10/19		7.50	0.00	0.00	88.10
111	2014/10/20		7.50	0.00	0.00	88.10
112	2014/10/21		7.50	0.00	0.00	88.10
113	2014/10/22	7.50	7.50	0.00	0.00	88.10
114	2014/10/23		7.50	0.00	0.00	88.10
115	2014/10/24		7.50	0.00	0.00	88.10
116	2014/10/25		7.50	0.00	0.00	88.10
117	2014/10/26		7.50	0.00	0.00	88.10
118	2014/10/27		7.50	0.00	0.00	88.10
119	2014/10/28		7.50	0.00	0.00	88.10
120	2014/10/29	7.50	7.50	0.00	0.00	88.10
121	2014/10/30		7.57	-0.07	-0.11	87.98
122	2014/10/31		7.64	-0.07	-0.11	87.87
123	2014/11/01		7.71	-0.07	-0.11	87.76
124	2014/11/02		7.79	-0.07	-0.11	87.64
125	2014/11/03		7.86	-0.07	-0.11	87.53
126	2014/11/04		7.93	-0.07	-0.11	87.41
127	2014/11/05	8.00	8.00	-0.07	-0.11	87.30
128	2014/11/06		8.00	0.00	0.00	87.30
129	2014/11/07		8.00	0.00	0.00	87.30
130	2014/11/08		8.00	0.00	0.00	87.30
131	2014/11/09		8.00	0.00	0.00	87.30
132	2014/11/10		8.00	0.00	0.00	87.30
133	2014/11/11		8.00	0.00	0.00	87.30
134	2014/11/12		8.00	0.00	0.00	87.30
135	2014/11/13	8.00	8.00	0.00	0.00	87.30
136	2014/11/14		8.00	0.00	0.00	87.30
137	2014/11/15		7.75	0.25	0.40	87.70
138	2014/11/16		7.50	0.25	0.40	88.10
139	2014/11/17		7.25	0.25	0.40	88.49
140	2014/11/18		7.00	0.25	0.40	88.89
141	2014/11/19	6.50	6.50	0.50	0.79	89.68

END OF WEIGHT LOSS DATA COLLECTION

CFDS/C-2

Day	Date	Pig Weight	LinInterp	Weight loss	% Weight loss	Cumulative % weight loss
0	2014/07/01	66.50	66.50	0.00	0.00	0.00
1	2014/07/02	66.00	66.00	0.50	0.75	0.75
2	2014/07/03	65.50	65.50	0.50	0.75	1.50
3	2014/07/04	64.50	64.50	1.00	1.50	3.01
4	2014/07/05	64.00	64.00	0.50	0.75	3.76
5	2014/07/06	63.50	63.50	0.50	0.75	4.51
6	2014/07/07	63.00	63.00	0.50	0.75	5.26
7	2014/07/08	62.50	62.50	0.50	0.75	6.02
8	2014/07/09	63.00	63.00	-0.50	-0.75	5.26
9	2014/07/10	61.50	61.50	1.50	2.26	7.52
10	2014/07/11	62.00	62.00	-0.50	-0.75	6.77
11	2014/07/12	61.00	61.00	1.00	1.50	8.27
12	2014/07/13	60.50	60.50	0.50	0.75	9.02
13	2014/07/14	60.50	60.50	0.00	0.00	9.02
14	2014/07/15	60.00	60.00	0.50	0.75	9.77
15	2014/07/16	59.50	59.50	0.50	0.75	10.53
16	2014/07/17	59.50	59.50	0.00	0.00	10.53
17	2014/07/18	59.00	59.00	0.50	0.75	11.28
18	2014/07/19	59.00	59.00	0.00	0.00	11.28
19	2014/07/20	58.00	58.00	1.00	1.50	12.78
20	2014/07/21	58.00	58.00	0.00	0.00	12.78
21	2014/07/22	58.00	58.00	0.00	0.00	12.78
22	2014/07/23		57.00	1.00	1.50	14.29
23	2014/07/24	56.00	56.00	1.00	1.50	15.79
24	2014/07/25	56.50	56.50	-0.50	-0.75	15.04
25	2014/07/26	56.50	56.50	0.00	0.00	15.04
26	2014/07/27	54.00	54.00	2.50	3.76	18.80
27	2014/07/28	54.00	54.00	0.00	0.00	18.80
28	2014/07/29	53.00	53.00	1.00	1.50	20.30
29	2014/07/30	52.00	52.00	1.00	1.50	21.80
30	2014/07/31	51.00	51.00	1.00	1.50	23.31
31	2014/08/01	50.50	50.50	0.50	0.75	24.06
32	2014/08/02	49.50	49.50	1.00	1.50	25.56
33	2014/08/03	48.50	48.50	1.00	1.50	27.07
34	2014/08/04	47.00	47.00	1.50	2.26	29.32
35	2014/08/05	47.50	47.50	-0.50	-0.75	28.57
36	2014/08/06	46.50	46.50	1.00	1.50	30.08
37	2014/08/07	46.00	46.00	0.50	0.75	30.83
38	2014/08/08	45.50	45.50	0.50	0.75	31.58
39	2014/08/09	44.50	44.50	1.00	1.50	33.08
40	2014/08/10	44.00	44.00	0.50	0.75	33.83
41	2014/08/11	42.50	42.50	1.50	2.26	36.09
42	2014/08/12	42.00	42.00	0.50	0.75	36.84
43	2014/08/13	40.50	40.50	1.50	2.26	39.10
44	2014/08/14	40.50	40.50	0.00	0.00	39.10
45	2014/08/15	39.50	39.50	1.00	1.50	40.60
46	2014/08/16	39.00	39.00	0.50	0.75	41.35
47	2014/08/17	38.50	38.50	0.50	0.75	42.11
48	2014/08/18	38.00	38.00	0.50	0.75	42.86
49	2014/08/19	37.00	37.00	1.00	1.50	44.36
50	2014/08/20		36.75	0.25	0.38	44.74
51	2014/08/21	36.50	36.50	0.25	0.38	45.11
52	2014/08/22	35.50	35.50	1.00	1.50	46.62
53	2014/08/23		34.75	0.75	1.13	47.74
54	2014/08/24	34.00	34.00	0.75	1.13	48.87
55	2014/08/25		33.75	0.25	0.38	49.25
56	2014/08/26	33.50	33.50	0.25	0.38	49.62
57	2014/08/27		33.25	0.25	0.38	50.00
58	2014/08/28	33.00	33.00	0.25	0.38	50.38
59	2014/08/29		32.25	0.75	1.13	51.50
60	2014/08/30	31.50	31.50	0.75	1.13	52.63
61	2014/08/31		30.25	1.25	1.88	54.51
62	2014/09/01	29.00	29.00	1.25	1.88	56.39
63	2014/09/02		28.25	0.75	1.13	57.52
64	2014/09/03	27.50	27.50	0.75	1.13	58.65
65	2014/09/04		27.00	0.50	0.75	59.40
66	2014/09/05	26.50	26.50	0.50	0.75	60.15
67	2014/09/06		25.75	0.75	1.13	61.28
68	2014/09/07	25.00	25.00	0.75	1.13	62.41
69	2014/09/08		24.75	0.25	0.38	62.78
70	2014/09/09	24.50	24.50	0.25	0.38	63.16
71	2014/09/10		23.50	1.00	1.50	64.66
72	2014/09/11	22.50	22.50	1.00	1.50	66.17
73	2014/09/12		22.00	0.50	0.75	66.92
74	2014/09/13		21.50	0.50	0.75	67.67
75	2014/09/14	21.00	21.00	0.50	0.75	68.42
76	2014/09/15		20.00	1.00	1.50	69.92
77	2014/09/16	19.00	19.00	1.00	1.50	71.43
78	2014/09/17		18.83	0.17	0.25	71.68
79	2014/09/18		18.67	0.17	0.25	71.93
80	2014/09/19	18.50	18.50	0.17	0.25	72.18
81	2014/09/20		18.33	0.17	0.25	72.43
82	2014/09/21		18.17	0.17	0.25	72.68
83	2014/09/22	18.00	18.00	0.17	0.25	72.93
84	2014/09/23		17.00	1.00	1.50	74.44
85	2014/09/24		16.00	1.00	1.50	75.94
86	2014/09/25	15.00	15.00	1.00	1.50	77.44
87	2014/09/26		14.50	0.50	0.75	78.20
88	2014/09/27		14.00	0.50	0.75	78.95
89	2014/09/28		13.50	0.50	0.75	79.70
90	2014/09/29	13.00	13.00	0.50	0.75	80.45
91	2014/09/30		13.00	0.00	0.00	80.45
92	2014/10/01		13.00	0.00	0.00	80.45
93	2014/10/02	13.00	13.00	0.00	0.00	80.45
94	2014/10/03		12.17	0.83	1.25	81.70
95	2014/10/04		11.33	0.83	1.25	82.96
96	2014/10/05	10.50	10.50	0.83	1.25	84.21
97	2014/10/06		10.17	0.33	0.50	84.71
98	2014/10/07		9.83	0.33	0.50	85.21
99	2014/10/08	9.50	9.50	0.33	0.50	85.71
100	2014/10/09		9.50	0.00	0.00	85.71
101	2014/10/10		9.50	0.00	0.00	85.71
102	2014/10/11	9.50	9.50	0.00	0.00	85.71
103	2014/10/12		9.25	0.25	0.38	86.09
104	2014/10/13		9.00	0.25	0.38	86.47
105	2014/10/14		8.75	0.25	0.38	86.84
106	2014/10/15	8.50	8.50	0.25	0.38	87.22
107	2014/10/16		8.43	0.07	0.11	87.33
108	2014/10/17		8.36	0.07	0.11	87.43
109	2014/10/18		8.29	0.07	0.11	87.54
110	2014/10/19		8.21	0.07	0.11	87.65
111	2014/10/20		8.14	0.07	0.11	87.76
112	2014/10/21		8.07	0.07	0.11	87.86
113	2014/10/22	8.00	8.00	0.07	0.11	87.97
114	2014/10/23		8.00	0.00	0.00	87.97
115	2014/10/24		8.00	0.00	0.00	87.97
116	2014/10/25		8.00	0.00	0.00	87.97
117	2014/10/26		8.00	0.00	0.00	87.97
118	2014/10/27		8.00	0.00	0.00	87.97
119	2014/10/28		8.00	0.00	0.00	87.97
120	2014/10/29	8.00	8.00	0.00	0.00	87.97
121	2014/10/30		8.00	0.00	0.00	87.97
122	2014/10/31		8.00	0.00	0.00	87.97
123	2014/11/01		8.00	0.00	0.00	87.97
124	2014/11/02		8.00	0.00	0.00	87.97
125	2014/11/03		8.00	0.00	0.00	87.97
126	2014/11/04		8.00	0.00	0.00	87.97
127	2014/11/05	8.00	8.00	0.00	0.00	87.97
128	2014/11/06		7.94	0.06	0.09	88.06
129	2014/11/07		7.88	0.06	0.09	88.16
130	2014/11/08		7.81	0.06	0.09	88.25
131	2014/11/09		7.75	0.06	0.09	88.35
132	2014/11/10		7.69	0.06	0.09	88.44
133	2014/11/11		7.63	0.06	0.09	88.53
134	2014/11/12		7.56	0.06	0.09	88.63
135	2014/11/13	7.50	7.50	0.06	0.09	88.72
136	2014/11/14		7.50	0.00	0.00	88.72
137	2014/11/15		7.50	0.00	0.00	88.72
138	2014/11/16		7.50	0.00	0.00	88.72
139	2014/11/17		7.50	0.00	0.00	88.72
140	2014/11/18		7.50	0.00	0.00	88.72
141	2014/11/19	7.50	7.50	0.00	0.00	88.72

END OF WEIGHT LOSS DATA COLLECTION

Day *= cycle day;* ***Pig Weight*** *= original weight recorded;* ***LinInterp*** *= linearly interpolated weight;* ***Weight loss*** *calculated using "LinInterp";* ***% Weight loss*** *is "Weight loss" as a percentage of "LinInterp";* ***Cumulative % weight loss*** *is "% Weight loss" accumulated daily.*

APPENDIX A4.4 - Raw weight loss data (Cycle 2 | S-2015)

CFDS/O-1

Day	Date	Pig Weight	LinInterp	Weight loss	% Weight loss	Cumulative % weight loss
0	2015/01/13	68	68	0	0	0
1	2015/01/14	68	68	0	0	0
2	2015/01/15	67.5	67.5	0.5	0.74	0.74
3	2015/01/16	67	67	0.5	0.74	1.47
4	2015/01/17	65	65	2	2.94	4.41
5	2015/01/18	64	64	1	1.47	5.88
6	2015/01/19	62	62	2	2.94	8.82
7	2015/01/20	60	60	2	2.94	11.76
8	2015/01/21	57	57	3	4.41	16.18
9	2015/01/22	53	53	4	5.88	22.06
10	2015/01/23	51.5	51.5	1.5	2.21	24.26
11	2015/01/24	49.5	49.5	2	2.94	27.21
12	2015/01/25	47	47	2.5	3.68	30.88
13	2015/01/26	46	46	1	1.47	32.35
14	2015/01/27	45	45	1	1.47	33.82
15	2015/01/28	43	43	2	2.94	36.76
16	2015/01/29		41.75	1.25	1.84	38.6
17	2015/01/30	40.5	40.5	1.25	1.84	40.44
18	2015/01/31		40	0.5	0.74	41.18
19	2015/02/01	39.5	39.5	0.5	0.74	41.91
20	2015/02/02	38.5	38.5	1	1.47	43.38
21	2015/02/03	37.5	37.5	1	1.47	44.85
22	2015/02/04	36.5	36.5	1	1.47	46.32
23	2015/02/05	36.5	36.5	0	0	46.32
24	2015/02/06	36	36	0.5	0.74	47.06
25	2015/02/07		35	1	1.47	48.53
26	2015/02/08	34	34	1	1.47	50
27	2015/02/09	33	33	1	1.47	51.47
28	2015/02/10	33	33	0	0	51.47
29	2015/02/11		32.5	0.5	0.74	52.21
30	2015/02/12	32	32	0.5	0.74	52.94
31	2015/02/13		31.25	0.75	1.1	54.04
32	2015/02/14	30.5	30.5	0.75	1.1	55.15
33	2015/02/15		30	0.5	0.74	55.88
34	2015/02/16		29.5	0.5	0.74	56.62
35	2015/02/17	29	29	0.5	0.74	57.35
36	2015/02/18		28.33	0.67	0.98	58.33
37	2015/02/19		27.67	0.67	0.98	59.31
38	2015/02/20	27	27	0.67	0.98	60.29
39	2015/02/21		26.5	0.5	0.74	61.03
40	2015/02/22		26	0.5	0.74	61.76
41	2015/02/23		25.5	0.5	0.74	62.5
42	2015/02/24	25	25	0.5	0.74	63.24
43	2015/02/25		24.67	0.33	0.49	63.73
44	2015/02/26		24.33	0.33	0.49	64.22
45	2015/02/27	24	24	0.33	0.49	64.71
46	2015/02/28		23.17	0.83	1.23	65.93
47	2015/03/01		22.33	0.83	1.23	67.16
48	2015/03/02	21.5	21.5	0.83	1.23	68.38
49	2015/03/03		20.83	0.67	0.98	69.36
50	2015/03/04		20.17	0.67	0.98	70.34
51	2015/03/05	19.5	19.5	0.67	0.98	71.32
52	2015/03/06		19.17	0.33	0.49	71.81
53	2015/03/07		18.83	0.33	0.49	72.3
54	2015/03/08	18.5	18.5	0.33	0.49	72.79
55	2015/03/09		18	0.5	0.74	73.53
56	2015/03/10		17.5	0.5	0.74	74.26
57	2015/03/11	17	17	0.5	0.74	75
58	2015/03/12		16.5	0.5	0.74	75.74
59	2015/03/13		16	0.5	0.74	76.47
60	2015/03/14		15.5	0.5	0.74	77.21
61	2015/03/15	15	15	0.5	0.74	77.94
62	2015/03/16		14.83	0.17	0.25	78.19
63	2015/03/17		14.67	0.17	0.25	78.43
64	2015/03/18	14.5	14.5	0.17	0.25	78.68
65	2015/03/19		14.33	0.17	0.25	78.92
66	2015/03/20		14.17	0.17	0.25	79.17
67	2015/03/21	14	14	0.17	0.25	79.41
68	2015/03/22		13.67	0.33	0.49	79.9
69	2015/03/23		13.33	0.33	0.49	80.39
70	2015/03/24	13	13	0.33	0.49	80.88
71	2015/03/25		12.83	0.17	0.25	81.13
72	2015/03/26		12.67	0.17	0.25	81.37
73	2015/03/27		12.5	0.17	0.25	81.62
74	2015/03/28		12.33	0.17	0.25	81.86
75	2015/03/29		12.17	0.17	0.25	82.11
76	2015/03/30	12	12	0.17	0.25	82.35
		END OF WEIGHT LOSS DATA COLLECTION				

CFDS/O-2

Day	Date	Pig Weight	LinInterp	Weight loss	% Weight loss	Cumulative % weight loss
0	2015/01/13	65	65	0	0	0
1	2015/01/14	64.5	64.5	0.5	0.77	0.77
2	2015/01/15	63.5	63.5	1	1.54	2.31
3	2015/01/16	62.5	62.5	1	1.54	3.85
4	2015/01/17	62	62	0.5	0.77	4.62
5	2015/01/18	58	58	4	6.15	10.77
6	2015/01/19	53.5	53.5	4.5	6.92	17.69
7	2015/01/20	45.5	45.5	8	12.31	30
8	2015/01/21	39	39	6.5	10	40
9	2015/01/22	30	30	9	13.85	53.85
10	2015/01/23	28	28	2	3.08	56.92
11	2015/01/24	26	26	2	3.08	60
12	2015/01/25	24.5	24.5	1.5	2.31	62.31
13	2015/01/26	23	23	1.5	2.31	64.62
14	2015/01/27	22.5	22.5	0.5	0.77	65.38
15	2015/01/28	21.5	21.5	1	1.54	66.92
16	2015/01/29		20.75	0.75	1.15	68.08
17	2015/01/30	20	20	0.75	1.15	69.23
18	2015/01/31		19.25	0.75	1.15	70.38
19	2015/02/01	18.5	18.5	0.75	1.15	71.54
20	2015/02/02	18	18	0.5	0.77	72.31
21	2015/02/03	17	17	1	1.54	73.85
22	2015/02/04	16.5	16.5	0.5	0.77	74.62
23	2015/02/05	16	16	0.5	0.77	75.38
24	2015/02/06	15	15	1	1.54	76.92
25	2015/02/07		14.5	0.5	0.77	77.69
26	2015/02/08	14	14	0.5	0.77	78.46
27	2015/02/09	13	13	1	1.54	80
28	2015/02/10	13	13	0	0	80
29	2015/02/11		12.25	0.75	1.15	81.15
30	2015/02/12	11.5	11.5	0.75	1.15	82.31
31	2015/02/13		11.25	0.25	0.38	82.69
32	2015/02/14	11	11	0.25	0.38	83.08
33	2015/02/15		10.5	0.5	0.77	83.85
34	2015/02/16		10	0.5	0.77	84.62
35	2015/02/17	9.5	9.5	0.5	0.77	85.38
36	2015/02/18		9.17	0.33	0.51	85.9
37	2015/02/19		8.83	0.33	0.51	86.41
38	2015/02/20	8.5	8.5	0.33	0.51	86.92
39	2015/02/21		8.13	0.38	0.58	87.5
40	2015/02/22		7.75	0.38	0.58	88.08
41	2015/02/23		7.38	0.38	0.58	88.65
42	2015/02/24	7	7	0.38	0.58	89.23
43	2015/02/25		6.83	0.17	0.26	89.49
44	2015/02/26		6.67	0.17	0.26	89.74
45	2015/02/27	6.5	6.5	0.17	0.26	90
46	2015/02/28		6.33	0.17	0.26	90.26
47	2015/03/01		6.17	0.17	0.26	90.51
48	2015/03/02	6	6	0.17	0.26	90.77
49	2015/03/03		5.83	0.17	0.26	91.03
50	2015/03/04		5.67	0.17	0.26	91.28
51	2015/03/05	5.5	5.5	0.17	0.26	91.54
52	2015/03/06		5.33	0.17	0.26	91.79
53	2015/03/07		5.17	0.17	0.26	92.05
54	2015/03/08	5	5	0.17	0.26	92.31
55	2015/03/09		5	0	0	92.31
56	2015/03/10		5	0	0	92.31
57	2015/03/11	5	5	0	0	92.31
58	2015/03/12	END OF WEIGHT LOSS DATA COLLECTION				
59	2015/03/13					
60	2015/03/14					
61	2015/03/15					
62	2015/03/16					
63	2015/03/17					
64	2015/03/18					
65	2015/03/19					
66	2015/03/20					
67	2015/03/21					
68	2015/03/22					
69	2015/03/23					
70	2015/03/24					
71	2015/03/25					
72	2015/03/26					
73	2015/03/27					
74	2015/03/28					
75	2015/03/29					
76	2015/03/30					

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Day	Date	Pig Weight	LinInterp	Weight loss	% Weight loss	Cumulative % weight loss
0	2015/01/13	67.5	67.5	0	0	0
1	2015/01/14	65.5	65.5	2	2.96	2.96
2	2015/01/15	64	64	1.5	2.22	5.19
3	2015/01/16	63	63	1	1.48	6.67
4	2015/01/17	63.5	63.5	-0.5	-0.74	5.93
5	2015/01/18	61.5	61.5	2	2.96	8.89
6	2015/01/19	61	61	0.5	0.74	9.63
7	2015/01/20	60	60	1	1.48	11.11
8	2015/01/21	58.5	58.5	1.5	2.22	13.33
9	2015/01/22	56.5	56.5	2	2.96	16.3
10	2015/01/23	55	55	1.5	2.22	18.52
11	2015/01/24	54	54	1	1.48	20
12	2015/01/25	51	51	3	4.44	24.44
13	2015/01/26	47.5	47.5	3.5	5.19	29.63
14	2015/01/27	45	45	2.5	3.7	33.33
15	2015/01/28	40.5	40.5	4.5	6.67	40
16	2015/01/29		36	4.5	6.67	46.67
17	2015/01/30	31.5	31.5	4.5	6.67	53.33
18	2015/01/31		29.75	1.75	2.59	55.93
19	2015/02/01	28	28	1.75	2.59	58.52
20	2015/02/02	26	26	2	2.96	61.48
21	2015/02/03	24	24	2	2.96	64.44
22	2015/02/04	24	24	0	0	64.44
23	2015/02/05	22	22	2	2.96	67.41
24	2015/02/06	20.5	20.5	1.5	2.22	69.63
25	2015/02/07		19.5	1	1.48	71.11
26	2015/02/08	18.5	18.5	1	1.48	72.59
27	2015/02/09	16.5	16.5	2	2.96	75.56
28	2015/02/10	15.5	15.5	1	1.48	77.04
29	2015/02/11		15	0.5	0.74	77.78
30	2015/02/12	14.5	14.5	0.5	0.74	78.52
31	2015/02/13		14.25	0.25	0.37	78.89
32	2015/02/14	14	14	0.25	0.37	79.26
33	2015/02/15		13.33	0.67	0.99	80.25
34	2015/02/16		12.67	0.67	0.99	81.23
35	2015/02/17	12	12	0.67	0.99	82.22
36	2015/02/18	END OF WEIGHT LOSS DATA COLLECTION				
37	2015/02/19					
38	2015/02/20					
39	2015/02/21					
40	2015/02/22					
41	2015/02/23					
42	2015/02/24					
43	2015/02/25					
44	2015/02/26					
45	2015/02/27					
46	2015/02/28					
47	2015/03/01					
48	2015/03/02					
49	2015/03/03					
50	2015/03/04					
51	2015/03/05					
52	2015/03/06					
53	2015/03/07					
54	2015/03/08					
55	2015/03/09					
56	2015/03/10					
57	2015/03/11					
58	2015/03/12					
59	2015/03/13					
60	2015/03/14					
61	2015/03/15					
62	2015/03/16					
63	2015/03/17					
64	2015/03/18					
65	2015/03/19					
66	2015/03/20					
67	2015/03/21					
68	2015/03/22					
69	2015/03/23					
70	2015/03/24					
71	2015/03/25					
72	2015/03/26					
73	2015/03/27					
74	2015/03/28					
75	2015/03/29					
76	2015/03/30					

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Day	Date	Pig Weight	LinInterp	Weight loss	% Weight loss	Cumulative % weight loss
0	2015/01/13	66.5	66.5	0	0	0
1	2015/01/14	66	66	0.5	0.75	0.75
2	2015/01/15	65.5	65.5	0.5	0.75	1.5
3	2015/01/16	64.5	64.5	1	1.5	3.01
4	2015/01/17	63	63	1.5	2.26	5.26
5	2015/01/18	62	62	1	1.5	6.77
6	2015/01/19	61.5	61.5	0.5	0.75	7.52
7	2015/01/20	60	60	1.5	2.26	9.77
8	2015/01/21	58.5	58.5	1.5	2.26	12.03
9	2015/01/22	54.5	54.5	4	6.02	18.05
10	2015/01/23	51	51	3.5	5.26	23.31
11	2015/01/24	46.5	46.5	4.5	6.77	30.08
12	2015/01/25	42	42	4.5	6.77	36.84
13	2015/01/26	39	39	3	4.51	41.35
14	2015/01/27	37	37	2	3.01	44.36
15	2015/01/28	32.5	32.5	4.5	6.77	51.13
16	2015/01/29		30.5	2	3.01	54.14
17	2015/01/30	28.5	28.5	2	3.01	57.14
18	2015/01/31		27.5	1	1.5	58.65
19	2015/02/01	26.5	26.5	1	1.5	60.15
20	2015/02/02	27	27	-0.5	-0.75	59.4
21	2015/02/03	25.5	25.5	1.5	2.26	61.65
22	2015/02/04	24.5	24.5	1	1.5	63.16
23	2015/02/05	24	24	0.5	0.75	63.91
24	2015/02/06	23.5	23.5	0.5	0.75	64.66
25	2015/02/07		22.75	0.75	1.13	65.79
26	2015/02/08	22	22	0.75	1.13	66.92
27	2015/02/09	21.5	21.5	0.5	0.75	67.67
28	2015/02/10	21	21	0.5	0.75	68.42
29	2015/02/11		20.5	0.5	0.75	69.17
30	2015/02/12	20	20	0.5	0.75	69.92
31	2015/02/13		19.75	0.25	0.38	70.3
32	2015/02/14	19.5	19.5	0.25	0.38	70.68
33	2015/02/15		19	0.5	0.75	71.43
34	2015/02/16		18.5	0.5	0.75	72.18
35	2015/02/17	18	18	0.5	0.75	72.93
36	2015/02/18		17.67	0.33	0.5	73.43
37	2015/02/19		17.33	0.33	0.5	73.93
38	2015/02/20	17	17	0.33	0.5	74.44
39	2015/02/21		16.63	0.38	0.56	75
40	2015/02/22		16.25	0.38	0.56	75.56
41	2015/02/23		15.88	0.38	0.56	76.13
42	2015/02/24	15.5	15.5	0.38	0.56	76.69
43	2015/02/25		15.17	0.33	0.5	77.19
44	2015/02/26		14.83	0.33	0.5	77.69
45	2015/02/27	14.5	14.5	0.33	0.5	78.2
46	2015/02/28		14	0.5	0.75	78.95
47	2015/03/01		13.5	0.5	0.75	79.7
48	2015/03/02	13	13	0.5	0.75	80.45
49	2015/03/03		12.5	0.5	0.75	81.2
50	2015/03/04		12	0.5	0.75	81.95
51	2015/03/05	11.5	11.5	0.5	0.75	82.71
52	2015/03/06		11.33	0.17	0.25	82.96
53	2015/03/07		11.17	0.17	0.25	83.21
54	2015/03/08	11	11	0.17	0.25	83.46
55	2015/03/09		11	0	0	83.46
56	2015/03/10		11	0	0	83.46
57	2015/03/11	11	11	0	0	83.46
58	2015/03/12		10.88	0.13	0.19	83.65
59	2015/03/13		10.75	0.13	0.19	83.83
60	2015/03/14		10.63	0.13	0.19	84.02
61	2015/03/15	10.5	10.5	0.13	0.19	84.21
62	2015/03/16		10.5	0	0	84.21
63	2015/03/17		10.5	0	0	84.21
64	2015/03/18	10.5	10.5	0	0	84.21
65	2015/03/19		10.5	0	0	84.21
66	2015/03/20		10.5	0	0	84.21
67	2015/03/21	10.5	10.5	0	0	84.21
68	2015/03/22		10.5	0	0	84.21
69	2015/03/23		10.5	0	0	84.21
70	2015/03/24	10.5	10.5	0	0	84.21
71	2015/03/25		10.5	0	0	84.21
72	2015/03/26		10.5	0	0	84.21
73	2015/03/27		10.5	0	0	84.21
74	2015/03/28		10.5	0	0	84.21
75	2015/03/29		10.5	0	0	84.21
76	2015/03/30	10.5	10.5	0	0	84.21
		END OF WEIGHT LOSS DATA COLLECTION				

***Day** = cycle day; **Pig Weight** = original weight recorded; **LinInterp** = linearly interpolated weight; **Weight loss** calculated using "LinInterp"; **% Weight loss** is "Weight loss" as a percentage of "LinInterp"; **Cumulative % weight loss** is "% Weight loss" accumulated daily.*

APPENDIX A4.5 - Raw weight loss data (Cycle 3 | W-2015)

CFDS/O-1

Day	Date	Pig Weight	LinInterp	Weight loss	% Weight loss	Cumulative % weight loss
0	2015/07/06	62.5	62.50	0.00	0.00	0.00
1	2015/07/07	62.5	62.50	0.00	0.00	0.00
2	2015/07/08	62.5	62.50	0.00	0.00	0.00
3	2015/07/09	62	62.00	0.50	0.80	0.80
4	2015/07/10	62	62.00	0.00	0.00	0.80
5	2015/07/11	61.5	61.50	0.50	0.80	1.60
6	2015/07/12	61.5	61.50	0.00	0.00	1.60
7	2015/07/13	61.5	61.50	0.00	0.00	1.60
8	2015/07/14	61.5	61.50	0.00	0.00	1.60
9	2015/07/15	61.5	61.50	0.00	0.00	1.60
10	2015/07/16	61.5	61.50	0.00	0.00	1.60
11	2015/07/17	61.5	61.50	0.00	0.00	1.60
12	2015/07/18		61.50	0.00	0.00	1.60
13	2015/07/19	61.5	61.50	0.00	0.00	1.60
14	2015/07/20	61.5	61.50	0.00	0.00	1.60
15	2015/07/21	61	61.00	0.50	0.80	2.40
16	2015/07/22	61	61.00	0.00	0.00	2.40
17	2015/07/23	61	61.00	0.00	0.00	2.40
18	2015/07/24	61	61.00	0.00	0.00	2.40
19	2015/07/25	61	61.00	0.00	0.00	2.40
20	2015/07/26		61.00	0.00	0.00	2.40
21	2015/07/27	61	61.00	0.00	0.00	2.40
22	2015/07/28	60.5	60.50	0.50	0.80	3.20
23	2015/07/29		60.25	0.25	0.40	3.60
24	2015/07/30	60	60.00	0.25	0.40	4.00
25	2015/07/31	60	60.00	0.00	0.00	4.00
26	2015/08/01	59.5	59.50	0.50	0.80	4.80
27	2015/08/02		59.25	0.25	0.40	5.20
28	2015/08/03	59	59.00	0.25	0.40	5.60
29	2015/08/04		58.75	0.25	0.40	6.00
30	2015/08/05	58.5	58.50	0.25	0.40	6.40
31	2015/08/06	58.5	58.50	0.00	0.00	6.40
32	2015/08/07	57	57.00	1.50	2.40	8.80
33	2015/08/08	57	57.00	0.00	0.00	8.80
34	2015/08/09	56	56.00	1.00	1.60	10.40
35	2015/08/10		55.50	0.50	0.80	11.20
36	2015/08/11	55	55.00	0.50	0.80	12.00
37	2015/08/12	55	55.00	0.00	0.00	12.00
38	2015/08/13	54	54.00	1.00	1.60	13.60
39	2015/08/14	54	54.00	0.00	0.00	13.60
40	2015/08/15		53.67	0.33	0.53	14.13
41	2015/08/16		53.33	0.33	0.53	14.67
42	2015/08/17	53	53.00	0.33	0.53	15.20
43	2015/08/18		52.25	0.75	1.20	16.40
44	2015/08/19	51.5	51.50	0.75	1.20	17.60
45	2015/08/20		50.75	0.75	1.20	18.80
46	2015/08/21	50	50.00	0.75	1.20	20.00
47	2015/08/22	49	49.00	1.00	1.60	21.60
48	2015/08/23		48.00	1.00	1.60	23.20
49	2015/08/24	47	47.00	1.00	1.60	24.80
50	2015/08/25	47	47.00	0.00	0.00	24.80
51	2015/08/26	45.5	45.50	1.50	2.40	27.20
52	2015/08/27	44	44.00	1.50	2.40	29.60
53	2015/08/28	43	43.00	1.00	1.60	31.20
54	2015/08/29		41.00	2.00	3.20	34.40
55	2015/08/30	39	39.00	2.00	3.20	37.60
56	2015/08/31		38.75	0.25	0.40	38.00
57	2015/09/01	38.5	38.50	0.25	0.40	38.40
58	2015/09/02		37.25	1.25	2.00	40.40
59	2015/09/03	36	36.00	1.25	2.00	42.40
60	2015/09/04	36	36.00	0.00	0.00	42.40
61	2015/09/05	35	35.00	1.00	1.60	44.00
62	2015/09/06	33.5	33.50	1.50	2.40	46.40
63	2015/09/07	34	34.00	-0.50	-0.80	45.60
64	2015/09/08		33.50	0.50	0.80	46.40
65	2015/09/09	33	33.00	0.50	0.80	47.20
66	2015/09/10	33	33.00	0.00	0.00	47.20
67	2015/09/11		32.50	0.50	0.80	48.00
68	2015/09/12	32	32.00	0.50	0.80	48.80
69	2015/09/13		31.00	1.00	1.60	50.40
70	2015/09/14	30	30.00	1.00	1.60	52.00
71	2015/09/15		30.00	0.00	0.00	52.00
72	2015/09/16	30	30.00	0.00	0.00	52.00
73	2015/09/17	28.5	28.50	1.50	2.40	54.40
74	2015/09/18	27.5	27.50	1.00	1.60	56.00
75	2015/09/19		26.75	0.75	1.20	57.20
76	2015/09/20	26	26.00	0.75	1.20	58.40
77	2015/09/21	25.5	25.50	0.50	0.80	59.20
78	2015/09/22	23.5	23.50	2.00	3.20	62.40
79	2015/09/23	23	23.00	0.50	0.80	63.20
80	2015/09/24	23	23.00	0.00	0.00	63.20
81	2015/09/25	22.5	22.50	0.50	0.80	64.00
82	2015/09/26	21	21.00	1.50	2.40	66.40
83	2015/09/27		21.25	-0.25	-0.40	66.00
84	2015/09/28	21.5	21.50	-0.25	-0.40	65.60
85	2015/09/29	20.5	20.50	1.00	1.60	67.20
86	2015/09/30		19.75	0.75	1.20	68.40
87	2015/10/01	19	19.00	0.75	1.20	69.60
88	2015/10/02	18	18.00	1.00	1.60	71.20
89	2015/10/03		17.25	0.75	1.20	72.40
90	2015/10/04	16.5	16.50	0.75	1.20	73.60
91	2015/10/05	16.5	16.50	0.00	0.00	73.60
92	2015/10/06	14.5	14.50	2.00	3.20	76.80
93	2015/10/07	14	14.00	0.50	0.80	77.60
94	2015/10/08	13	13.00	1.00	1.60	79.20
95	2015/10/09	12.5	12.50	0.50	0.80	80.00
96	2015/10/10	12.5	12.50	0.00	0.00	80.00
97	2015/10/11		12.50	0.00	0.00	80.00
98	2015/10/12	12.5	12.50	0.00	0.00	80.00
99	2015/10/13	11	11.00	1.50	2.40	82.40
100	2015/10/14	10	10.00	1.00	1.60	84.00
101	2015/10/15	9.5	9.50	0.50	0.80	84.80
102	2015/10/16	9.5	9.50	0.00	0.00	84.80
103	2015/10/17	9	9.00	0.50	0.80	85.60
104	2015/10/18		8.67	0.33	0.53	86.13
105	2015/10/19		8.33	0.33	0.53	86.67
106	2015/10/20	8	8.00	0.33	0.53	87.20
107	2015/10/21		8.00	0.00	0.00	87.20
108	2015/10/22		8.00	0.00	0.00	87.20
109	2015/10/23	8	8.00	0.00	0.00	87.20
110	2015/10/24		7.67	0.33	0.53	87.73
111	2015/10/25		7.33	0.33	0.53	88.27
112	2015/10/26	7	7.00	0.33	0.53	88.80
113	2015/10/27		7.00	0.00	0.00	88.80
114	2015/10/28		7.00	0.00	0.00	88.80
115	2015/10/29	7	7.00	0.00	0.00	88.80
116	2015/10/30		6.92	0.08	0.13	88.93
117	2015/10/31		6.83	0.08	0.13	89.07
118	2015/11/01		6.75	0.08	0.13	89.20
119	2015/11/02		6.67	0.08	0.13	89.33
120	2015/11/03		6.58	0.08	0.13	89.47
121	2015/11/04	6.5	6.50	0.08	0.13	89.60
122	2015/11/05	END OF WEIGHT LOSS DATA COLLECTION				
123	2015/11/06					
124	2015/11/07					
125	2015/11/08					
126	2015/11/09					
127	2015/11/10					
128	2015/11/11					
129	2015/11/12					
130	2015/11/13					
131	2015/11/14					
132	2015/11/15					
133	2015/11/16					
134	2015/11/17					
135	2015/11/18					
136	2015/11/19					
137	2015/11/20					
138	2015/11/21					
139	2015/11/22					
140	2015/11/23					
141	2015/11/24					

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Day	Date	Pig Weight	LinInterp	Weight loss	% Weight loss	Cumulative % weight loss
0	2015/07/06	64	64.00	0.00	0.00	0.00
1	2015/07/07	64	64.00	0.00	0.00	0.00
2	2015/07/08	64	64.00	0.00	0.00	0.00
3	2015/07/09	63	63.00	1.00	1.56	1.56
4	2015/07/10	63	63.00	0.00	0.00	1.56
5	2015/07/11	62.5	62.50	0.50	0.78	2.34
6	2015/07/12	62.5	62.50	0.00	0.00	2.34
7	2015/07/13	62.5	62.50	0.00	0.00	2.34
8	2015/07/14	62.5	62.50	0.00	0.00	2.34
9	2015/07/15	62.5	62.50	0.00	0.00	2.34
10	2015/07/16	62.5	62.50	0.00	0.00	2.34
11	2015/07/17	62.5	62.50	0.00	0.00	2.34
12	2015/07/18		62.50	0.00	0.00	2.34
13	2015/07/19	62.5	62.50	0.00	0.00	2.34
14	2015/07/20	62.5	62.50	0.00	0.00	2.34
15	2015/07/21	62.5	62.50	0.00	0.00	2.34
16	2015/07/22	62.5	62.50	0.00	0.00	2.34
17	2015/07/23	61.5	61.50	1.00	1.56	3.91
18	2015/07/24	61.5	61.50	0.00	0.00	3.91
19	2015/07/25	61.5	61.50	0.00	0.00	3.91
20	2015/07/26		61.00	0.50	0.78	4.69
21	2015/07/27	60.5	60.50	0.50	0.78	5.47
22	2015/07/28	60.5	60.50	0.00	0.00	5.47
23	2015/07/29		60.50	0.00	0.00	5.47
24	2015/07/30	60.5	60.50	0.00	0.00	5.47
25	2015/07/31	60.5	60.50	0.00	0.00	5.47
26	2015/08/01	59.5	59.50	1.00	1.56	7.03
27	2015/08/02		59.50	0.00	0.00	7.03
28	2015/08/03	59.5	59.50	0.00	0.00	7.03
29	2015/08/04		59.25	0.25	0.39	7.42
30	2015/08/05	59	59.00	0.25	0.39	7.81
31	2015/08/06	59	59.00	0.00	0.00	7.81
32	2015/08/07	58.5	58.50	0.50	0.78	8.59
33	2015/08/08	57.5	57.50	1.00	1.56	10.16
34	2015/08/09	57.5	57.50	0.00	0.00	10.16
35	2015/08/10		57.50	0.00	0.00	10.16
36	2015/08/11	57.5	57.50	0.00	0.00	10.16
37	2015/08/12	57.5	57.50	0.00	0.00	10.16
38	2015/08/13	57	57.00	0.50	0.78	10.94
39	2015/08/14	57	57.00	0.00	0.00	10.94
40	2015/08/15		55.83	1.17	1.82	12.76
41	2015/08/16		54.67	1.17	1.82	14.58
42	2015/08/17	53.5	53.50	1.17	1.82	16.41
43	2015/08/18		53.50	0.00	0.00	16.41
44	2015/08/19	53.5	53.50	0.00	0.00	16.41
45	2015/08/20		53.50	0.00	0.00	16.41
46	2015/08/21	53.5	53.50	0.00	0.00	16.41
47	2015/08/22	49.5	49.50	4.00	6.25	22.66
48	2015/08/23		49.50	0.00	0.00	22.66
49	2015/08/24	49.5	49.50	0.00	0.00	22.66
50	2015/08/25	49.5	49.50	0.00	0.00	22.66
51	2015/08/26	49.5	49.50	0.00	0.00	22.66
52	2015/08/27	50	50.00	-0.50	-0.78	21.88
53	2015/08/28	49	49.00	1.00	1.56	23.44
54	2015/08/29		48.75	0.25	0.39	23.83
55	2015/08/30	48.5	48.50	0.25	0.39	24.22
56	2015/08/31		48.50	0.00	0.00	24.22
57	2015/09/01	48.5	48.50	0.00	0.00	24.22
58	2015/09/02		46.75	1.75	2.73	26.95
59	2015/09/03	45	45.00	1.75	2.73	29.69
60	2015/09/04	45.5	45.50	-0.50	-0.78	28.91
61	2015/09/05	44	44.00	1.50	2.34	31.25
62	2015/09/06	43.5	43.50	0.50	0.78	32.03
63	2015/09/07	42.5	42.50	1.00	1.56	33.59
64	2015/09/08		42.75	-0.25	-0.39	33.20
65	2015/09/09	43	43.00	-0.25	-0.39	32.81
66	2015/09/10	43.5	43.50	-0.50	-0.78	32.03
67	2015/09/11		42.50	1.00	1.56	33.59
68	2015/09/12	41.5	41.50	1.00	1.56	35.16
69	2015/09/13		40.75	0.75	1.17	36.33
70	2015/09/14	40	40.00	0.75	1.17	37.50
71	2015/09/15		40.25	-0.25	-0.39	37.11
72	2015/09/16	40.5	40.50	-0.25	-0.39	36.72
73	2015/09/17	39.5	39.50	1.00	1.56	38.28
74	2015/09/18	39.5	39.50	0.00	0.00	38.28
75	2015/09/19		38.00	1.50	2.34	40.63
76	2015/09/20	36.5	36.50	1.50	2.34	42.97
77	2015/09/21	38	38.00	-1.50	-2.34	40.63
78	2015/09/22	37.5	37.50	0.50	0.78	41.41
79	2015/09/23	36	36.00	1.50	2.34	43.75
80	2015/09/24	35	35.00	1.00	1.56	45.31
81	2015/09/25	34.5	34.50	0.50	0.78	46.09
82	2015/09/26	33.5	33.50	1.00	1.56	47.66
83	2015/09/27		33.75	-0.25	-0.39	47.27
84	2015/09/28	34	34.00	-0.25	-0.39	46.88
85	2015/09/29	33	33.00	1.00	1.56	48.44
86	2015/09/30		33.25	-0.25	-0.39	48.05
87	2015/10/01	33.5	33.50	-0.25	-0.39	47.66
88	2015/10/02	33	33.00	0.50	0.78	48.44
89	2015/10/03		31.50	1.50	2.34	50.78
90	2015/10/04	30	30.00	1.50	2.34	53.13
91	2015/10/05	29.5	29.50	0.50	0.78	53.91
92	2015/10/06	27	27.00	2.50	3.91	57.81
93	2015/10/07	25.5	25.50	1.50	2.34	60.16
94	2015/10/08	23.5	23.50	2.00	3.13	63.28
95	2015/10/09	22.5	22.50	1.00	1.56	64.84
96	2015/10/10	20.5	20.50	2.00	3.13	67.97
97	2015/10/11		20.00	0.50	0.78	68.75
98	2015/10/12	19.5	19.50	0.50	0.78	69.53
99	2015/10/13	18	18.00	1.50	2.34	71.88
100	2015/10/14	18	18.00	0.00	0.00	71.88
101	2015/10/15	15.5	15.50	2.50	3.91	75.78
102	2015/10/16	16	16.00	-0.50	-0.78	75.00
103	2015/10/17	15.5	15.50	0.50	0.78	75.78
104	2015/10/18		14.67	0.83	1.30	77.08
105	2015/10/19		13.83	0.83	1.30	78.39
106	2015/10/20	13	13.00	0.83	1.30	79.69
107	2015/10/21		12.83	0.17	0.26	79.95
108	2015/10/22		12.67	0.17	0.26	80.21
109	2015/10/23	12.5	12.50	0.17	0.26	80.47
110	2015/10/24		12.17	0.33	0.52	80.99
111	2015/10/25		11.83	0.33	0.52	81.51
112	2015/10/26	11.5	11.50	0.33	0.52	82.03
113	2015/10/27		11.17	0.33	0.52	82.55
114	2015/10/28		10.83	0.33	0.52	83.07
115	2015/10/29	10.5	10.50	0.33	0.52	83.59
116	2015/10/30		10.50	0.00	0.00	83.59
117	2015/10/31		10.50	0.00	0.00	83.59
118	2015/11/01		10.50	0.00	0.00	83.59
119	2015/11/02		10.50	0.00	0.00	83.59
120	2015/11/03		10.50	0.00	0.00	83.59
121	2015/11/04	10.5	10.50	0.00	0.00	83.59
122	2015/11/05		10.67	-0.17	-0.26	83.33
123	2015/11/06		10.83	-0.17	-0.26	83.07
124	2015/11/07	11	11.00	-0.17	-0.26	82.81
125	2015/11/08		11.00	0.00	0.00	82.81
126	2015/11/09		11.00	0.00	0.00	82.81
127	2015/11/10	11	11.00	0.00	0.00	82.81
128	2015/11/11		10.83	0.17	0.26	83.07
129	2015/11/12		10.67	0.17	0.26	83.33
130	2015/11/13		10.50	0.17	0.26	83.59
131	2015/11/14		10.33	0.17	0.26	83.85
132	2015/11/15		10.17	0.17	0.26	84.11
133	2015/11/16	10	10.00	0.17	0.26	84.38
134	2015/11/17		9.67	0.33	0.52	84.90
135	2015/11/18		9.33	0.33	0.52	85.42
136	2015/11/19	9	9.00	0.33	0.52	85.94
137	2015/11/20		9.00	0.00	0.00	85.94
138	2015/11/21		9.00	0.00	0.00	85.94
139	2015/11/22		9.00	0.00	0.00	85.94
140	2015/11/23		9.00	0.00	0.00	85.94
141	2015/11/24		9.00	0.00	0.00	85.94
		END OF WEIGHT LOSS DATA COLLECTION				

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Day	Date	Pig Weight	LinInterp	Weight loss	% Weight loss	Cumulative % weight loss
0	2015/07/06	62	62.00	0.00	0.00	0.00
1	2015/07/07	61.5	61.50	0.50	0.81	0.81
2	2015/07/08	60.5	60.50	1.00	1.61	2.42
3	2015/07/09	59.5	59.50	1.00	1.61	4.03
4	2015/07/10	58.5	58.50	1.00	1.61	5.65
5	2015/07/11	58	58.00	0.50	0.81	6.45
6	2015/07/12	57.5	57.50	0.50	0.81	7.26
7	2015/07/13	56.5	56.50	1.00	1.61	8.87
8	2015/07/14	56.5	56.50	0.00	0.00	8.87
9	2015/07/15	55.5	55.50	1.00	1.61	10.48
10	2015/07/16	55.5	55.50	0.00	0.00	10.48
11	2015/07/17	55	55.00	0.50	0.81	11.29
12	2015/07/18		54.75	0.25	0.40	11.69
13	2015/07/19	54.5	54.50	0.25	0.40	12.10
14	2015/07/20	53	53.00	1.50	2.42	14.52
15	2015/07/21	53	53.00	0.00	0.00	14.52
16	2015/07/22	52	52.00	1.00	1.61	16.13
17	2015/07/23		51.75	0.25	0.40	16.53
18	2015/07/24	51.5	51.50	0.25	0.40	16.94
19	2015/07/25	50.5	50.50	1.00	1.61	18.55
20	2015/07/26		49.75	0.75	1.21	19.76
21	2015/07/27	49	49.00	0.75	1.21	20.97
22	2015/07/28	49	49.00	0.00	0.00	20.97
23	2015/07/29	48	48.00	1.00	1.61	22.58
24	2015/07/30	47.5	47.50	0.50	0.81	23.39
25	2015/07/31	46.5	46.50	1.00	1.61	25.00
26	2015/08/01	45.5	45.50	1.00	1.61	26.61
27	2015/08/02		44.75	0.75	1.21	27.82
28	2015/08/03	44	44.00	0.75	1.21	29.03
29	2015/08/04		43.25	0.75	1.21	30.24
30	2015/08/05	42.5	42.50	0.75	1.21	31.45
31	2015/08/06	42	42.00	0.50	0.81	32.26
32	2015/08/07	41.5	41.50	0.50	0.81	33.06
33	2015/08/08	39.5	39.50	2.00	3.23	36.29
34	2015/08/09	39.5	39.50	0.00	0.00	36.29
35	2015/08/10		38.50	1.00	1.61	37.90
36	2015/08/11	37.5	37.50	1.00	1.61	39.52
37	2015/08/12	37	37.00	0.50	0.81	40.32
38	2015/08/13		37.00	0.00	0.00	40.32
39	2015/08/14	37	37.00	0.00	0.00	40.32
40	2015/08/15		36.67	0.33	0.54	40.86
41	2015/08/16		36.33	0.33	0.54	41.40
42	2015/08/17	36	36.00	0.33	0.54	41.94
43	2015/08/18		35.50	0.50	0.81	42.74
44	2015/08/19	35	35.00	0.50	0.81	43.55
45	2015/08/20		34.75	0.25	0.40	43.95
46	2015/08/21	34.5	34.50	0.25	0.40	44.35
47	2015/08/22	34	34.00	0.50	0.81	45.16
48	2015/08/23		33.50	0.50	0.81	45.97
49	2015/08/24	33	33.00	0.50	0.81	46.77
50	2015/08/25	33	33.00	0.00	0.00	46.77
51	2015/08/26	32.5	32.50	0.50	0.81	47.58
52	2015/08/27		32.00	0.50	0.81	48.39
53	2015/08/28	31.5	31.50	0.50	0.81	49.19
54	2015/08/29		31.00	0.50	0.81	50.00
55	2015/08/30	30.5	30.50	0.50	0.81	50.81
56	2015/08/31		30.50	0.00	0.00	50.81
57	2015/09/01	30.5	30.50	0.00	0.00	50.81
58	2015/09/02		30.25	0.25	0.40	51.21
59	2015/09/03	30	30.00	0.25	0.40	51.61
60	2015/09/04	29.5	29.50	0.50	0.81	52.42
61	2015/09/05	28.5	28.50	1.00	1.61	54.03
62	2015/09/06	27.5	27.50	1.00	1.61	55.65
63	2015/09/07	27.5	27.50	0.00	0.00	55.65
64	2015/09/08		27.25	0.25	0.40	56.05
65	2015/09/09	27	27.00	0.25	0.40	56.45
66	2015/09/10	26.5	26.50	0.50	0.81	57.26
67	2015/09/11		26.50	0.00	0.00	57.26
68	2015/09/12	26.5	26.50	0.00	0.00	57.26
69	2015/09/13		25.75	0.75	1.21	58.47
70	2015/09/14	25	25.00	0.75	1.21	59.68
71	2015/09/15	25	25.00	0.00	0.00	59.68
72	2015/09/16	25	25.00	0.00	0.00	59.68
73	2015/09/17	24	24.00	1.00	1.61	61.29
74	2015/09/18		23.50	0.50	0.81	62.10
75	2015/09/19		23.00	0.50	0.81	62.90
76	2015/09/20	22.5	22.50	0.50	0.81	63.71
77	2015/09/21	21	21.00	1.50	2.42	66.13
78	2015/09/22	20.5	20.50	0.50	0.81	66.94
79	2015/09/23	20.5	20.50	0.00	0.00	66.94
80	2015/09/24	20	20.00	0.50	0.81	67.74
81	2015/09/25	19.5	19.50	0.50	0.81	68.55
82	2015/09/26	19	19.00	0.50	0.81	69.35
83	2015/09/27		19.00	0.00	0.00	69.35
84	2015/09/28	19	19.00	0.00	0.00	69.35
85	2015/09/29	19	19.00	0.00	0.00	69.35
86	2015/09/30	19.5	19.50	-0.50	-0.81	68.55
87	2015/10/01	19.5	19.50	0.00	0.00	68.55
88	2015/10/02	19	19.00	0.50	0.81	69.35
89	2015/10/03		18.25	0.75	1.21	70.56
90	2015/10/04	17.5	17.50	0.75	1.21	71.77
91	2015/10/05	17.5	17.50	0.00	0.00	71.77
92	2015/10/06	16.5	16.50	1.00	1.61	73.39
93	2015/10/07	16	16.00	0.50	0.81	74.19
94	2015/10/08	14.5	14.50	1.50	2.42	76.61
95	2015/10/09	14.5	14.50	0.00	0.00	76.61
96	2015/10/10	13.5	13.50	1.00	1.61	78.23
97	2015/10/11		13.25	0.25	0.40	78.63
98	2015/10/12	13	13.00	0.25	0.40	79.03
99	2015/10/13	13	13.00	0.00	0.00	79.03
100	2015/10/14	11.5	11.50	1.50	2.42	81.45
101	2015/10/15	10.5	10.50	1.00	1.61	83.06
102	2015/10/16	10.5	10.50	0.00	0.00	83.06
103	2015/10/17	10	10.00	0.50	0.81	83.87
104	2015/10/18		10.00	0.00	0.00	83.87
105	2015/10/19		10.00	0.00	0.00	83.87
106	2015/10/20	10	10.00	0.00	0.00	83.87
107	2015/10/21		9.83	0.17	0.27	84.14
108	2015/10/22		9.67	0.17	0.27	84.41
109	2015/10/23	9.5	9.50	0.17	0.27	84.68
110	2015/10/24		9.50	0.00	0.00	84.68
111	2015/10/25		9.50	0.00	0.00	84.68
112	2015/10/26	9.5	9.50	0.00	0.00	84.68
113	2015/10/27		9.33	0.17	0.27	84.95
114	2015/10/28		9.17	0.17	0.27	85.22
115	2015/10/29	9	9.00	0.17	0.27	85.48
116	2015/10/30		9.08	-0.08	-0.13	85.35
117	2015/10/31		9.17	-0.08	-0.13	85.22
118	2015/11/01		9.25	-0.08	-0.13	85.08
119	2015/11/02		9.33	-0.08	-0.13	84.95
120	2015/11/03		9.42	-0.08	-0.13	84.81
121	2015/11/04	9.5	9.50	-0.08	-0.13	84.68
122	2015/11/05		9.33	0.17	0.27	84.95
123	2015/11/06		9.17	0.17	0.27	85.22
124	2015/11/07	9	9.00	0.17	0.27	85.48
125	2015/11/08		9.00	0.00	0.00	85.48
126	2015/11/09		9.00	0.00	0.00	85.48
127	2015/11/10	9	9.00	0.00	0.00	85.48
128	2015/11/11		9.00	0.00	0.00	85.48
129	2015/11/12		9.00	0.00	0.00	85.48
130	2015/11/13		9.00	0.00	0.00	85.48
131	2015/11/14		9.00	0.00	0.00	85.48
132	2015/11/15		9.00	0.00	0.00	85.48
133	2015/11/16	9	9.00	0.00	0.00	85.48
134	2015/11/17		8.83	0.17	0.27	85.75
135	2015/11/18		8.67	0.17	0.27	86.02
136	2015/11/19	8.5	8.50	0.17	0.27	86.29
137	2015/11/20		8.45	0.05	0.08	86.37
138	2015/11/21		8.40	0.05	0.08	86.45
139	2015/11/22		8.35	0.05	0.08	86.53
140	2015/11/23		8.30	0.05	0.08	86.61
141	2015/11/24		8.25	0.05	0.08	86.69
		END OF WEIGHT LOSS DATA COLLECTION				

CFDS/C-2

Day	Date	Pig Weight	LinInterp	Weight loss	% Weight loss	Cumulative % weight loss
0	2015/07/06	59	59.00	0.00	0.00	0.00
1	2015/07/07	59	59.00	0.00	0.00	0.00
2	2015/07/08	57	57.00	2.00	3.39	3.39
3	2015/07/09	57	57.00	0.00	0.00	3.39
4	2015/07/10	56.5	56.50	0.50	0.85	4.24
5	2015/07/11	56	56.00	0.50	0.85	5.08
6	2015/07/12	55.5	55.50	0.50	0.85	5.93
7	2015/07/13	55	55.00	0.50	0.85	6.78
8	2015/07/14	53.5	53.50	1.50	2.54	9.32
9	2015/07/15	52.5	52.50	1.00	1.69	11.02
10	2015/07/16	52	52.00	0.50	0.85	11.86
11	2015/07/17	51.5	51.50	0.50	0.85	12.71
12	2015/07/18		51.00	0.50	0.85	13.56
13	2015/07/19	50.5	50.50	0.50	0.85	14.41
14	2015/07/20	50	50.00	0.50	0.85	15.25
15	2015/07/21	49.5	49.50	0.50	0.85	16.10
16	2015/07/22	48.5	48.50	1.00	1.69	17.80
17	2015/07/23		48.50	0.00	0.00	17.80
18	2015/07/24	48.5	48.50	0.00	0.00	17.80
19	2015/07/25	48	48.00	0.50	0.85	18.64
20	2015/07/26		47.75	0.25	0.42	19.07
21	2015/07/27	47.5	47.50	0.25	0.42	19.49
22	2015/07/28	47	47.00	0.50	0.85	20.34
23	2015/07/29	46	46.00	1.00	1.69	22.03
24	2015/07/30	46	46.00	0.00	0.00	22.03
25	2015/07/31	45	45.00	1.00	1.69	23.73
26	2015/08/01	44	44.00	1.00	1.69	25.42
27	2015/08/02		43.25	0.75	1.27	26.69
28	2015/08/03	42.5	42.50	0.75	1.27	27.97
29	2015/08/04		41.50	1.00	1.69	29.66
30	2015/08/05	40.5	40.50	1.00	1.69	31.36
31	2015/08/06	40.5	40.50	0.00	0.00	31.36
32	2015/08/07	40.5	40.50	0.00	0.00	31.36
33	2015/08/08	40	40.00	0.50	0.85	32.20
34	2015/08/09	39.5	39.50	0.50	0.85	33.05
35	2015/08/10		38.75	0.75	1.27	34.32
36	2015/08/11	38	38.00	0.75	1.27	35.59
37	2015/08/12	37	37.00	1.00	1.69	37.29
38	2015/08/13		36.50	0.50	0.85	38.14
39	2015/08/14	36	36.00	0.50	0.85	38.98
40	2015/08/15		34.83	1.17	1.98	40.96
41	2015/08/16		33.67	1.17	1.98	42.94
42	2015/08/17	32.5	32.50	1.17	1.98	44.92
43	2015/08/18		31.75	0.75	1.27	46.19
44	2015/08/19	31	31.00	0.75	1.27	47.46
45	2015/08/20		30.25	0.75	1.27	48.73
46	2015/08/21	29.5	29.50	0.75	1.27	50.00
47	2015/08/22	29.5	29.50	0.00	0.00	50.00
48	2015/08/23		28.50	1.00	1.69	51.69
49	2015/08/24	27.5	27.50	1.00	1.69	53.39
50	2015/08/25	27.5	27.50	0.00	0.00	53.39
51	2015/08/26	27	27.00	0.50	0.85	54.24
52	2015/08/27		26.50	0.50	0.85	55.08
53	2015/08/28	26	26.00	0.50	0.85	55.93
54	2015/08/29		25.25	0.75	1.27	57.20
55	2015/08/30	24.5	24.50	0.75	1.27	58.47
56	2015/08/31		24.50	0.00	0.00	58.47
57	2015/09/01	24.5	24.50	0.00	0.00	58.47
58	2015/09/02		23.75	0.75	1.27	59.75
59	2015/09/03	23	23.00	0.75	1.27	61.02
60	2015/09/04	23	23.00	0.00	0.00	61.02
61	2015/09/05	22.5	22.50	0.50	0.85	61.86
62	2015/09/06	21.5	21.50	1.00	1.69	63.56
63	2015/09/07	21.5	21.50	0.00	0.00	63.56
64	2015/09/08		21.50	0.00	0.00	63.56
65	2015/09/09	21.5	21.50	0.00	0.00	63.56
66	2015/09/10	21.5	21.50	0.00	0.00	63.56
67	2015/09/11	21	21.00	0.50	0.85	64.41
68	2015/09/12	20.5	20.50	0.50	0.85	65.25
69	2015/09/13		19.75	0.75	1.27	66.53
70	2015/09/14	19	19.00	0.75	1.27	67.80
71	2015/09/15	19	19.00	0.00	0.00	67.80
72	2015/09/16	19	19.00	0.00	0.00	67.80
73	2015/09/17	18	18.00	1.00	1.69	69.49
74	2015/09/18		17.50	0.50	0.85	70.34
75	2015/09/19		17.00	0.50	0.85	71.19
76	2015/09/20	16.5	16.50	0.50	0.85	72.03
77	2015/09/21	16.5	16.50	0.00	0.00	72.03
78	2015/09/22	15.5	15.50	1.00	1.69	73.73
79	2015/09/23	15.5	15.50	0.00	0.00	73.73
80	2015/09/24	15.5	15.50	0.00	0.00	73.73
81	2015/09/25	14.5	14.50	1.00	1.69	75.42
82	2015/09/26	14.5	14.50	0.00	0.00	75.42
83	2015/09/27		14.50	0.00	0.00	75.42
84	2015/09/28	14.5	14.50	0.00	0.00	75.42
85	2015/09/29	15.5	15.50	-1.00	-1.69	73.73
86	2015/09/30	16.5	16.50	-1.00	-1.69	72.03
87	2015/10/01	16.5	16.50	0.00	0.00	72.03
88	2015/10/02	16	16.00	0.50	0.85	72.88
89	2015/10/03		15.50	0.50	0.85	73.73
90	2015/10/04	15	15.00	0.50	0.85	74.58
91	2015/10/05	14.5	14.50	0.50	0.85	75.42
92	2015/10/06	13.5	13.50	1.00	1.69	77.12
93	2015/10/07	14	14.00	-0.50	-0.85	76.27
94	2015/10/08	13	13.00	1.00	1.69	77.97
95	2015/10/09	12.5	12.50	0.50	0.85	78.81
96	2015/10/10	11.5	11.50	1.00	1.69	80.51
97	2015/10/11		11.00	0.50	0.85	81.36
98	2015/10/12	10.5	10.50	0.50	0.85	82.20
99	2015/10/13	9.5	9.50	1.00	1.69	83.90
100	2015/10/14	8	8.00	1.50	2.54	86.44
101	2015/10/15	7.5	7.50	0.50	0.85	87.29
102	2015/10/16	8	8.00	-0.50	-0.85	86.44
103	2015/10/17	7	7.00	1.00	1.69	88.14
104	2015/10/18		6.83	0.17	0.28	88.42
105	2015/10/19		6.67	0.17	0.28	88.70
106	2015/10/20	6.5	6.50	0.17	0.28	88.98
107	2015/10/21		6.33	0.17	0.28	89.27
108	2015/10/22		6.17	0.17	0.28	89.55
109	2015/10/23	6	6.00	0.17	0.28	89.83
110	2015/10/24		5.83	0.17	0.28	90.11
111	2015/10/25		5.67	0.17	0.28	90.40
112	2015/10/26	5.5	5.50	0.17	0.28	90.68
113	2015/10/27		5.50	0.00	0.00	90.68
114	2015/10/28		5.50	0.00	0.00	90.68
115	2015/10/29	5.5	5.50	0.00	0.00	90.68
116	2015/10/30		5.58	-0.08	-0.14	90.54
117	2015/10/31		5.67	-0.08	-0.14	90.40
118	2015/11/01		5.75	-0.08	-0.14	90.25
119	2015/11/02		5.83	-0.08	-0.14	90.11
120	2015/11/03		5.92	-0.08	-0.14	89.97
121	2015/11/04	6	6.00	-0.08	-0.14	89.83
122	2015/11/05		5.83	0.17	0.28	90.11
123	2015/11/06		5.67	0.17	0.28	90.40
124	2015/11/07	5.5	5.50	0.17	0.28	90.68
125	2015/11/08		5.50	0.00	0.00	90.68
126	2015/11/09		5.50	0.00	0.00	90.68
127	2015/11/10	5.5	5.50	0.00	0.00	90.68
128	2015/11/11		5.33	0.17	0.28	90.96
129	2015/11/12		5.17	0.17	0.28	91.24
130	2015/11/13		5.00	0.17	0.28	91.53
131	2015/11/14		4.83	0.17	0.28	91.81
132	2015/11/15		4.67	0.17	0.28	92.09
133	2015/11/16	4.5	4.50	0.17	0.28	92.37
134	2015/11/17		4.17	0.33	0.56	92.94
135	2015/11/18		3.83	0.33	0.56	93.50
136	2015/11/19	3.5	3.50	0.33	0.56	94.07
137	2015/11/20		3.41	0.09	0.15	94.22
138	2015/11/21		3.32	0.09	0.15	94.38
139	2015/11/22		3.23	0.09	0.15	94.53
140	2015/11/23		3.14	0.09	0.15	94.68
141	2015/11/24		3.05	0.09	0.15	94.84
		END OF WEIGHT LOSS DATA COLLECTION				

***Day** = cycle day; **Pig Weight** = original weight recorded; **LinInterp** = linearly interpolated weight; **Weight loss** calculated using "LinInterp"; **% Weight loss** is "Weight loss" as a percentage of "LinInterp"; **Cumulative % weight loss** is "% Weight loss" accumulated daily.*

APPENDIX A4.6 - Raw weight loss data (Cycle 4 | S-2016)

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Day	Date	Pig Weight	LinInterp	Weight loss	% Weight loss	Cumulative % weight loss
0	2016/01/13	55	55	0	0	0
1	2016/01/14	55	55	0	0	0
2	2016/01/15	55	55	0	0	0
3	2016/01/16	54.5	54.5	0.5	0.91	0.91
4	2016/01/17	42	42	12.5	22.73	23.64
5	2016/01/18	36	36	6	10.91	34.55
6	2016/01/19	33	33	3	5.45	40
7	2016/01/20	30	30	3	5.45	45.45
8	2016/01/21	28.5	28.5	1.5	2.73	48.18
9	2016/01/22	27	27	1.5	2.73	50.91
10	2016/01/23		26.5	0.5	0.91	51.82
11	2016/01/24	26	26	0.5	0.91	52.73
12	2016/01/25	25	25	1	1.82	54.55
13	2016/01/26	26	26	-1	-1.82	52.73
14	2016/01/27	25.5	25.5	0.5	0.91	53.64
15	2016/01/28	25	25	0.5	0.91	54.55
16	2016/01/29	25.5	25.5	-0.5	-0.91	53.64
17	2016/01/30	24.5	24.5	1	1.82	55.45
18	2016/01/31	23.5	23.5	1	1.82	57.27
19	2016/02/01	23	23	0.5	0.91	58.18
20	2016/02/02	22.5	22.5	0.5	0.91	59.09
21	2016/02/03	23	23	-0.5	-0.91	58.18
22	2016/02/04	21	21	2	3.64	61.82
23	2016/02/05	21	21	0	0	61.82
24	2016/02/06	21	21	0	0	61.82
25	2016/02/07	20.5	20.5	0.5	0.91	62.73
26	2016/02/08	19.5	19.5	1	1.82	64.55
27	2016/02/09	19.5	19.5	0	0	64.55
28	2016/02/10	18	18	1.5	2.73	67.27
29	2016/02/11	17.5	17.5	0.5	0.91	68.18
30	2016/02/12	18	18	-0.5	-0.91	67.27
31	2016/02/13	17	17	1	1.82	69.09
32	2016/02/14	16.5	16.5	0.5	0.91	70
33	2016/02/15	17	17	-0.5	-0.91	69.09
34	2016/02/16	16.5	16.5	0.5	0.91	70
35	2016/02/17	16	16	0.5	0.91	70.91
36	2016/02/18	15.5	15.5	0.5	0.91	71.82
37	2016/02/19		15.5	0	0	71.82
38	2016/02/20		15.5	0	0	71.82
39	2016/02/21	15.5	15.5	0	0	71.82
40	2016/02/22		14.83	0.67	1.21	73.03
41	2016/02/23		14.17	0.67	1.21	74.24
42	2016/02/24	13.5	13.5	0.67	1.21	75.45
43	2016/02/25		13.17	0.33	0.61	76.06
44	2016/02/26		12.83	0.33	0.61	76.67
45	2016/02/27	12.5	12.5	0.33	0.61	77.27
46	2016/02/28		12.5	0	0	77.27
47	2016/02/29		12.5	0	0	77.27
48	2016/03/01	12.5	12.5	0	0	77.27
49	2016/03/02		12	0.5	0.91	78.18
50	2016/03/03		11.5	0.5	0.91	79.09
51	2016/03/04	11	11	0.5	0.91	80
52	2016/03/05		10.67	0.33	0.61	80.61
53	2016/03/06		10.33	0.33	0.61	81.21
54	2016/03/07	10	10	0.33	0.61	81.82
55	2016/03/08	END OF WEIGHT LOSS DATA COLLECTION				
56	2016/03/09					
57	2016/03/10					
58	2016/03/11					
59	2016/03/12					
60	2016/03/13					
61	2016/03/14					
62	2016/03/15					
63	2016/03/16					
64	2016/03/17					
65	2016/03/18					
66	2016/03/19					
67	2016/03/20					
68	2016/03/21					
69	2016/03/22					
70	2016/03/23					
71	2016/03/24					
72	2016/03/25					
73	2016/03/26					
74	2016/03/27					
75	2016/03/28					
76	2016/03/29					

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Day	Date	Pig Weight	LinInterp	Weight loss	% Weight loss	Cumulative % weight loss
0	2016/01/13	64	64	0	0	0
1	2016/01/14	62	62	2	3.13	3.13
2	2016/01/15	61	61	1	1.56	4.69
3	2016/01/16	60	60	1	1.56	6.25
4	2016/01/17	43.5	43.5	16.5	25.78	32.03
5	2016/01/18	39	39	4.5	7.03	39.06
6	2016/01/19	36.5	36.5	2.5	3.91	42.97
7	2016/01/20	34.5	34.5	2	3.13	46.09
8	2016/01/21	34	34	0.5	0.78	46.88
9	2016/01/22	32.5	32.5	1.5	2.34	49.22
10	2016/01/23		31.75	0.75	1.17	50.39
11	2016/01/24	31	31	0.75	1.17	51.56
12	2016/01/25	31.5	31.5	-0.5	-0.78	50.78
13	2016/01/26	30.5	30.5	1	1.56	52.34
14	2016/01/27	30	30	0.5	0.78	53.13
15	2016/01/28	29.5	29.5	0.5	0.78	53.91
16	2016/01/29	29	29	0.5	0.78	54.69
17	2016/01/30	28.5	28.5	0.5	0.78	55.47
18	2016/01/31	27.5	27.5	1	1.56	57.03
19	2016/02/01	26.5	26.5	1	1.56	58.59
20	2016/02/02	26	26	0.5	0.78	59.38
21	2016/02/03	25.5	25.5	0.5	0.78	60.16
22	2016/02/04	24.5	24.5	1	1.56	61.72
23	2016/02/05	23.5	23.5	1	1.56	63.28
24	2016/02/06	22.5	22.5	1	1.56	64.84
25	2016/02/07	22	22	0.5	0.78	65.63
26	2016/02/08	20.5	20.5	1.5	2.34	67.97
27	2016/02/09	20.5	20.5	0	0	67.97
28	2016/02/10	19.5	19.5	1	1.56	69.53
29	2016/02/11	19	19	0.5	0.78	70.31
30	2016/02/12	17.5	17.5	1.5	2.34	72.66
31	2016/02/13	17.5	17.5	0	0	72.66
32	2016/02/14	17	17	0.5	0.78	73.44
33	2016/02/15	16	16	1	1.56	75
34	2016/02/16	15.5	15.5	0.5	0.78	75.78
35	2016/02/17	15	15	0.5	0.78	76.56
36	2016/02/18	14.5	14.5	0.5	0.78	77.34
37	2016/02/19		14.33	0.17	0.26	77.6
38	2016/02/20		14.17	0.17	0.26	77.86
39	2016/02/21	14	14	0.17	0.26	78.13
40	2016/02/22		13.5	0.5	0.78	78.91
41	2016/02/23		13	0.5	0.78	79.69
42	2016/02/24	12.5	12.5	0.5	0.78	80.47
43	2016/02/25		12.17	0.33	0.52	80.99
44	2016/02/26		11.83	0.33	0.52	81.51
45	2016/02/27	11.5	11.5	0.33	0.52	82.03
46	2016/02/28		11.17	0.33	0.52	82.55
47	2016/02/29		10.83	0.33	0.52	83.07
48	2016/03/01	10.5	10.5	0.33	0.52	83.59
49	2016/03/02		10	0.5	0.78	84.38
50	2016/03/03		9.5	0.5	0.78	85.16
51	2016/03/04	9	9	0.5	0.78	85.94
52	2016/03/05		8.83	0.17	0.26	86.2
53	2016/03/06		8.67	0.17	0.26	86.46
54	2016/03/07	8.5	8.5	0.17	0.26	86.72
55	2016/03/08	END OF WEIGHT LOSS DATA COLLECTION				
56	2016/03/09					
57	2016/03/10					
58	2016/03/11					
59	2016/03/12					
60	2016/03/13					
61	2016/03/14					
62	2016/03/15					
63	2016/03/16					
64	2016/03/17					
65	2016/03/18					
66	2016/03/19					
67	2016/03/20					
68	2016/03/21					
69	2016/03/22					
70	2016/03/23					
71	2016/03/24					
72	2016/03/25					
73	2016/03/26					
74	2016/03/27					
75	2016/03/28					
76	2016/03/29					

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Day	Date	Pig Weight	LinInterp	Weight loss	% Weight loss	Cumulative % weight loss
0	2016/01/13	61.5	61.5	0	0	0
1	2016/01/14	61.5	61.5	0	0	0
2	2016/01/15	61	61	0.5	0.81	0.81
3	2016/01/16	58.5	58.5	2.5	4.07	4.88
4	2016/01/17	51.5	51.5	7	11.38	16.26
5	2016/01/18	50.5	50.5	1	1.63	17.89
6	2016/01/19	47.5	47.5	3	4.88	22.76
7	2016/01/20	44.5	44.5	3	4.88	27.64
8	2016/01/21	41	41	3.5	5.69	33.33
9	2016/01/22	35.5	35.5	5.5	8.94	42.28
10	2016/01/23		33.25	2.25	3.66	45.93
11	2016/01/24	31	31	2.25	3.66	49.59
12	2016/01/25	30	30	1	1.63	51.22
13	2016/01/26	28.5	28.5	1.5	2.44	53.66
14	2016/01/27	27	27	1.5	2.44	56.1
15	2016/01/28	27.5	27.5	-0.5	-0.81	55.28
16	2016/01/29	27.5	27.5	0	0	55.28
17	2016/01/30	27	27	0.5	0.81	56.1
18	2016/01/31	26	26	1	1.63	57.72
19	2016/02/01	25	25	1	1.63	59.35
20	2016/02/02	25.5	25.5	-0.5	-0.81	58.54
21	2016/02/03	25.5	25.5	0	0	58.54
22	2016/02/04	24.5	24.5	1	1.63	60.16
23	2016/02/05	23.5	23.5	1	1.63	61.79
24	2016/02/06	23.5	23.5	0	0	61.79
25	2016/02/07	23	23	0.5	0.81	62.6
26	2016/02/08	23	23	0	0	62.6
27	2016/02/09	21	21	2	3.25	65.85
28	2016/02/10	20	20	1	1.63	67.48
29	2016/02/11	20	20	0	0	67.48
30	2016/02/12	19.5	19.5	0.5	0.81	68.29
31	2016/02/13	19.5	19.5	0	0	68.29
32	2016/02/14	18.5	18.5	1	1.63	69.92
33	2016/02/15	18	18	0.5	0.81	70.73
34	2016/02/16	17	17	1	1.63	72.36
35	2016/02/17	16.5	16.5	0.5	0.81	73.17
36	2016/02/18	16.5	16.5	0	0	73.17
37	2016/02/19		16.17	0.33	0.54	73.71
38	2016/02/20		15.83	0.33	0.54	74.25
39	2016/02/21	15.5	15.5	0.33	0.54	74.8
40	2016/02/22		15.33	0.17	0.27	75.07
41	2016/02/23		15.17	0.17	0.27	75.34
42	2016/02/24	15	15	0.17	0.27	75.61
43	2016/02/25		15	0	0	75.61
44	2016/02/26		15	0	0	75.61
45	2016/02/27	15	15	0	0	75.61
46	2016/02/28		14.67	0.33	0.54	76.15
47	2016/02/29		14.33	0.33	0.54	76.69
48	2016/03/01	14	14	0.33	0.54	77.24
49	2016/03/02		13.75	0.25	0.41	77.64
50	2016/03/03		13.5	0.25	0.41	78.05
51	2016/03/04		13.25	0.25	0.41	78.46
52	2016/03/05		13	0.25	0.41	78.86
53	2016/03/06		12.75	0.25	0.41	79.27
54	2016/03/07	12.5	12.5	0.25	0.41	79.67
55	2016/03/08	END OF WEIGHT LOSS DATA COLLECTION				
56	2016/03/09					
57	2016/03/10					
58	2016/03/11					
59	2016/03/12					
60	2016/03/13					
61	2016/03/14					
62	2016/03/15					
63	2016/03/16					
64	2016/03/17					
65	2016/03/18					
66	2016/03/19					
67	2016/03/20					
68	2016/03/21					
69	2016/03/22					
70	2016/03/23					
71	2016/03/24					
72	2016/03/25					
73	2016/03/26					
74	2016/03/27					
75	2016/03/28					
76	2016/03/29					

CFDS/C-2

Day	Date	Pig Weight	LinInterp	Weight loss	% Weight loss	Cumulative % weight loss
0	2016/01/13	59.5	59.5	0	0	0
1	2016/01/14	59	59	0.5	0.84	0.84
2	2016/01/15	58.5	58.5	0.5	0.84	1.68
3	2016/01/16	56.5	56.5	2	3.36	5.04
4	2016/01/17	51	51	5.5	9.24	14.29
5	2016/01/18	49	49	2	3.36	17.65
6	2016/01/19	42.5	42.5	6.5	10.92	28.57
7	2016/01/20	33.5	33.5	9	15.13	43.7
8	2016/01/21	29.5	29.5	4	6.72	50.42
9	2016/01/22	26.5	26.5	3	5.04	55.46
10	2016/01/23		25.75	0.75	1.26	56.72
11	2016/01/24	25	25	0.75	1.26	57.98
12	2016/01/25	23	23	2	3.36	61.34
13	2016/01/26	20	20	3	5.04	66.39
14	2016/01/27	19	19	1	1.68	68.07
15	2016/01/28	17.5	17.5	1.5	2.52	70.59
16	2016/01/29	17.5	17.5	0	0	70.59
17	2016/01/30	17	17	0.5	0.84	71.43
18	2016/01/31	16.5	16.5	0.5	0.84	72.27
19	2016/02/01	16	16	0.5	0.84	73.11
20	2016/02/02	15.5	15.5	0.5	0.84	73.95
21	2016/02/03	15	15	0.5	0.84	74.79
22	2016/02/04	14.5	14.5	0.5	0.84	75.63
23	2016/02/05	14	14	0.5	0.84	76.47
24	2016/02/06	13.5	13.5	0.5	0.84	77.31
25	2016/02/07	13.5	13.5	0	0	77.31
26	2016/02/08	13	13	0.5	0.84	78.15
27	2016/02/09	12.5	12.5	0.5	0.84	78.99
28	2016/02/10	12	12	0.5	0.84	79.83
29	2016/02/11	11.5	11.5	0.5	0.84	80.67
30	2016/02/12	11	11	0.5	0.84	81.51
31	2016/02/13	10.5	10.5	0.5	0.84	82.35
32	2016/02/14	9.5	9.5	1	1.68	84.03
33	2016/02/15	9.5	9.5	0	0	84.03
34	2016/02/16	9	9	0.5	0.84	84.87
35	2016/02/17	9	9	0	0	84.87
36	2016/02/18	8.5	8.5	0.5	0.84	85.71
37	2016/02/19		9.17	-0.67	-1.12	84.59
38	2016/02/20		9.83	-0.67	-1.12	83.47
39	2016/02/21	10.5	10.5	-0.67	-1.12	82.35
40	2016/02/22		10.33	0.17	0.28	82.63
41	2016/02/23		10.17	0.17	0.28	82.91
42	2016/02/24	10	10	0.17	0.28	83.19
43	2016/02/25		9.17	0.83	1.4	84.59
44	2016/02/26		8.33	0.83	1.4	85.99
45	2016/02/27	7.5	7.5	0.83	1.4	87.39
46	2016/02/28		7.17	0.33	0.56	87.96
47	2016/02/29		6.83	0.33	0.56	88.52
48	2016/03/01	6.5	6.5	0.33	0.56	89.08
49	2016/03/02	END OF WEIGHT LOSS DATA COLLECTION				
50	2016/03/03					
51	2016/03/04					
52	2016/03/05					
53	2016/03/06					
54	2016/03/07					
55	2016/03/08					
56	2016/03/09					
57	2016/03/10					
58	2016/03/11					
59	2016/03/12					
60	2016/03/13					
61	2016/03/14					
62	2016/03/15					
63	2016/03/16					
64	2016/03/17					
65	2016/03/18					
66	2016/03/19					
67	2016/03/20					
68	2016/03/21					
69	2016/03/22					
70	2016/03/23					
71	2016/03/24					
72	2016/03/25					
73	2016/03/26					
74	2016/03/27					
75	2016/03/28					
76	2016/03/29					

***Day** = cycle day; **Pig Weight** = original weight recorded; **LinInterp** = linearly interpolated weight; **Weight loss** calculated using "LinInterp"; **% Weight loss** is "Weight loss" as a percentage of "LinInterp"; **Cumulative % weight loss** is "% Weight loss" accumulated daily.*

Appendix A4.7a - Statistical outputs for combined decompositional measures (no factor comparison)

Descriptives

Variable	Measure		Statistic	Std. Error
Time to 25% biomass removal	Mean		24.63	5.031
	95% Confidence Interval for Mean	Lower Bound	13.90	
		Upper Bound	35.35	
	5% Trimmed Mean		23.81	
	Median		19.00	
	Variance		405.050	
	Std. Deviation		20.126	
	Minimum		4	
	Maximum		60	
	Range		56	
	Interquartile Range		38	
	Skewness		0.727	0.564
	Kurtosis		-0.957	1.091
Time to 50% biomass removal	Mean		39.06	7.118
	95% Confidence Interval for Mean	Lower Bound	23.89	
		Upper Bound	54.23	
	5% Trimmed Mean		37.96	
	Median		36.00	
	Variance		810.729	
	Std. Deviation		28.473	
	Minimum		8	
	Maximum		90	
	Range		82	
	Interquartile Range		51	
	Skewness		0.319	0.564
	Kurtosis		-1.472	1.091
Time to 75% biomass removal	Mean		61.88	7.172
	95% Confidence Interval for Mean	Lower Bound	46.59	
		Upper Bound	77.16	
	5% Trimmed Mean		61.92	
	Median		66.00	
	Variance		822.917	
	Std. Deviation		28.687	
	Minimum		22	
	Maximum		101	
	Range		79	
	Interquartile Range		55	
	Skewness		-0.082	0.564
	Kurtosis		-1.708	1.091
Time to onset of mummification (TBS defined)	Mean		57.69	9.796
	95% Confidence Interval for Mean	Lower Bound	36.81	
		Upper Bound	78.57	
	5% Trimmed Mean		56.93	
	Median		49.50	
	Variance		1535.429	
	Std. Deviation		39.185	
	Minimum		17	
	Maximum		112	
	Range		95	
	Interquartile Range		72	
	Skewness		0.174	0.564
	Kurtosis		-1.989	1.091

Descriptives

Variable	Measure		Statistic	Std. Error
Time to complete mummification (TBS defined)	Mean		69.50	9.898
	95% Confidence Interval for Mean	Lower Bound	48.40	
		Upper Bound	90.60	
	5% Trimmed Mean		69.39	
	Median		72.00	
	Variance		1567.467	
	Std. Deviation		39.591	
	Minimum		17	
	Maximum		124	
	Range		107	
	Interquartile Range		84	
	Skewness		-0.027	0.564
	Kurtosis		-1.813	1.091
Time to onset of mummification	Mean		38.00	6.651
	95% Confidence Interval for Mean	Lower Bound	23.82	
		Upper Bound	52.18	
	5% Trimmed Mean		37.61	
	Median		34.50	
	Variance		707.733	
	Std. Deviation		26.603	
	Minimum		8	
	Maximum		75	
	Range		67	
	Interquartile Range		55	
	Skewness		0.104	0.564
	Kurtosis		-1.996	1.091
Time to TBS=3	Mean		0.00	0.000
	95% Confidence Interval for Mean	Lower Bound	0.00	
		Upper Bound	0.00	
	5% Trimmed Mean		0.00	
	Median		0.00	
	Variance		0.000	
	Std. Deviation		0.000	
	Minimum		0	
	Maximum		0	
	Range		0	
	Interquartile Range		0	
	Skewness			
	Kurtosis			
Time to TBS=6	Mean		3.75	0.814
	95% Confidence Interval for Mean	Lower Bound	2.02	
		Upper Bound	5.48	
	5% Trimmed Mean		3.56	
	Median		2.00	
	Variance		10.600	
	Std. Deviation		3.256	
	Minimum		1	
	Maximum		10	
	Range		9	
	Interquartile Range		5	
	Skewness		1.195	0.564
	Kurtosis		-0.213	1.091

Descriptives

Variable	Measure		Statistic	Std. Error
Time to TBS=19	Mean		38.31	6.248
	95% Confidence Interval for Mean	Lower Bound	24.99	
		Upper Bound	51.63	
	5% Trimmed Mean		37.90	
	Median		37.00	
	Variance		624.629	
	Std. Deviation		24.993	
	Minimum		7	
	Maximum		77	
	Range		70	
	Interquartile Range		41	
	Skewness		0.116	0.564
	Kurtosis		-1.818	1.091
Time to TBS=27	Mean		94.64	13.765
	95% Confidence Interval for Mean	Lower Bound	63.97	
		Upper Bound	125.31	
	5% Trimmed Mean		94.10	
	Median		102.00	
	Variance		2084.255	
	Std. Deviation		45.654	
	Minimum		39	
	Maximum		160	
	Range		121	
	Interquartile Range		87	
	Skewness		0.035	0.661
	Kurtosis		-1.783	1.279
TBS at end of trial	Mean		28.00	0.532
	95% Confidence Interval for Mean	Lower Bound	26.87	
		Upper Bound	29.13	
	5% Trimmed Mean		28.00	
	Median		28.00	
	Variance		4.533	
	Std. Deviation		2.129	
	Minimum		25	
	Maximum		31	
	Range		6	
	Interquartile Range		4	
	Skewness		0.142	0.564
	Kurtosis		-1.343	1.091
ADD at TBS=3	Mean		0.00	0.000
	95% Confidence Interval for Mean	Lower Bound	0.00	
		Upper Bound	0.00	
	5% Trimmed Mean		0.00	
	Median		0.00	
	Variance		0.000	
	Std. Deviation		0.000	
	Minimum		0	
	Maximum		0	
	Range		0	
	Interquartile Range		0	
	Skewness			
	Kurtosis			

Descriptives

Variable	Measure		Statistic	Std. Error
ADD at TBS=6	Mean		48.49	7.547
	95% Confidence Interval for Mean	Lower Bound	32.40	
		Upper Bound	64.58	
	5% Trimmed Mean		47.43	
	Median		46.55	
	Variance		911.312	
	Std. Deviation		30.188	
	Minimum		12	
	Maximum		104	
	Range		92	
	Interquartile Range		51	
	Skewness		0.751	0.564
	Kurtosis		-0.468	1.091
ADD at TBS=19	Mean		579.77	69.578
	95% Confidence Interval for Mean	Lower Bound	431.47	
		Upper Bound	728.07	
	5% Trimmed Mean		577.71	
	Median		608.54	
	Variance		77457.016	
	Std. Deviation		278.311	
	Minimum		177	
	Maximum		1020	
	Range		843	
	Interquartile Range		433	
	Skewness		0.127	0.564
	Kurtosis		-1.323	1.091
ADD at TBS=27	Mean		1608.80	189.287
	95% Confidence Interval for Mean	Lower Bound	1187.04	
		Upper Bound	2030.56	
	5% Trimmed Mean		1602.93	
	Median		1513.70	
	Variance		394126.511	
	Std. Deviation		627.795	
	Minimum		774	
	Maximum		2549	
	Range		1775	
	Interquartile Range		1221	
	Skewness		0.313	0.661
	Kurtosis		-1.294	1.279
ADD at end of trial	Mean		2007.60	104.369
	95% Confidence Interval for Mean	Lower Bound	1785.15	
		Upper Bound	2230.06	
	5% Trimmed Mean		1994.45	
	Median		1901.06	
	Variance		174285.617	
	Std. Deviation		417.475	
	Minimum		1602	
	Maximum		2650	
	Range		1048	
	Interquartile Range		848	
	Skewness		0.562	0.564
	Kurtosis		-1.349	1.091

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Time to 25% biomass removal	0.218	16	0.040	0.854	16	0.015
Time to 50% biomass removal	0.218	16	0.040	0.874	16	0.032
Time to 75% biomass removal	0.193	16	0.112	0.893	16	0.063
Time to onset of mummification (TBS defined)	0.291	16	0.001	0.791	16	0.002
Time to complete mummification (TBS defined)	0.197	16	0.099	0.874	16	0.032
Time to onset of mummification	0.251	16	0.008	0.823	16	0.006
Time to TBS=3		16			16	
Time to TBS=6	0.330	16	0.000	0.738	16	0.000
Time to TBS=19	0.256	16	0.006	0.849	16	0.013
Time to TBS=27	0.167	11	.200*	0.899	11	0.178
TBS at end of trial	0.139	16	.200*	0.914	16	0.134
ADD at TBS=3		16			16	
ADD at TBS=6	0.209	16	0.061	0.886	16	0.048
ADD at TBS=19	0.186	16	0.141	0.923	16	0.190
ADD at TBS=27	0.158	11	.200*	0.931	11	0.419
ADD at end of trial	0.277	16	0.002	0.809	16	0.004

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Appendix A4.7b - Statistical outputs for sex comparision of decompositional measures

Descriptives

				Statistic	Std. Error
Time to 25% biomass removal	Male	Mean		23.63	6.422
		95% Confidence Interval for Mean	Lower Bound	8.44	
			Upper Bound	38.81	
		5% Trimmed Mean		23.14	
		Median		19.00	
		Variance		329.982	
		Std. Deviation		18.165	
		Minimum		5	
		Maximum		51	
		Range		46	
		Interquartile Range		36	
		Skewness		0.720	0.752
		Kurtosis		-1.086	1.481
	Female	Mean		25.63	8.183
		95% Confidence Interval for Mean	Lower Bound	6.28	
			Upper Bound	44.97	
		5% Trimmed Mean		24.92	
		Median		18.50	
		Variance		535.696	
		Std. Deviation		23.145	
		Minimum		4	
		Maximum		60	
		Range		56	
		Interquartile Range		46	
		Skewness		0.780	0.752
		Kurtosis		-1.111	1.481
Time to 50% biomass removal	Male	Mean		38.88	8.949
		95% Confidence Interval for Mean	Lower Bound	17.71	
			Upper Bound	60.04	
		5% Trimmed Mean		38.81	
		Median		40.50	
		Variance		640.696	
		Std. Deviation		25.312	
		Minimum		9	
		Maximum		70	
		Range		61	
		Interquartile Range		49	
		Skewness		-0.017	0.752
		Kurtosis		-2.300	1.481
	Female	Mean		39.25	11.707
		95% Confidence Interval for Mean	Lower Bound	11.57	
			Upper Bound	66.93	
		5% Trimmed Mean		38.17	
		Median		30.50	
		Variance		1096.500	
		Std. Deviation		33.113	
		Minimum		8	
		Maximum		90	
		Range		82	
		Interquartile Range		63	
		Skewness		0.506	0.752
		Kurtosis		-1.602	1.481
Time to 75% biomass removal	Male	Mean		63.25	8.819
		95% Confidence Interval for Mean	Lower Bound	42.40	
			Upper Bound	84.10	
		5% Trimmed Mean		63.56	
		Median		66.00	
		Variance		622.214	
		Std. Deviation		24.944	
		Minimum		27	
		Maximum		94	
		Range		67	
		Interquartile Range		46	
		Skewness		-0.123	0.752
		Kurtosis		-1.563	1.481
	Female	Mean		60.50	11.921
		95% Confidence Interval for Mean	Lower Bound	32.31	
			Upper Bound	88.69	
		5% Trimmed Mean		60.39	
		Median		61.50	
		Variance		1136.857	
		Std. Deviation		33.717	
		Minimum		22	
		Maximum		101	
		Range		79	
		Interquartile Range		68	
		Skewness		-0.003	0.752
		Kurtosis		-2.316	1.481
Time to onset of mummification (TBS defined)	Male	Mean		58.13	14.150
		95% Confidence Interval for Mean	Lower Bound	24.66	
			Upper Bound	91.59	
		5% Trimmed Mean		57.31	
		Median		54.50	
		Variance		1601.839	
		Std. Deviation		40.023	
		Minimum		19	
		Maximum		112	
		Range		93	
		Interquartile Range		72	
		Skewness		0.149	0.752
		Kurtosis		-2.378	1.481
	Female	Mean		57.25	14.526
		95% Confidence Interval for Mean	Lower Bound	22.90	
			Upper Bound	91.60	
		5% Trimmed Mean		56.44	
		Median		48.00	
		Variance		1687.929	
		Std. Deviation		41.084	
		Minimum		17	
		Maximum		112	
		Range		95	
		Interquartile Range		79	
		Skewness		0.242	0.752
		Kurtosis		-2.269	1.481

Descriptives

				Statistic	Std. Error
Time to complete mummification (TBS defined)	Male	Mean		71.13	12.983
		95% Confidence Interval for Mean	Lower Bound	40.43	
			Upper Bound	101.82	
		5% Trimmed Mean		71.14	
		Median		81.00	
		Variance		1348.411	
		Std. Deviation		36.721	
		Minimum		27	
		Maximum		115	
		Range		88	
		Interquartile Range		73	
		Skewness		-0.212	0.752
		Kurtosis		-2.136	1.481
	Female	Mean		67.88	15.829
		95% Confidence Interval for Mean	Lower Bound	30.45	
			Upper Bound	105.30	
		5% Trimmed Mean		67.58	
		Median		64.00	
		Variance		2004.411	
		Std. Deviation		44.771	
		Minimum		17	
		Maximum		124	
		Range		107	
		Interquartile Range		90	
		Skewness		0.118	0.752
		Kurtosis		-2.132	1.481
Time to onset of mummification	Male	Mean		38.25	9.265
		95% Confidence Interval for Mean	Lower Bound	16.34	
			Upper Bound	60.16	
		5% Trimmed Mean		38.22	
		Median		34.50	
		Variance		686.786	
		Std. Deviation		26.207	
		Minimum		9	
		Maximum		68	
		Range		59	
		Interquartile Range		52	
		Skewness		0.111	0.752
		Kurtosis		-2.428	1.481
	Female	Mean		37.75	10.184
		95% Confidence Interval for Mean	Lower Bound	13.67	
			Upper Bound	61.83	
		5% Trimmed Mean		37.33	
		Median		35.50	
		Variance		829.643	
		Std. Deviation		28.804	
		Minimum		8	
		Maximum		75	
		Range		67	
		Interquartile Range		57	
		Skewness		0.127	0.752
		Kurtosis		-2.304	1.481
Time to TBS=3	Male	Mean		0.00	0.000
		95% Confidence Interval for Mean	Lower Bound	0.00	
			Upper Bound	0.00	
		5% Trimmed Mean		0.00	
		Median		0.00	
		Variance		0.000	
		Std. Deviation		0.000	
		Minimum		0	
		Maximum		0	
		Range		0	
		Interquartile Range		0	
		Skewness			
		Kurtosis			
	Female	Mean		0.00	0.000
		95% Confidence Interval for Mean	Lower Bound	0.00	
			Upper Bound	0.00	
		5% Trimmed Mean		0.00	
		Median		0.00	
		Variance		0.000	
		Std. Deviation		0.000	
		Minimum		0	
		Maximum		0	
		Range		0	
		Interquartile Range		0	
		Skewness			
		Kurtosis			
Time to TBS=6	Male	Mean		4.13	1.109
		95% Confidence Interval for Mean	Lower Bound	1.50	
			Upper Bound	6.75	
		5% Trimmed Mean		3.92	
		Median		2.50	
		Variance		9.839	
		Std. Deviation		3.137	
		Minimum		2	
		Maximum		10	
		Range		8	
		Interquartile Range		5	
		Skewness		1.365	0.752
		Kurtosis		0.412	1.481
	Female	Mean		3.38	1.253
		95% Confidence Interval for Mean	Lower Bound	0.41	
			Upper Bound	6.34	
		5% Trimmed Mean		3.14	
		Median		2.00	
		Variance		12.554	
		Std. Deviation		3.543	
		Minimum		1	
		Maximum		10	
		Range		9	
		Interquartile Range		6	
		Skewness		1.463	0.752
		Kurtosis		0.517	1.481

Descriptives

				Statistic	Std. Error
Time to TBS=19	Male	Mean		35.88	8.591
		95% Confidence Interval for Mean	Lower Bound	15.56	
			Upper Bound	56.19	
		5% Trimmed Mean		36.14	
		Median		38.00	
		Variance		590.411	
		Std. Deviation		24.298	
		Minimum		7	
		Maximum		60	
		Range		53	
		Interquartile Range		47	
		Skewness		-0.106	0.752
		Kurtosis		-2.543	1.481
	Female	Mean		40.75	9.582
		95% Confidence Interval for Mean	Lower Bound	18.09	
			Upper Bound	63.41	
		5% Trimmed Mean		40.39	
		Median		37.00	
		Variance		734.500	
		Std. Deviation		27.102	
		Minimum		11	
		Maximum		77	
		Range		66	
		Interquartile Range		52	
		Skewness		0.232	0.752
		Kurtosis		-2.127	1.481
Time to TBS=27	Male	Mean		93.80	18.410
		95% Confidence Interval for Mean	Lower Bound	42.68	
			Upper Bound	144.92	
		5% Trimmed Mean		93.94	
		Median		102.00	
		Variance		1694.700	
		Std. Deviation		41.167	
		Minimum		39	
		Maximum		146	
		Range		107	
		Interquartile Range		76	
		Skewness		-0.179	0.913
		Kurtosis		-0.618	2.000
	Female	Mean		95.33	21.647
		95% Confidence Interval for Mean	Lower Bound	39.69	
			Upper Bound	150.98	
		5% Trimmed Mean		94.87	
		Median		95.00	
		Variance		2811.467	
		Std. Deviation		53.023	
		Minimum		39	
		Maximum		160	
		Range		121	
		Interquartile Range		96	
		Skewness		0.091	0.845
		Kurtosis		-2.776	1.741
TBS at end of trial	Male	Mean		28.00	0.802
		95% Confidence Interval for Mean	Lower Bound	26.10	
			Upper Bound	29.90	
		5% Trimmed Mean		28.00	
		Median		28.00	
		Variance		5.143	
		Std. Deviation		2.268	
		Minimum		25	
		Maximum		31	
		Range		6	
		Interquartile Range		4	
		Skewness		0.000	0.752
		Kurtosis		-1.944	1.481
	Female	Mean		28.00	0.756
		95% Confidence Interval for Mean	Lower Bound	26.21	
			Upper Bound	29.79	
		5% Trimmed Mean		28.00	
		Median		28.00	
		Variance		4.571	
		Std. Deviation		2.138	
		Minimum		25	
		Maximum		31	
		Range		6	
		Interquartile Range		4	
		Skewness		0.351	0.752
		Kurtosis		-0.634	1.481
ADD at TBS=3	Male	Mean		0.00	0.000
		95% Confidence Interval for Mean	Lower Bound	0.00	
			Upper Bound	0.00	
		5% Trimmed Mean		0.00	
		Median		0.00	
		Variance		0.000	
		Std. Deviation		0.000	
		Minimum		0	
		Maximum		0	
		Range		0	
		Interquartile Range		0	
		Skewness			
		Kurtosis			
	Female	Mean		0.00	0.000
		95% Confidence Interval for Mean	Lower Bound	0.00	
			Upper Bound	0.00	
		5% Trimmed Mean		0.00	
		Median		0.00	
		Variance		0.000	
		Std. Deviation		0.000	
		Minimum		0	
		Maximum		0	
		Range		0	
		Interquartile Range		0	
		Skewness			
		Kurtosis			

Descriptives

				Statistic	Std. Error
ADD at TBS=6	Male	Mean		52.90	9.812
		95% Confidence Interval for Mean	Lower Bound	29.70	
			Upper Bound	76.10	
		5% Trimmed Mean		51.63	
		Median		46.72	
		Variance		770.230	
		Std. Deviation		27.753	
		Minimum		24	
		Maximum		104	
		Range		80	
		Interquartile Range		47	
		Skewness		1.001	0.752
		Kurtosis		0.363	1.481
	Female	Mean		44.08	11.928
		95% Confidence Interval for Mean	Lower Bound	15.88	
			Upper Bound	72.29	
		5% Trimmed Mean		42.53	
		Median		35.45	
		Variance		1138.193	
		Std. Deviation		33.737	
		Minimum		12	
		Maximum		104	
		Range		92	
		Interquartile Range		59	
		Skewness		0.957	0.752
		Kurtosis		-0.199	1.481
ADD at TBS=19	Male	Mean		519.53	84.283
		95% Confidence Interval for Mean	Lower Bound	320.23	
			Upper Bound	718.83	
		5% Trimmed Mean		526.32	
		Median		566.24	
		Variance		56828.494	
		Std. Deviation		238.387	
		Minimum		177	
		Maximum		740	
		Range		564	
		Interquartile Range		456	
		Skewness		-0.416	0.752
		Kurtosis		-1.845	1.481
	Female	Mean		640.01	112.281
		95% Confidence Interval for Mean	Lower Bound	374.51	
			Upper Bound	905.51	
		5% Trimmed Mean		638.92	
		Median		621.27	
		Variance		100856.295	
		Std. Deviation		317.579	
		Minimum		280	
		Maximum		1020	
		Range		740	
		Interquartile Range		668	
		Skewness		0.058	0.752
		Kurtosis		-2.164	1.481
ADD at TBS=27	Male	Mean		1491.81	234.101
		95% Confidence Interval for Mean	Lower Bound	841.84	
			Upper Bound	2141.78	
		5% Trimmed Mean		1490.24	
		Median		1513.70	
		Variance		274016.753	
		Std. Deviation		523.466	
		Minimum		774	
		Maximum		2238	
		Range		1463	
		Interquartile Range		840	
		Skewness		0.126	0.913
		Kurtosis		1.567	2.000
	Female	Mean		1706.30	301.094
		95% Confidence Interval for Mean	Lower Bound	932.31	
			Upper Bound	2480.28	
		5% Trimmed Mean		1703.99	
		Median		1638.94	
		Variance		543945.304	
		Std. Deviation		737.526	
		Minimum		905	
		Maximum		2549	
		Range		1644	
		Interquartile Range		1516	
		Skewness		0.135	0.845
		Kurtosis		-2.553	1.741
ADD at end of trial	Male	Mean		2007.60	152.780
		95% Confidence Interval for Mean	Lower Bound	1646.33	
			Upper Bound	2368.87	
		5% Trimmed Mean		1994.45	
		Median		1901.06	
		Variance		186734.590	
		Std. Deviation		432.128	
		Minimum		1602	
		Maximum		2650	
		Range		1048	
		Interquartile Range		848	
		Skewness		0.634	0.752
		Kurtosis		-1.363	1.481
	Female	Mean		2007.60	152.780
		95% Confidence Interval for Mean	Lower Bound	1646.33	
			Upper Bound	2368.87	
		5% Trimmed Mean		1994.45	
		Median		1901.06	
		Variance		186734.590	
		Std. Deviation		432.128	
		Minimum		1602	
		Maximum		2650	
		Range		1048	
		Interquartile Range		848	
		Skewness		0.634	0.752
		Kurtosis		-1.363	1.481

Tests of Normality

		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Time to 25% biomass removal	Male	0.221	8	.200*	0.868	8	0.143
	Female	0.236	8	.200*	0.832	8	0.063
Time to 50% biomass removal	Male	0.238	8	.200*	0.862	8	0.125
	Female	0.268	8	0.094	0.857	8	0.112
Time to 75% biomass removal	Male	0.181	8	.200*	0.926	8	0.478
	Female	0.228	8	.200*	0.853	8	0.101
Time to onset of mummification (TBS defined)	Male	0.289	8	0.048	0.802	8	0.030
	Female	0.298	8	0.035	0.818	8	0.045
Time to complete mummification (TBS defined)	Male	0.242	8	0.185	0.856	8	0.110
	Female	0.218	8	.200*	0.864	8	0.131
Time to onset of mummification	Male	0.257	8	0.129	0.817	8	0.044
	Female	0.231	8	.200*	0.841	8	0.077
Time to TBS=3	Male		8			8	
	Female		8			8	
Time to TBS=6	Male	0.266	8	0.101	0.741	8	0.007
	Female	0.401	8	0.000	0.699	8	0.002
Time to TBS=19	Male	0.308	8	0.025	0.774	8	0.015
	Female	0.267	8	0.097	0.855	8	0.108
Time to TBS=27	Male	0.179	5	.200*	0.986	5	0.962
	Female	0.265	6	.200*	0.844	6	0.141
TBS at end of trial	Male	0.186	8	.200*	0.905	8	0.322
	Female	0.250	8	0.150	0.907	8	0.333
ADD at TBS=3	Male		8			8	
	Female		8			8	
ADD at TBS=6	Male	0.233	8	.200*	0.890	8	0.234
	Female	0.221	8	.200*	0.874	8	0.165
ADD at TBS=19	Male	0.294	8	0.041	0.821	8	0.048
	Female	0.193	8	.200*	0.866	8	0.137
ADD at TBS=27	Male	0.237	5	.200*	0.958	5	0.795
	Female	0.222	6	.200*	0.867	6	0.213
ADD at end of trial	Male	0.270	8	0.090	0.837	8	0.070
	Female	0.270	8	0.090	0.837	8	0.070

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

p = 0.05

Test Statistics[a,b]

	Kruskal-Wallis H	df	Asymp. Sig.
Time to 25% biomass removal	0.000	1	1.000
Time to 50% biomass removal	0.100	1	0.752
Time to 75% biomass removal	0.011	1	0.916
Time to onset of mummification (TBS defined)	0.025	1	0.875
Time to complete mummification (TBS defined)	0.099	1	0.753
Time to onset of mummification	0.100	1	0.752
Time to TBS=3	0.000	1	1.000
Time to TBS=6	1.748	1	0.186
Time to TBS=19	0.178	1	0.673
Time to TBS=27	0.008	1	0.927
TBS at end of trial	0.011	1	0.915
ADD at TBS=3	0.000	1	1.000
ADD at TBS=6	0.712	1	0.399
ADD at TBS=19	0.997	1	0.318
ADD at TBS=27	0.133	1	0.715
ADD at end of trial	0.000	1	1.000

a. Kruskal Wallis Test

b. Grouping Variable: Sex

p = 0.05

Appendix A4.7c - Statistical outputs for habitat comparision of decompositional measures

Descriptives

Variable	Habitat	Measure		Statistic	Std. Error
Time to 25% biomass removal	CFDS/O	Mean		30.75	9.190
		95% Confidence Interval for Mean	Lower Bound	9.02	
			Upper Bound	52.48	
		5% Trimmed Mean		30.61	
		Median		30.00	
		Variance		675.643	
		Std. Deviation		25.993	
		Minimum		4	
		Maximum		60	
		Range		56	
		Interquartile Range		52	
		Skewness		0.050	0.752
		Kurtosis		-2.594	1.481
	CFDS/C	Mean		18.50	3.650
		95% Confidence Interval for Mean	Lower Bound	9.87	
			Upper Bound	27.13	
		5% Trimmed Mean		18.44	
		Median		19.00	
		Variance		106.571	
		Std. Deviation		10.323	
		Minimum		6	
		Maximum		32	
		Range		26	
		Interquartile Range		20	
		Skewness		-0.008	0.752
		Kurtosis		-2.114	1.481
Time to 50% biomass removal	CFDS/O	Mean		44.50	12.058
		95% Confidence Interval for Mean	Lower Bound	15.99	
			Upper Bound	73.01	
		5% Trimmed Mean		43.94	
		Median		45.00	
		Variance		1163.143	
		Std. Deviation		34.105	
		Minimum		9	
		Maximum		90	
		Range		81	
		Interquartile Range		66	
		Skewness		0.092	0.752
		Kurtosis		-2.233	1.481
	CFDS/C	Mean		33.63	7.957
		95% Confidence Interval for Mean	Lower Bound	14.81	
			Upper Bound	52.44	
		5% Trimmed Mean		33.69	
		Median		31.50	
		Variance		506.554	
		Std. Deviation		22.507	
		Minimum		8	
		Maximum		58	
		Range		50	
		Interquartile Range		45	
		Skewness		0.044	0.752
		Kurtosis		-2.515	1.481
Time to 75% biomass removal	CFDS/O	Mean		65.13	10.783
		95% Confidence Interval for Mean	Lower Bound	39.63	
			Upper Bound	90.62	
		5% Trimmed Mean		65.47	
		Median		67.00	
		Variance		930.125	
		Std. Deviation		30.498	
		Minimum		23	
		Maximum		101	
		Range		78	
		Interquartile Range		60	
		Skewness		-0.162	0.752
		Kurtosis		-1.884	1.481
	CFDS/C	Mean		58.63	10.057
		95% Confidence Interval for Mean	Lower Bound	34.84	
			Upper Bound	82.41	
		5% Trimmed Mean		58.69	
		Median		58.50	
		Variance		809.125	
		Std. Deviation		28.445	
		Minimum		22	
		Maximum		94	
		Range		72	
		Interquartile Range		54	
		Skewness		-0.079	0.752
		Kurtosis		-2.071	1.481
Time to onset of mummification (TBS defined)	CFDS/O	Mean		56.75	14.381
		95% Confidence Interval for Mean	Lower Bound	22.74	
			Upper Bound	90.76	
		5% Trimmed Mean		55.89	
		Median		52.00	
		Variance		1654.500	
		Std. Deviation		40.676	
		Minimum		17	
		Maximum		112	
		Range		95	
		Interquartile Range		71	
		Skewness		0.158	0.752
		Kurtosis		-2.372	1.481
	CFDS/C	Mean		58.63	14.290
		95% Confidence Interval for Mean	Lower Bound	24.83	
			Upper Bound	92.42	
		5% Trimmed Mean		57.81	
		Median		49.50	
		Variance		1633.696	
		Std. Deviation		40.419	
		Minimum		20	
		Maximum		112	
		Range		92	
		Interquartile Range		79	
		Skewness		0.237	0.752
		Kurtosis		-2.294	1.481
Time to complete mummification (TBS defined)	CFDS/O	Mean		70.88	14.942
		95% Confidence Interval for Mean	Lower Bound	35.54	
			Upper Bound	106.21	
		5% Trimmed Mean		70.92	
		Median		81.00	
		Variance		1786.125	
		Std. Deviation		42.263	
		Minimum		17	
		Maximum		124	
		Range		107	
		Interquartile Range		83	
		Skewness		-0.168	0.752
		Kurtosis		-1.945	1.481
	CFDS/C	Mean		68.13	14.002
		95% Confidence Interval for Mean	Lower Bound	35.02	
			Upper Bound	101.23	
		5% Trimmed Mean		68.03	
		Median		64.00	
		Variance		1568.411	
		Std. Deviation		39.603	
		Minimum		23	
		Maximum		115	
		Range		92	
		Interquartile Range		83	
		Skewness		0.118	0.752
		Kurtosis		-2.173	1.481
Time to onset of mummification	CFDS/O	Mean		34.63	9.436
		95% Confidence Interval for Mean	Lower Bound	12.31	
			Upper Bound	56.94	
		5% Trimmed Mean		34.25	
		Median		31.50	
		Variance		712.268	
		Std. Deviation		26.688	
		Minimum		8	
		Maximum		68	
		Range		60	
		Interquartile Range		54	
		Skewness		0.209	0.752
		Kurtosis		-2.278	1.481
	CFDS/C	Mean		41.38	9.863
		95% Confidence Interval for Mean	Lower Bound	18.05	
			Upper Bound	64.70	
		5% Trimmed Mean		41.36	
		Median		41.00	
		Variance		778.268	
		Std. Deviation		27.897	
		Minimum		8	
		Maximum		75	
		Range		67	
		Interquartile Range		50	
		Skewness		0.001	0.752
		Kurtosis		-2.469	1.481
Time to TBS=3	CFDS/O	Mean		0.00	0.000
		95% Confidence Interval for Mean	Lower Bound	0.00	
			Upper Bound	0.00	
		5% Trimmed Mean		0.00	
		Median		0.00	
		Variance		0.000	
		Std. Deviation		0.000	
		Minimum		0	
		Maximum		0	
		Range		0	
		Interquartile Range		0	
		Skewness			
		Kurtosis			
	CFDS/C	Mean		0.00	0.000
		95% Confidence Interval for Mean	Lower Bound	0.00	
			Upper Bound	0.00	
		5% Trimmed Mean		0.00	
		Median		0.00	
		Variance		0.000	
		Std. Deviation		0.000	
		Minimum		0	
		Maximum		0	
		Range		0	
		Interquartile Range		0	
		Skewness			
		Kurtosis			
Time to TBS=6	CFDS/O	Mean		3.38	1.034
		95% Confidence Interval for Mean	Lower Bound	0.93	
			Upper Bound	5.82	
		5% Trimmed Mean		3.25	
		Median		2.00	
		Variance		8.554	
		Std. Deviation		2.925	
		Minimum		1	
		Maximum		8	
		Range		7	
		Interquartile Range		6	
		Skewness		1.243	0.752
		Kurtosis		-0.263	1.481
	CFDS/C	Mean		4.13	1.315
		95% Confidence Interval for Mean	Lower Bound	1.01	
			Upper Bound	7.24	
		5% Trimmed Mean		3.97	
		Median		2.00	
		Variance		13.839	
		Std. Deviation		3.720	
		Minimum		1	
		Maximum		10	
		Range		9	
		Interquartile Range		7	
		Skewness		1.246	0.752
		Kurtosis		-0.318	1.481
Time to TBS=19	CFDS/O	Mean		41.38	9.930
		95% Confidence Interval for Mean	Lower Bound	17.89	
			Upper Bound	64.86	
		5% Trimmed Mean		41.31	
		Median		39.50	
		Variance		788.839	
		Std. Deviation		28.086	
		Minimum		7	
		Maximum		77	
		Range		70	
		Interquartile Range		52	
		Skewness		0.088	0.752
		Kurtosis		-2.223	1.481
	CFDS/C	Mean		35.25	8.126
		95% Confidence Interval for Mean	Lower Bound	16.04	
			Upper Bound	54.46	
		5% Trimmed Mean		35.44	
		Median		36.00	
		Variance		528.214	
		Std. Deviation		22.983	
		Minimum		9	
		Maximum		58	
		Range		49	
		Interquartile Range		45	
		Skewness		-0.052	0.752
		Kurtosis		-2.614	1.481
Time to TBS=27	CFDS/O	Mean		88.50	18.588
		95% Confidence Interval for Mean	Lower Bound	40.72	
			Upper Bound	136.28	
		5% Trimmed Mean		87.28	
		Median		85.50	
		Variance		2073.100	
		Std. Deviation		45.531	
		Minimum		39	
		Maximum		160	
		Range		121	
		Interquartile Range		79	
		Skewness		0.596	0.845
		Kurtosis		-0.490	1.741
	CFDS/C	Mean		102.00	22.338
		95% Confidence Interval for Mean	Lower Bound	39.98	
			Upper Bound	164.02	
		5% Trimmed Mean		103.06	
		Median		133.00	
		Variance		2495.000	
		Std. Deviation		49.950	
		Minimum		39	
		Maximum		146	
		Range		107	
		Interquartile Range		93	
		Skewness		-0.636	0.913
		Kurtosis		-2.837	2.000
TBS at end of trial	CFDS/O	Mean		28.00	0.756
		95% Confidence Interval for Mean	Lower Bound	26.21	
			Upper Bound	29.79	
		5% Trimmed Mean		28.00	
		Median		27.50	
		Variance		4.571	
		Std. Deviation		2.138	
		Minimum		25	
		Maximum		31	
		Range		6	
		Interquartile Range		4	
		Skewness		0.117	0.752
		Kurtosis		-1.422	1.481
	CFDS/C	Mean		28.00	0.802
		95% Confidence Interval for Mean	Lower Bound	26.10	
			Upper Bound	29.90	
		5% Trimmed Mean		28.00	
		Median		28.00	
		Variance		5.143	
		Std. Deviation		2.268	
		Minimum		25	
		Maximum		31	
		Range		6	
		Interquartile Range		5	
		Skewness		0.196	0.752
		Kurtosis		-1.322	1.481
ADD at TBS=3	CFDS/O	Mean		0.00	0.000
		95% Confidence Interval for Mean	Lower Bound	0.00	
			Upper Bound	0.00	
		5% Trimmed Mean		0.00	
		Median		0.00	
		Variance		0.000	
		Std. Deviation		0.000	
		Minimum		0	
		Maximum		0	
		Range		0	
		Interquartile Range		0	
		Skewness			
		Kurtosis			
	CFDS/C	Mean		0.00	0.000
		95% Confidence Interval for Mean	Lower Bound	0.00	
			Upper Bound	0.00	
		5% Trimmed Mean		0.00	
		Median		0.00	
		Variance		0.000	
		Std. Deviation		0.000	
		Minimum		0	
		Maximum		0	
		Range		0	
		Interquartile Range		0	
		Skewness			
		Kurtosis			
ADD at TBS=6	CFDS/O	Mean		44.86	9.253
		95% Confidence Interval for Mean	Lower Bound	22.98	
			Upper Bound	66.74	
		5% Trimmed Mean		44.59	
		Median		43.39	
		Variance		684.882	
		Std. Deviation		26.170	
		Minimum		12	
		Maximum		83	
		Range		71	
		Interquartile Range		49	
		Skewness		0.571	0.752
		Kurtosis		-0.840	1.481
	CFDS/C	Mean		52.12	12.439
		95% Confidence Interval for Mean	Lower Bound	22.71	
			Upper Bound	81.54	
		5% Trimmed Mean		51.46	
		Median		46.89	
		Variance		1237.760	
		Std. Deviation		35.182	
		Minimum		12	
		Maximum		104	
		Range		92	
		Interquartile Range		67	
		Skewness		0.767	0.752
		Kurtosis		-0.733	1.481
ADD at TBS=19	CFDS/O	Mean		606.44	100.554
		95% Confidence Interval for Mean	Lower Bound	368.67	
			Upper Bound	844.21	
		5% Trimmed Mean		608.97	
		Median		614.06	
		Variance		80888.974	
		Std. Deviation		284.410	
		Minimum		177	
		Maximum		991	
		Range		814	
		Interquartile Range		493	
		Skewness		-0.048	0.752
		Kurtosis		-1.163	1.481
	CFDS/C	Mean		553.10	102.142
		95% Confidence Interval for Mean	Lower Bound	311.57	
			Upper Bound	794.63	
		5% Trimmed Mean		545.06	
		Median		565.05	
		Variance		83464.543	
		Std. Deviation		288.902	
		Minimum		231	
		Maximum		1020	
		Range		789	
		Interquartile Range		460	
		Skewness		0.340	0.752
		Kurtosis		-1.324	1.481
ADD at TBS=27	CFDS/O	Mean		1476.35	230.165
		95% Confidence Interval for Mean	Lower Bound	884.69	
			Upper Bound	2068.01	
		5% Trimmed Mean		1451.80	
		Median		1436.13	
		Variance		317856.555	
		Std. Deviation		563.788	
		Minimum		905	
		Maximum		2489	
		Range		1584	
		Interquartile Range		815	
		Skewness		1.265	0.845
		Kurtosis		2.098	1.741
	CFDS/C	Mean		1767.74	325.608
		95% Confidence Interval for Mean	Lower Bound	863.71	
			Upper Bound	2671.77	
		5% Trimmed Mean		1779.53	
		Median		2005.80	
		Variance		530102.882	
		Std. Deviation		728.082	
		Minimum		774	
		Maximum		2549	
		Range		1775	
		Interquartile Range		1370	
		Skewness		-0.549	0.913
		Kurtosis		-1.510	2.000
ADD at end of trial	CFDS/O	Mean		1999.56	148.015
		95% Confidence Interval for Mean	Lower Bound	1649.56	
			Upper Bound	2349.55	
		5% Trimmed Mean		1988.61	
		Median		1901.06	
		Variance		175267.142	
		Std. Deviation		418.649	
		Minimum		1606	
		Maximum		2590	
		Range		984	
		Interquartile Range		844	
		Skewness		0.605	0.752
		Kurtosis		-1.434	1.481
	CFDS/C	Mean		2015.65	157.343
		95% Confidence Interval for Mean	Lower Bound	1643.59	
			Upper Bound	2387.71	
		5% Trimmed Mean		2003.40	
		Median		1905.36	
		Variance		198054.009	
		Std. Deviation		445.033	
		Minimum		1602	
		Maximum		2650	
		Range		1048	
		Interquartile Range		895	
		Skewness		0.648	0.752
		Kurtosis		-1.353	1.481

Tests of Normality

		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Time to 25% biomass removal	CFDS/O	0.276	8	0.073	0.782	8	0.018
	CFDS/C	0.236	8	.200*	0.884	8	0.205
Time to 50% biomass removal	CFDS/O	0.216	8	.200*	0.846	8	0.087
	CFDS/C	0.270	8	0.089	0.806	8	0.033
Time to 75% biomass removal	CFDS/O	0.186	8	.200*	0.911	8	0.360
	CFDS/C	0.221	8	.200*	0.888	8	0.224
Time to onset of mummification (TBS defined)	CFDS/O	0.310	8	0.023	0.793	8	0.024
	CFDS/C	0.290	8	0.046	0.815	8	0.041
Time to complete mummification (TBS defined)	CFDS/O	0.216	8	.200*	0.894	8	0.254
	CFDS/C	0.206	8	.200*	0.859	8	0.118
Time to onset of mummification	CFDS/O	0.280	8	0.064	0.812	8	0.038
	CFDS/C	0.278	8	0.068	0.826	8	0.053
Time to TBS=3	CFDS/O		8			8	
	CFDS/C		8			8	
Time to TBS=6	CFDS/O	0.306	8	0.026	0.733	8	0.005
	CFDS/C	0.341	8	0.007	0.716	8	0.003
Time to TBS=19	CFDS/O	0.266	8	0.101	0.863	8	0.128
	CFDS/C	0.280	8	0.064	0.772	8	0.014
Time to TBS=27	CFDS/O	0.166	6	.200*	0.945	6	0.698
	CFDS/C	0.333	5	0.074	0.811	5	0.099
TBS at end of trial	CFDS/O	0.200	8	.200*	0.938	8	0.587
	CFDS/C	0.186	8	.200*	0.914	8	0.385
ADD at TBS=3	CFDS/O		8			8	
	CFDS/C		8			8	
ADD at TBS=6	CFDS/O	0.224	8	.200*	0.891	8	0.242
	CFDS/C	0.227	8	.200*	0.862	8	0.126
ADD at TBS=19	CFDS/O	0.163	8	.200*	0.955	8	0.764
	CFDS/C	0.212	8	.200*	0.887	8	0.220
ADD at TBS=27	CFDS/O	0.264	6	.200*	0.890	6	0.317
	CFDS/C	0.228	5	.200*	0.941	5	0.673
ADD at end of trial	CFDS/O	0.271	8	0.086	0.824	8	0.051
	CFDS/C	0.270	8	0.089	0.821	8	0.047

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

p = 0.05

Test Statistics[a,b]

	Kruskal-Wallis H	df	Asymp. Sig.
Time to 25% biomass removal	0.177	1	0.674
Time to 50% biomass removal	0.542	1	0.462
Time to 75% biomass removal	0.399	1	0.527
Time to onset of mummification (TBS defined)	0.335	1	0.563
Time to complete mummification (TBS defined)	0.003	1	0.958
Time to onset of mummification	0.543	1	0.461
Time to TBS=3	0.000	1	1.000
Time to TBS=6	0.303	1	0.582
Time to TBS=19	0.901	1	0.342
Time to TBS=27	0.209	1	0.647
TBS at end of trial	0.003	1	0.958
ADD at TBS=3	0.000	1	1.000
ADD at TBS=6	0.712	1	0.399
ADD at TBS=19	0.099	1	0.753
ADD at TBS=27	0.300	1	0.584
ADD at end of trial	0.000	1	1.000

a. Kruskal Wallis Test

b. Grouping Variable: Habitat

p = 0.05

Appendix A4.7d - Statistical outputs for seasonal comparision of decompositional measures

Descriptives

Variable	Season	Measure		Statistic	Std. Error
Time to 25% biomass removal	Summer	Mean		8.00	1.150
		95% Confidence Interval for Mean	Lower Bound	5.28	
			Upper Bound	10.72	
		5% Trimmed Mean		7.94	
		Median		7.00	
		Variance		10.571	
		Std. Deviation		3.251	
		Minimum		4	
		Maximum		13	
		Range		9	
		Interquartile Range		6	
		Skewness		0.432	0.752
		Kurtosis		-1.396	1.481
	Winter	Mean		41.25	5.311
		95% Confidence Interval for Mean	Lower Bound	28.69	
			Upper Bound	53.81	
		5% Trimmed Mean		41.11	
		Median		40.50	
		Variance		225.643	
		Std. Deviation		15.021	
		Minimum		25	
		Maximum		60	
		Range		35	
		Interquartile Range		31	
		Skewness		0.147	0.752
		Kurtosis		-2.224	1.481
Time to 50% biomass removal	Summer	Mean		13.38	2.112
		95% Confidence Interval for Mean	Lower Bound	8.38	
			Upper Bound	18.37	
		5% Trimmed Mean		12.97	
		Median		11.50	
		Variance		35.696	
		Std. Deviation		5.975	
		Minimum		8	
		Maximum		26	
		Range		18	
		Interquartile Range		8	
		Skewness		1.541	0.752
		Kurtosis		2.415	1.481
	Winter	Mean		64.75	4.916
		95% Confidence Interval for Mean	Lower Bound	53.12	
			Upper Bound	76.38	
		5% Trimmed Mean		64.39	
		Median		61.00	
		Variance		193.357	
		Std. Deviation		13.905	
		Minimum		46	
		Maximum		90	
		Range		44	
		Interquartile Range		20	
		Skewness		0.705	0.752
		Kurtosis		0.296	1.481
Time to 75% biomass removal	Summer	Mean		36.00	4.234
		95% Confidence Interval for Mean	Lower Bound	25.99	
			Upper Bound	46.01	
		5% Trimmed Mean		35.61	
		Median		37.50	
		Variance		143.429	
		Std. Deviation		11.976	
		Minimum		22	
		Maximum		57	
		Range		35	
		Interquartile Range		18	
		Skewness		0.467	0.752
		Kurtosis		-0.367	1.481
	Winter	Mean		87.75	3.347
		95% Confidence Interval for Mean	Lower Bound	79.83	
			Upper Bound	95.67	
		5% Trimmed Mean		87.72	
		Median		89.00	
		Variance		89.643	
		Std. Deviation		9.468	
		Minimum		75	
		Maximum		101	
		Range		26	
		Interquartile Range		18	
		Skewness		-0.094	0.752
		Kurtosis		-1.522	1.481
Time to onset of mummification (TBS defined)	Summer	Mean		20.88	0.953
		95% Confidence Interval for Mean	Lower Bound	18.62	
			Upper Bound	23.13	
		5% Trimmed Mean		20.81	
		Median		20.50	
		Variance		7.268	
		Std. Deviation		2.696	
		Minimum		17	
		Maximum		26	
		Range		9	
		Interquartile Range		3	
		Skewness		0.759	0.752
		Kurtosis		1.262	1.481
	Winter	Mean		94.50	4.814
		95% Confidence Interval for Mean	Lower Bound	83.12	
			Upper Bound	105.88	
		5% Trimmed Mean		94.72	
		Median		92.00	
		Variance		185.429	
		Std. Deviation		13.617	
		Minimum		73	
		Maximum		112	
		Range		39	
		Interquartile Range		25	
		Skewness		-0.034	0.752
		Kurtosis		-0.687	1.481

Descriptives

Variable	Season	Measure		Statistic	Std. Error
Time to complete mummification (TBS defined)	Summer	Mean		34.13	5.878
		95% Confidence Interval for Mean	Lower Bound	20.23	
			Upper Bound	48.02	
		5% Trimmed Mean		33.25	
		Median		28.50	
		Variance		276.411	
		Std. Deviation		16.626	
		Minimum		17	
		Maximum		67	
		Range		50	
		Interquartile Range		23	
		Skewness		1.357	0.752
		Kurtosis		1.204	1.481
	Winter	Mean		104.88	5.269
		95% Confidence Interval for Mean	Lower Bound	92.42	
			Upper Bound	117.33	
		5% Trimmed Mean		105.36	
		Median		109.50	
		Variance		222.125	
		Std. Deviation		14.904	
		Minimum		77	
		Maximum		124	
		Range		47	
		Interquartile Range		19	
		Skewness		-0.818	0.752
		Kurtosis		0.468	1.481
Time to onset of mummification	Summer	Mean		13.13	1.757
		95% Confidence Interval for Mean	Lower Bound	8.97	
			Upper Bound	17.28	
		5% Trimmed Mean		13.03	
		Median		12.50	
		Variance		24.696	
		Std. Deviation		4.970	
		Minimum		8	
		Maximum		20	
		Range		12	
		Interquartile Range		11	
		Skewness		0.478	0.752
		Kurtosis		-1.431	1.481
	Winter	Mean		62.88	3.114
		95% Confidence Interval for Mean	Lower Bound	55.51	
			Upper Bound	70.24	
		5% Trimmed Mean		62.97	
		Median		65.50	
		Variance		77.554	
		Std. Deviation		8.806	
		Minimum		49	
		Maximum		75	
		Range		26	
		Interquartile Range		14	
		Skewness		-0.638	0.752
		Kurtosis		-0.349	1.481
Time to TBS=3	Summer	Mean		0.00	0.000
		95% Confidence Interval for Mean	Lower Bound	0.00	
			Upper Bound	0.00	
		5% Trimmed Mean		0.00	
		Median		0.00	
		Variance		0.000	
		Std. Deviation		0.000	
		Minimum		0	
		Maximum		0	
		Range		0	
		Interquartile Range		0	
		Skewness			
		Kurtosis			
	Winter	Mean		0.00	0.000
		95% Confidence Interval for Mean	Lower Bound	0.00	
			Upper Bound	0.00	
		5% Trimmed Mean		0.00	
		Median		0.00	
		Variance		0.000	
		Std. Deviation		0.000	
		Minimum		0	
		Maximum		0	
		Range		0	
		Interquartile Range		0	
		Skewness			
		Kurtosis			
Time to TBS=6	Summer	Mean		1.88	0.125
		95% Confidence Interval for Mean	Lower Bound	1.58	
			Upper Bound	2.17	
		5% Trimmed Mean		1.92	
		Median		2.00	
		Variance		0.125	
		Std. Deviation		0.354	
		Minimum		1	
		Maximum		2	
		Range		1	
		Interquartile Range		0	
		Skewness		-2.828	0.752
		Kurtosis		8.000	1.481
	Winter	Mean		5.63	1.349
		95% Confidence Interval for Mean	Lower Bound	2.44	
			Upper Bound	8.81	
		5% Trimmed Mean		5.64	
		Median		6.00	
		Variance		14.554	
		Std. Deviation		3.815	
		Minimum		1	
		Maximum		10	
		Range		9	
		Interquartile Range		8	
		Skewness		-0.089	0.752
		Kurtosis		-2.041	1.481

Descriptives

Variable	Season	Measure		Statistic	Std. Error
Time to TBS=19	Summer	Mean		15.00	1.852
		95% Confidence Interval for Mean	Lower Bound	10.62	
			Upper Bound	19.38	
		5% Trimmed Mean		15.11	
		Median		17.00	
		Variance		27.429	
		Std. Deviation		5.237	
		Minimum		7	
		Maximum		21	
		Range		14	
		Interquartile Range		10	
		Skewness		-0.573	0.752
		Kurtosis		-1.488	1.481
	Winter	Mean		61.63	2.933
		95% Confidence Interval for Mean	Lower Bound	54.69	
			Upper Bound	68.56	
		5% Trimmed Mean		61.25	
		Median		58.00	
		Variance		68.839	
		Std. Deviation		8.297	
		Minimum		53	
		Maximum		77	
		Range		24	
		Interquartile Range		12	
		Skewness		1.288	0.752
		Kurtosis		0.453	1.481
Time to TBS=27	Summer	Mean		50.40	5.724
		95% Confidence Interval for Mean	Lower Bound	34.51	
			Upper Bound	66.29	
		5% Trimmed Mean		50.00	
		Median		48.00	
		Variance		163.800	
		Std. Deviation		12.798	
		Minimum		39	
		Maximum		69	
		Range		30	
		Interquartile Range		24	
		Skewness		0.744	0.913
		Kurtosis		-0.760	2.000
	Winter	Mean		131.50	8.659
		95% Confidence Interval for Mean	Lower Bound	109.24	
			Upper Bound	153.76	
		5% Trimmed Mean		131.56	
		Median		134.00	
		Variance		449.900	
		Std. Deviation		21.211	
		Minimum		102	
		Maximum		160	
		Range		58	
		Interquartile Range		39	
		Skewness		-0.181	0.845
		Kurtosis		-0.791	1.741
TBS at end of trial	Summer	Mean		27.50	0.681
		95% Confidence Interval for Mean	Lower Bound	25.89	
			Upper Bound	29.11	
		5% Trimmed Mean		27.44	
		Median		27.50	
		Variance		3.714	
		Std. Deviation		1.927	
		Minimum		25	
		Maximum		31	
		Range		6	
		Interquartile Range		3	
		Skewness		0.639	0.752
		Kurtosis		0.182	1.481
	Winter	Mean		28.50	0.824
		95% Confidence Interval for Mean	Lower Bound	26.55	
			Upper Bound	30.45	
		5% Trimmed Mean		28.56	
		Median		29.00	
		Variance		5.429	
		Std. Deviation		2.330	
		Minimum		25	
		Maximum		31	
		Range		6	
		Interquartile Range		5	
		Skewness		-0.361	0.752
		Kurtosis		-1.613	1.481
ADD at TBS=3	Summer	Mean		0.00	0.000
		95% Confidence Interval for Mean	Lower Bound	0.00	
			Upper Bound	0.00	
		5% Trimmed Mean		0.00	
		Median		0.00	
		Variance		0.000	
		Std. Deviation		0.000	
		Minimum		0	
		Maximum		0	
		Range		0	
		Interquartile Range		0	
		Skewness			
		Kurtosis			
	Winter	Mean		0.00	0.000
		95% Confidence Interval for Mean	Lower Bound	0.00	
			Upper Bound	0.00	
		5% Trimmed Mean		0.00	
		Median		0.00	
		Variance		0.000	
		Std. Deviation		0.000	
		Minimum		0	
		Maximum		0	
		Range		0	
		Interquartile Range		0	
		Skewness			
		Kurtosis			

Descriptives

Variable	Season	Measure		Statistic	Std. Error
ADD at TBS=6	Summer	Mean		35.51	4.237
		95% Confidence Interval for Mean	Lower Bound	25.49	
			Upper Bound	45.53	
		5% Trimmed Mean		35.50	
		Median		35.45	
		Variance		143.634	
		Std. Deviation		11.985	
		Minimum		24	
		Maximum		47	
		Range		23	
		Interquartile Range		23	
		Skewness		0.000	0.752
		Kurtosis		-2.799	1.481
	Winter	Mean		61.47	13.342
		95% Confidence Interval for Mean	Lower Bound	29.92	
			Upper Bound	93.02	
		5% Trimmed Mean		61.85	
		Median		68.32	
		Variance		1424.044	
		Std. Deviation		37.737	
		Minimum		12	
		Maximum		104	
		Range		92	
		Interquartile Range		80	
		Skewness		-0.276	0.752
		Kurtosis		-1.624	1.481
ADD at TBS=19	Summer	Mean		335.24	38.861
		95% Confidence Interval for Mean	Lower Bound	243.35	
			Upper Bound	427.13	
		5% Trimmed Mean		334.77	
		Median		329.70	
		Variance		12081.108	
		Std. Deviation		109.914	
		Minimum		177	
		Maximum		502	
		Range		326	
		Interquartile Range		174	
		Skewness		0.053	0.752
		Kurtosis		-1.052	1.481
	Winter	Mean		824.30	46.404
		95% Confidence Interval for Mean	Lower Bound	714.57	
			Upper Bound	934.03	
		5% Trimmed Mean		819.51	
		Median		740.19	
		Variance		17226.902	
		Std. Deviation		131.251	
		Minimum		715	
		Maximum		1020	
		Range		305	
		Interquartile Range		247	
		Skewness		0.762	0.752
		Kurtosis		-1.720	1.481
ADD at TBS=27	Summer	Mean		1096.30	132.620
		95% Confidence Interval for Mean	Lower Bound	728.09	
			Upper Bound	1464.51	
		5% Trimmed Mean		1091.00	
		Median		1016.35	
		Variance		87940.390	
		Std. Deviation		296.547	
		Minimum		774	
		Maximum		1514	
		Range		739	
		Interquartile Range		553	
		Skewness		0.595	0.913
		Kurtosis		-0.979	2.000
	Winter	Mean		2035.89	198.479
		95% Confidence Interval for Mean	Lower Bound	1525.68	
			Upper Bound	2546.09	
		5% Trimmed Mean		2045.01	
		Median		2121.66	
		Variance		236362.544	
		Std. Deviation		486.171	
		Minimum		1359	
		Maximum		2549	
		Range		1190	
		Interquartile Range		983	
		Skewness		-0.449	0.845
		Kurtosis		-1.628	1.741
ADD at end of trial	Summer	Mean		1645.88	15.871
		95% Confidence Interval for Mean	Lower Bound	1608.35	
			Upper Bound	1683.41	
		5% Trimmed Mean		1645.93	
		Median		1646.32	
		Variance		2015.082	
		Std. Deviation		44.890	
		Minimum		1602	
		Maximum		1689	
		Range		87	
		Interquartile Range		85	
		Skewness		-0.003	0.752
		Kurtosis		-2.789	1.481
	Winter	Mean		2369.33	95.118
		95% Confidence Interval for Mean	Lower Bound	2144.41	
			Upper Bound	2594.25	
		5% Trimmed Mean		2367.97	
		Median		2357.10	
		Variance		72379.868	
		Std. Deviation		269.035	
		Minimum		2113	
		Maximum		2650	
		Range		537	
		Interquartile Range		519	
		Skewness		0.025	0.752
		Kurtosis		-2.740	1.481

Tests of Normality

		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Time to 25% biomass removal	Summer	0.246	8	0.169	0.913	8	0.375
	Winter	0.231	8	.200*	0.848	8	0.091
Time to 50% biomass removal	Summer	0.216	8	.200*	0.845	8	0.084
	Winter	0.186	8	.200*	0.959	8	0.797
Time to 75% biomass removal	Summer	0.192	8	.200*	0.916	8	0.396
	Winter	0.173	8	.200*	0.945	8	0.665
Time to onset of mummification (TBS defined)	Summer	0.232	8	.200*	0.947	8	0.684
	Winter	0.169	8	.200*	0.943	8	0.640
Time to complete mummification (TBS defined)	Summer	0.277	8	0.071	0.855	8	0.108
	Winter	0.207	8	.200*	0.935	8	0.566
Time to onset of mummification	Summer	0.172	8	.200*	0.872	8	0.157
	Winter	0.210	8	.200*	0.904	8	0.314
Time to TBS=3	Summer		8			8	
	Winter		8			8	
Time to TBS=6	Summer	0.513	8	0.000	0.418	8	0.000
	Winter	0.233	8	.200*	0.866	8	0.138
Time to TBS=19	Summer	0.274	8	0.079	0.885	8	0.210
	Winter	0.328	8	0.012	0.799	8	0.028
Time to TBS=27	Summer	0.213	5	.200*	0.900	5	0.410
	Winter	0.195	6	.200*	0.971	6	0.898
TBS at end of trial	Summer	0.157	8	.200*	0.956	8	0.773
	Winter	0.240	8	0.195	0.901	8	0.293
ADD at TBS=3	Summer		8			8	
	Winter		8			8	
ADD at TBS=6	Summer	0.324	8	0.013	0.672	8	0.001
	Winter	0.212	8	.200*	0.889	8	0.228
ADD at TBS=19	Summer	0.180	8	.200*	0.961	8	0.824
	Winter	0.364	8	0.002	0.758	8	0.010
ADD at TBS=27	Summer	0.206	5	.200*	0.956	5	0.783
	Winter	0.162	6	.200*	0.920	6	0.504
ADD at end of trial	Summer	0.319	8	0.016	0.692	8	0.002
	Winter	0.319	8	0.016	0.716	8	0.003

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

p = 0.05

Test Statistics[a,b]

	Kruskal-Wallis H	df	Asymp. Sig.
Time to 25% biomass removal	11.327	1	0.001
Time to 50% biomass removal	11.327	1	0.001
Time to 75% biomass removal	11.361	1	0.001
Time to onset of mummification (TBS defined)	11.344	1	0.001
Time to complete mummification (TBS defined)	11.311	1	0.001
Time to onset of mummification	11.344	1	0.001
Time to TBS=3	0.000	1	1.000
Time to TBS=6	3.507	1	0.061
Time to TBS=19	11.395	1	0.001
Time to TBS=27	7.534	1	0.006
TBS at end of trial	0.722	1	0.396
ADD at TBS=3	0.000	1	1.000
ADD at TBS=6	1.602	1	0.206
ADD at TBS=19	11.311	1	0.001
ADD at TBS=27	6.533	1	0.011
ADD at end of trial	11.429	1	0.001

a. Kruskal Wallis Test

b. Grouping Variable: Season

p = 0.05

Appendix A4.7e - Statistical outputs for habitat comparision within-season of decompositional measures

SUMMER

Descriptives				Statistic	Std. Error
Time to 25% biomass removal	CFDS/O	Mean		6.75	1.548
		95% Confidence Interval for Mean	Lower Bound	1.82	
			Upper Bound	11.68	
		5% Trimmed Mean		6.67	
		Median		6.00	
		Variance		9.583	
		Std. Deviation		3.096	
		Minimum		4	
		Maximum		11	
		Range		7	
		Interquartile Range		6	
		Skewness		1.138	1.014
		Kurtosis		0.758	2.619
	CFDS/C	Mean		9.25	1.652
		95% Confidence Interval for Mean	Lower Bound	3.99	
			Upper Bound	14.51	
		5% Trimmed Mean		9.22	
		Median		9.00	
		Variance		10.917	
		Std. Deviation		3.304	
		Minimum		6	
		Maximum		13	
		Range		7	
		Interquartile Range		6	
		Skewness		0.229	1.014
		Kurtosis		-3.869	2.619
Time to 50% biomass removal	CFDS/O	Mean		13.75	4.110
		95% Confidence Interval for Mean	Lower Bound	0.67	
			Upper Bound	26.83	
		5% Trimmed Mean		13.33	
		Median		10.00	
		Variance		67.583	
		Std. Deviation		8.221	
		Minimum		9	
		Maximum		26	
		Range		17	
		Interquartile Range		13	
		Skewness		1.924	1.014
		Kurtosis		3.719	2.619
	CFDS/C	Mean		13.00	1.958
		95% Confidence Interval for Mean	Lower Bound	6.77	
			Upper Bound	19.23	
		5% Trimmed Mean		13.06	
		Median		13.50	
		Variance		15.333	
		Std. Deviation		3.916	
		Minimum		8	
		Maximum		17	
		Range		9	
		Interquartile Range		8	
		Skewness		-0.600	1.014
		Kurtosis		-0.768	2.619
Time to 75% biomass removal	CFDS/O	Mean		38.75	7.215
		95% Confidence Interval for Mean	Lower Bound	15.79	
			Upper Bound	61.71	
		5% Trimmed Mean		38.61	
		Median		37.50	
		Variance		208.250	
		Std. Deviation		14.431	
		Minimum		23	
		Maximum		57	
		Range		34	
		Interquartile Range		28	
		Skewness		0.447	1.014
		Kurtosis		-0.151	2.619
	CFDS/C	Mean		33.25	5.154
		95% Confidence Interval for Mean	Lower Bound	16.85	
			Upper Bound	49.65	
		5% Trimmed Mean		33.39	
		Median		34.50	
		Variance		106.250	
		Std. Deviation		10.308	
		Minimum		22	
		Maximum		42	
		Range		20	
		Interquartile Range		19	
		Skewness		-0.200	1.014
		Kurtosis		-4.858	2.619
Time to onset of mummification (TBS defined)	CFDS/O	Mean		19.50	0.957
		95% Confidence Interval for Mean	Lower Bound	16.45	
			Upper Bound	22.55	
		5% Trimmed Mean		19.56	
		Median		20.00	
		Variance		3.667	
		Std. Deviation		1.915	
		Minimum		17	
		Maximum		21	
		Range		4	
		Interquartile Range		4	
		Skewness		-0.855	1.014
		Kurtosis		-1.289	2.619
	CFDS/C	Mean		22.25	1.436
		95% Confidence Interval for Mean	Lower Bound	17.68	
			Upper Bound	26.82	
		5% Trimmed Mean		22.17	
		Median		21.50	
		Variance		8.250	
		Std. Deviation		2.872	
		Minimum		20	
		Maximum		26	
		Range		6	
		Interquartile Range		5	
		Skewness		0.855	1.014
		Kurtosis		-1.289	2.619

Descriptives				Statistic	Std. Error
Time to complete mummification (TBS defined)	CFDS/O	Mean		34.75	11.078
		95% Confidence Interval for Mean	Lower Bound	-0.51	
			Upper Bound	70.01	
		5% Trimmed Mean		33.94	
		Median		27.50	
		Variance		490.917	
		Std. Deviation		22.157	
		Minimum		17	
		Maximum		67	
		Range		50	
		Interquartile Range		39	
		Skewness		1.650	1.014
		Kurtosis		2.967	2.619
	CFDS/C	Mean		33.50	6.185
		95% Confidence Interval for Mean	Lower Bound	13.82	
			Upper Bound	53.18	
		5% Trimmed Mean		33.11	
		Median		30.00	
		Variance		153.000	
		Std. Deviation		12.369	
		Minimum		23	
		Maximum		51	
		Range		28	
		Interquartile Range		23	
		Skewness		1.383	1.014
		Kurtosis		1.840	2.619
Time to onset of mummification	CFDS/O	Mean		10.50	1.323
		95% Confidence Interval for Mean	Lower Bound	6.29	
			Upper Bound	14.71	
		5% Trimmed Mean		10.44	
		Median		10.00	
		Variance		7.000	
		Std. Deviation		2.646	
		Minimum		8	
		Maximum		14	
		Range		6	
		Interquartile Range		5	
		Skewness		0.864	1.014
		Kurtosis		-0.286	2.619
	CFDS/C	Mean		15.75	2.839
		95% Confidence Interval for Mean	Lower Bound	6.71	
			Upper Bound	24.79	
		5% Trimmed Mean		15.94	
		Median		17.50	
		Variance		32.250	
		Std. Deviation		5.679	
		Minimum		8	
		Maximum		20	
		Range		12	
		Interquartile Range		10	
		Skewness		-1.137	1.014
		Kurtosis		0.154	2.619
Time to TBS=3	CFDS/O	Mean		0.00	0.000
		95% Confidence Interval for Mean	Lower Bound	0.00	
			Upper Bound	0.00	
		5% Trimmed Mean		0.00	
		Median		0.00	
		Variance		0.000	
		Std. Deviation		0.000	
		Minimum		0	
		Maximum		0	
		Range		0	
		Interquartile Range		0	
		Skewness			
		Kurtosis			
	CFDS/C	Mean		0.00	0.000
		95% Confidence Interval for Mean	Lower Bound	0.00	
			Upper Bound	0.00	
		5% Trimmed Mean		0.00	
		Median		0.00	
		Variance		0.000	
		Std. Deviation		0.000	
		Minimum		0	
		Maximum		0	
		Range		0	
		Interquartile Range		0	
		Skewness			
		Kurtosis			
Time to TBS=6	CFDS/O	Mean		1.75	0.250
		95% Confidence Interval for Mean	Lower Bound	0.95	
			Upper Bound	2.55	
		5% Trimmed Mean		1.78	
		Median		2.00	
		Variance		0.250	
		Std. Deviation		0.500	
		Minimum		1	
		Maximum		2	
		Range		1	
		Interquartile Range		1	
		Skewness		-2.000	1.014
		Kurtosis		4.000	2.619
	CFDS/C	Mean		2.00	0.000
		95% Confidence Interval for Mean	Lower Bound	2.00	
			Upper Bound	2.00	
		5% Trimmed Mean		2.00	
		Median		2.00	
		Variance		0.000	
		Std. Deviation		0.000	
		Minimum		2	
		Maximum		2	
		Range		0	
		Interquartile Range		0	
		Skewness			
		Kurtosis			

Descriptives				Statistic	Std. Error
Time to TBS=19	CFDS/O	Mean		16.00	3.109
		95% Confidence Interval for Mean	Lower Bound	6.11	
			Upper Bound	25.89	
		5% Trimmed Mean		16.22	
		Median		18.00	
		Variance		38.667	
		Std. Deviation		6.218	
		Minimum		7	
		Maximum		21	
		Range		14	
		Interquartile Range		11	
		Skewness		-1.597	1.014
		Kurtosis		2.704	2.619
	CFDS/C	Mean		14.00	2.380
		95% Confidence Interval for Mean	Lower Bound	6.42	
			Upper Bound	21.58	
		5% Trimmed Mean		14.00	
		Median		14.00	
		Variance		22.667	
		Std. Deviation		4.761	
		Minimum		9	
		Maximum		19	
		Range		10	
		Interquartile Range		9	
		Skewness		0.000	1.014
		Kurtosis		-4.339	2.619
Time to TBS=27	CFDS/O	Mean		52.00	8.888
		95% Confidence Interval for Mean	Lower Bound	13.76	
			Upper Bound	90.24	
		5% Trimmed Mean			
		Median		48.00	
		Variance		237.000	
		Std. Deviation		15.395	
		Minimum		39	
		Maximum		69	
		Range		30	
		Interquartile Range			
		Skewness		1.090	1.225
		Kurtosis			
	CFDS/C	Mean		48.00	9.000
		95% Confidence Interval for Mean	Lower Bound	-66.36	
			Upper Bound	162.36	
		5% Trimmed Mean			
		Median		48.00	
		Variance		162.000	
		Std. Deviation		12.728	
		Minimum		39	
		Maximum		57	
		Range		18	
		Interquartile Range			
		Skewness			
		Kurtosis			
TBS at end of trial	CFDS/O	Mean		28.00	1.080
		95% Confidence Interval for Mean	Lower Bound	24.56	
			Upper Bound	31.44	
		5% Trimmed Mean		27.94	
		Median		27.50	
		Variance		4.667	
		Std. Deviation		2.160	
		Minimum		26	
		Maximum		31	
		Range		5	
		Interquartile Range		4	
		Skewness		1.190	1.014
		Kurtosis		1.500	2.619
	CFDS/C	Mean		27.00	0.913
		95% Confidence Interval for Mean	Lower Bound	24.09	
			Upper Bound	29.91	
		5% Trimmed Mean		27.00	
		Median		27.00	
		Variance		3.333	
		Std. Deviation		1.826	
		Minimum		25	
		Maximum		29	
		Range		4	
		Interquartile Range		4	
		Skewness		0.000	1.014
		Kurtosis		-3.300	2.619
ADD at TBS=3	CFDS/O	Mean		0.00	0.000
		95% Confidence Interval for Mean	Lower Bound	0.00	
			Upper Bound	0.00	
		5% Trimmed Mean		0.00	
		Median		0.00	
		Variance		0.000	
		Std. Deviation		0.000	
		Minimum		0	
		Maximum		0	
		Range		0	
		Interquartile Range		0	
		Skewness			
		Kurtosis			
	CFDS/C	Mean		0.00	0.000
		95% Confidence Interval for Mean	Lower Bound	0.00	
			Upper Bound	0.00	
		5% Trimmed Mean		0.00	
		Median		0.00	
		Variance		0.000	
		Std. Deviation		0.000	
		Minimum		0	
		Maximum		0	
		Range		0	
		Interquartile Range		0	
		Skewness			
		Kurtosis			

Descriptives				Statistic	Std. Error
ADD at TBS=6	CFDS/O	Mean		35.41	6.435
		95% Confidence Interval for Mean	Lower Bound	14.93	
			Upper Bound	55.88	
		5% Trimmed Mean		35.41	
		Median		35.41	
		Variance		165.615	
		Std. Deviation		12.869	
		Minimum		24	
		Maximum		47	
		Range		22	
		Interquartile Range		22	
		Skewness		0.000	1.014
		Kurtosis		-6.000	2.619
	CFDS/C	Mean		35.62	6.510
		95% Confidence Interval for Mean	Lower Bound	14.90	
			Upper Bound	56.33	
		5% Trimmed Mean		35.62	
		Median		35.62	
		Variance		169.501	
		Std. Deviation		13.019	
		Minimum		24	
		Maximum		47	
		Range		23	
		Interquartile Range		23	
		Skewness		0.000	1.014
		Kurtosis		-6.000	2.619
ADD at TBS=19	CFDS/O	Mean		368.07	69.050
		95% Confidence Interval for Mean	Lower Bound	148.32	
			Upper Bound	587.82	
		5% Trimmed Mean		371.25	
		Median		396.67	
		Variance		19071.846	
		Std. Deviation		138.101	
		Minimum		177	
		Maximum		502	
		Range		326	
		Interquartile Range		255	
		Skewness		-1.133	1.014
		Kurtosis		1.852	2.619
	CFDS/C	Mean		302.42	39.509
		95% Confidence Interval for Mean	Lower Bound	176.68	
			Upper Bound	428.15	
		5% Trimmed Mean		300.11	
		Median		281.68	
		Variance		6243.905	
		Std. Deviation		79.018	
		Minimum		231	
		Maximum		415	
		Range		184	
		Interquartile Range		139	
		Skewness		1.429	1.014
		Kurtosis		2.675	2.619
ADD at TBS=27	CFDS/O	Mean		1145.05	187.104
		95% Confidence Interval for Mean	Lower Bound	340.00	
			Upper Bound	1950.09	
		5% Trimmed Mean			
		Median		1016.35	
		Variance		105023.657	
		Std. Deviation		324.074	
		Minimum		905	
		Maximum		1514	
		Range		609	
		Interquartile Range			
		Skewness		1.505	1.225
		Kurtosis			
	CFDS/C	Mean		1023.18	248.890
		95% Confidence Interval for Mean	Lower Bound	-2139.27	
			Upper Bound	4185.63	
		5% Trimmed Mean			
		Median		1023.18	
		Variance		123892.464	
		Std. Deviation		351.984	
		Minimum		774	
		Maximum		1272	
		Range		498	
		Interquartile Range			
		Skewness			
		Kurtosis			
ADD at end of trial	CFDS/O	Mean		1647.35	23.974
		95% Confidence Interval for Mean	Lower Bound	1571.05	
			Upper Bound	1723.64	
		5% Trimmed Mean		1647.35	
		Median		1647.35	
		Variance		2299.101	
		Std. Deviation		47.949	
		Minimum		1606	
		Maximum		1689	
		Range		83	
		Interquartile Range		83	
		Skewness		0.000	1.014
		Kurtosis		-6.000	2.619
	CFDS/C	Mean		1644.41	24.480
		95% Confidence Interval for Mean	Lower Bound	1566.50	
			Upper Bound	1722.32	
		5% Trimmed Mean		1644.41	
		Median		1644.41	
		Variance		2397.013	
		Std. Deviation		48.959	
		Minimum		1602	
		Maximum		1687	
		Range		85	
		Interquartile Range		85	
		Skewness		0.000	1.014
		Kurtosis		-6.000	2.619

Test Statistics[a,b]	Summer Kruskal-Wallis H	df	Asymp. Sig.	Winter Kruskal-Wallis H	df	Asymp. Sig.
Time to 25% biomass removal	1.366	1	0.243	5.333	1	0.021
Time to 50% biomass removal	0.084	1	0.772	5.398	1	0.020
Time to 75% biomass removal	0.350	1	0.554	1.333	1	0.248
Time to onset of mummification (TBS defined)	1.366	1	0.243	0.190	1	0.663
Time to complete mummification (TBS defined)	0.083	1	0.773	0.021	1	0.885
Time to onset of mummification	1.729	1	0.189	0.527	1	0.468
Time to TBS=3	0.000	1	1.000	0.000	1	1.000
Time to TBS=6	1.000	1	0.317	0.540	1	0.462
Time to TBS=19	0.341	1	0.559	4.288	1	0.038
Time to TBS=27	0.088	1	0.767	0.429	1	0.513
TBS at end of trial	0.341	1	0.559	0.768	1	0.381
ADD at TBS=3	0.000	1	1.000	0.000	1	1.000
ADD at TBS=6	1.400	1	0.237	0.341	1	0.559
ADD at TBS=19	0.750	1	0.386	0.000	1	1.000
ADD at TBS=27	0.333	1	0.564	1.190	1	0.275
ADD at end of trial	1.400	1	0.237	1.400	1	0.237

a. Kruskal Wallis Test

b. Grouping Variable: Habitat

$p < 0.05$

WINTER

Descriptives				Statistic	Std. Error
Time to 25% biomass removal	CFDS/O	Mean		54.75	2.780
		95% Confidence Interval for Mean	Lower Bound	45.90	
			Upper Bound	63.60	
		5% Trimmed Mean		54.78	
		Median		55.00	
		Variance		30.917	
		Std. Deviation		5.560	
		Minimum		49	
		Maximum		60	
		Range		11	
		Interquartile Range		10	
		Skewness		-0.083	1.014
		Kurtosis		-5.211	2.619
	CFDS/C	Mean		27.75	1.548
		95% Confidence Interval for Mean	Lower Bound	22.82	
			Upper Bound	32.68	
		5% Trimmed Mean		27.67	
		Median		27.00	
		Variance		9.583	
		Std. Deviation		3.096	
		Minimum		25	
		Maximum		32	
		Range		7	
		Interquartile Range		6	
		Skewness		1.138	1.014
		Kurtosis		0.758	2.619
Time to 50% biomass removal	CFDS/O	Mean		75.25	5.588
		95% Confidence Interval for Mean	Lower Bound	57.47	
			Upper Bound	93.03	
		5% Trimmed Mean		75.06	
		Median		73.50	
		Variance		124.917	
		Std. Deviation		11.177	
		Minimum		64	
		Maximum		90	
		Range		26	
		Interquartile Range		21	
		Skewness		0.786	1.014
		Kurtosis		0.197	2.619
	CFDS/C	Mean		54.25	2.839
		95% Confidence Interval for Mean	Lower Bound	45.21	
			Upper Bound	63.29	
		5% Trimmed Mean		54.50	
		Median		56.50	
		Variance		32.250	
		Std. Deviation		5.679	
		Minimum		46	
		Maximum		58	
		Range		12	
		Interquartile Range		10	
		Skewness		-1.659	1.014
		Kurtosis		2.615	2.619
Time to 75% biomass removal	CFDS/O	Mean		91.50	5.172
		95% Confidence Interval for Mean	Lower Bound	75.04	
			Upper Bound	107.96	
		5% Trimmed Mean		91.78	
		Median		94.00	
		Variance		107.000	
		Std. Deviation		10.344	
		Minimum		77	
		Maximum		101	
		Range		24	
		Interquartile Range		19	
		Skewness		-1.265	1.014
		Kurtosis		1.861	2.619
	CFDS/C	Mean		84.00	4.021
		95% Confidence Interval for Mean	Lower Bound	71.20	
			Upper Bound	96.80	
		5% Trimmed Mean		83.94	
		Median		83.50	
		Variance		64.667	
		Std. Deviation		8.042	
		Minimum		75	
		Maximum		94	
		Range		19	
		Interquartile Range		16	
		Skewness		0.323	1.014
		Kurtosis		-0.222	2.619
Time to onset of mummification (TBS defined)	CFDS/O	Mean		94.00	6.258
		95% Confidence Interval for Mean	Lower Bound	74.08	
			Upper Bound	113.92	
		5% Trimmed Mean		93.61	
		Median		90.50	
		Variance		156.667	
		Std. Deviation		12.517	
		Minimum		83	
		Maximum		112	
		Range		29	
		Interquartile Range		22	
		Skewness		1.499	1.014
		Kurtosis		2.791	2.619
	CFDS/C	Mean		95.00	8.297
		95% Confidence Interval for Mean	Lower Bound	68.60	
			Upper Bound	121.40	
		5% Trimmed Mean		95.28	
		Median		97.50	
		Variance		275.333	
		Std. Deviation		16.593	
		Minimum		73	
		Maximum		112	
		Range		39	
		Interquartile Range		32	
		Skewness		-0.788	1.014
		Kurtosis		0.579	2.619

Descriptives				Statistic	Std. Error
Time to complete mummification (TBS defined)	CFDS/O	Mean		107.00	7.012
		95% Confidence Interval for Mean	Lower Bound	84.69	
			Upper Bound	129.31	
		5% Trimmed Mean		106.72	
		Median		104.50	
		Variance		196.667	
		Std. Deviation		14.024	
		Minimum		95	
		Maximum		124	
		Range		29	
		Interquartile Range		26	
		Skewness		0.500	1.014
		Kurtosis		-3.141	2.619
	CFDS/C	Mean		102.75	8.797
		95% Confidence Interval for Mean	Lower Bound	74.75	
			Upper Bound	130.75	
		5% Trimmed Mean		103.50	
		Median		109.50	
		Variance		309.583	
		Std. Deviation		17.595	
		Minimum		77	
		Maximum		115	
		Range		38	
		Interquartile Range		30	
		Skewness		-1.729	1.014
		Kurtosis		2.962	2.619
Time to onset of mummification	CFDS/O	Mean		58.75	5.072
		95% Confidence Interval for Mean	Lower Bound	42.61	
			Upper Bound	74.89	
		5% Trimmed Mean		58.78	
		Median		59.00	
		Variance		102.917	
		Std. Deviation		10.145	
		Minimum		49	
		Maximum		68	
		Range		19	
		Interquartile Range		18	
		Skewness		-0.025	1.014
		Kurtosis		-5.759	2.619
	CFDS/C	Mean		67.00	2.858
		95% Confidence Interval for Mean	Lower Bound	57.91	
			Upper Bound	76.09	
		5% Trimmed Mean		66.83	
		Median		65.50	
		Variance		32.667	
		Std. Deviation		5.715	
		Minimum		62	
		Maximum		75	
		Range		13	
		Interquartile Range		11	
		Skewness		1.285	1.014
		Kurtosis		1.500	2.619
Time to TBS=3	CFDS/O	Mean		0.00	0.000
		95% Confidence Interval for Mean	Lower Bound	0.00	
			Upper Bound	0.00	
		5% Trimmed Mean		0.00	
		Median		0.00	
		Variance		0.000	
		Std. Deviation		0.000	
		Minimum		0	
		Maximum		0	
		Range		0	
		Interquartile Range		0	
		Skewness			
		Kurtosis			
	CFDS/C	Mean		0.00	0.000
		95% Confidence Interval for Mean	Lower Bound	0.00	
			Upper Bound	0.00	
		5% Trimmed Mean		0.00	
		Median		0.00	
		Variance		0.000	
		Std. Deviation		0.000	
		Minimum		0	
		Maximum		0	
		Range		0	
		Interquartile Range		0	
		Skewness			
		Kurtosis			
Time to TBS=6	CFDS/O	Mean		5.00	1.780
		95% Confidence Interval for Mean	Lower Bound	-0.66	
			Upper Bound	10.66	
		5% Trimmed Mean		5.06	
		Median		5.50	
		Variance		12.667	
		Std. Deviation		3.559	
		Minimum		1	
		Maximum		8	
		Range		7	
		Interquartile Range		7	
		Skewness		-0.266	1.014
		Kurtosis		-4.483	2.619
	CFDS/C	Mean		6.25	2.250
		95% Confidence Interval for Mean	Lower Bound	-0.91	
			Upper Bound	13.41	
		5% Trimmed Mean		6.33	
		Median		7.00	
		Variance		20.250	
		Std. Deviation		4.500	
		Minimum		1	
		Maximum		10	
		Range		9	
		Interquartile Range		8	
		Skewness		-0.370	1.014
		Kurtosis		-3.901	2.619

Descriptives				Statistic	Std. Error
Time to TBS=19	CFDS/O	Mean		66.75	4.608
		95% Confidence Interval for Mean	Lower Bound	52.09	
			Upper Bound	81.41	
		5% Trimmed Mean		66.67	
		Median		66.00	
		Variance		84.917	
		Std. Deviation		9.215	
		Minimum		58	
		Maximum		77	
		Range		19	
		Interquartile Range		17	
		Skewness		0.208	1.014
		Kurtosis		-4.377	2.619
	CFDS/C	Mean		56.50	1.190
		95% Confidence Interval for Mean	Lower Bound	52.71	
			Upper Bound	60.29	
		5% Trimmed Mean		56.61	
		Median		57.50	
		Variance		5.667	
		Std. Deviation		2.380	
		Minimum		53	
		Maximum		58	
		Range		5	
		Interquartile Range		4	
		Skewness		-1.779	1.014
		Kurtosis		3.135	2.619
Time to TBS=27	CFDS/O	Mean		125.00	17.786
		95% Confidence Interval for Mean	Lower Bound	48.47	
			Upper Bound	201.53	
		5% Trimmed Mean			
		Median		113.00	
		Variance		949.000	
		Std. Deviation		30.806	
		Minimum		102	
		Maximum		160	
		Range		58	
		Interquartile Range			
		Skewness		1.487	1.225
		Kurtosis			
	CFDS/C	Mean		138.00	4.041
		95% Confidence Interval for Mean	Lower Bound	120.61	
			Upper Bound	155.39	
		5% Trimmed Mean			
		Median		135.00	
		Variance		49.000	
		Std. Deviation		7.000	
		Minimum		133	
		Maximum		146	
		Range		13	
		Interquartile Range			
		Skewness		1.574	1.225
		Kurtosis			
TBS at end of trial	CFDS/O	Mean		28.00	1.225
		95% Confidence Interval for Mean	Lower Bound	24.10	
			Upper Bound	31.90	
		5% Trimmed Mean		28.06	
		Median		28.50	
		Variance		6.000	
		Std. Deviation		2.449	
		Minimum		25	
		Maximum		30	
		Range		5	
		Interquartile Range		5	
		Skewness		-0.544	1.014
		Kurtosis		-2.944	2.619
	CFDS/C	Mean		29.00	1.225
		95% Confidence Interval for Mean	Lower Bound	25.10	
			Upper Bound	32.90	
		5% Trimmed Mean		29.06	
		Median		29.50	
		Variance		6.000	
		Std. Deviation		2.449	
		Minimum		26	
		Maximum		31	
		Range		5	
		Interquartile Range		5	
		Skewness		-0.544	1.014
		Kurtosis		-2.944	2.619
ADD at TBS=3	CFDS/O	Mean		0.00	0.000
		95% Confidence Interval for Mean	Lower Bound	0.00	
			Upper Bound	0.00	
		5% Trimmed Mean		0.00	
		Median		0.00	
		Variance		0.000	
		Std. Deviation		0.000	
		Minimum		0	
		Maximum		0	
		Range		0	
		Interquartile Range		0	
		Skewness			
		Kurtosis			
	CFDS/C	Mean		0.00	0.000
		95% Confidence Interval for Mean	Lower Bound	0.00	
			Upper Bound	0.00	
		5% Trimmed Mean		0.00	
		Median		0.00	
		Variance		0.000	
		Std. Deviation		0.000	
		Minimum		0	
		Maximum		0	
		Range		0	
		Interquartile Range		0	
		Skewness			
		Kurtosis			

Descriptives				Statistic	Std. Error
ADD at TBS=6	CFDS/O	Mean		54.31	17.278
		95% Confidence Interval for Mean	Lower Bound	-0.68	
			Upper Bound	109.30	
		5% Trimmed Mean		55.10	
		Median		61.38	
		Variance		1194.177	
		Std. Deviation		34.557	
		Minimum		12	
		Maximum		83	
		Range		71	
		Interquartile Range		63	
		Skewness		-0.546	1.014
		Kurtosis		-2.936	2.619
	CFDS/C	Mean		68.63	22.315
		95% Confidence Interval for Mean	Lower Bound	-2.38	
			Upper Bound	139.65	
		5% Trimmed Mean		69.81	
		Median		79.20	
		Variance		1991.836	
		Std. Deviation		44.630	
		Minimum		12	
		Maximum		104	
		Range		92	
		Interquartile Range		82	
		Skewness		-0.716	1.014
		Kurtosis		-2.021	2.619
ADD at TBS=19	CFDS/O	Mean		844.81	67.355
		95% Confidence Interval for Mean	Lower Bound	630.46	
			Upper Bound	1059.17	
		5% Trimmed Mean		843.32	
		Median		831.38	
		Variance		18146.819	
		Std. Deviation		134.710	
		Minimum		726	
		Maximum		991	
		Range		265	
		Interquartile Range		247	
		Skewness		0.181	1.014
		Kurtosis		-4.919	2.619
	CFDS/C	Mean		803.79	72.331
		95% Confidence Interval for Mean	Lower Bound	573.60	
			Upper Bound	1033.97	
		5% Trimmed Mean		796.72	
		Median		740.19	
		Variance		20927.114	
		Std. Deviation		144.662	
		Minimum		715	
		Maximum		1020	
		Range		305	
		Interquartile Range		229	
		Skewness		1.958	1.014
		Kurtosis		3.871	2.619
ADD at TBS=27	CFDS/O	Mean		1807.65	346.570
		95% Confidence Interval for Mean	Lower Bound	316.48	
			Upper Bound	3298.82	
		5% Trimmed Mean			
		Median		1574.96	
		Variance		360332.034	
		Std. Deviation		600.277	
		Minimum		1359	
		Maximum		2489	
		Range		1131	
		Interquartile Range			
		Skewness		1.482	1.225
		Kurtosis			
	CFDS/C	Mean		2264.12	157.380
		95% Confidence Interval for Mean	Lower Bound	1586.97	
			Upper Bound	2941.27	
		5% Trimmed Mean			
		Median		2237.52	
		Variance		74305.245	
		Std. Deviation		272.590	
		Minimum		2006	
		Maximum		2549	
		Range		543	
		Interquartile Range			
		Skewness		0.435	1.225
		Kurtosis			
ADD at end of trial	CFDS/O	Mean		2351.77	137.707
		95% Confidence Interval for Mean	Lower Bound	1913.52	
			Upper Bound	2790.01	
		5% Trimmed Mean		2351.77	
		Median		2351.77	
		Variance		75852.540	
		Std. Deviation		275.413	
		Minimum		2113	
		Maximum		2590	
		Range		477	
		Interquartile Range		477	
		Skewness		0.000	1.014
		Kurtosis		-6.000	2.619
	CFDS/C	Mean		2386.89	151.832
		95% Confidence Interval for Mean	Lower Bound	1903.69	
			Upper Bound	2870.09	
		5% Trimmed Mean		2386.89	
		Median		2386.89	
		Variance		92211.307	
		Std. Deviation		303.663	
		Minimum		2124	
		Maximum		2650	
		Range		526	
		Interquartile Range		526	
		Skewness		0.000	1.014
		Kurtosis		-6.000	2.619

Appendix A4.8a - Raw TBS data for W-2014

		CFDS/O-1 TBS				CFDS/O-2 TBS				CFDS/C-1 TBS				CFDS/C-2 TBS			
Day	Date	H&N	Trunk	Limbs	Total	H&N	Trunk	Limbs	Total	H&N	Trunk	Limbs	Total	H&N	Trunk	Limbs	Total
0	2014/07/01	1	1	1	3	1	1	1	3	1	1	1	3	1	1	1	3
1	2014/07/02	1	1	1	3	1	1	1	3	1	1	1	3	1	1	1	3
2	2014/07/03	1	1	1	3	1	1	1	3	1	1	1	3	1	1	1	3
3	2014/07/04	1	1	1	3	1	1	1	3	1	2	1	4	1	1	1	3
4	2014/07/05	1	1	1	3	1	1	1	3	1	2	1	4	1	1	1	3
5	2014/07/06	1	1	1	3	1	1	1	3	1	2	1	4	1	1	1	3
6	2014/07/07	1	1	1	3	1	1	1	3	1	2	1	4	1	1	1	3
7	2014/07/08	1	2	1	4	2	2	1	5	1	2	1	4	1	1	1	3
8	2014/07/09	2	3	1	6	2	3	1	6	2	2	1	5	2	2	1	5
9	2014/07/10	2	3	2	7	2	2	2	6	2	2	1	5	2	2	1	5
10	2014/07/11	2	4	2	8	2	2	2	6	2	2	2	6	2	2	2	6
11	2014/07/12	2	4	2	8	2	3	2	7	2	2	2	6	2	3	3	8
12	2014/07/13	2	4	2	8	2	3	2	7	2	3	2	7	2	3	2	7
13	2014/07/14	2	4	2	8	2	4	2	8	2	3	2	7	3	3	2	8
14	2014/07/15	2	4	2	8	2	4	3	9	2	3	3	8	4	3	2	9
15	2014/07/16	2	4	3	9	3	4	3	10	2	3	3	8	4	3	3	10
16	2014/07/17	3	4	3	10	3	4	3	10	2	3	3	8	4	4	3	11
17	2014/07/18	3	4	3	10	3	4	3	10	3	3	3	9	4	4	3	11
18	2014/07/19	5	4	3	12	4	4	3	11	3	4	3	10	4	4	3	11
19	2014/07/20	5	4	3	12	5	4	3	12	3	4	3	10	5	4	3	12
20	2014/07/21	5	4	3	12	5	4	3	12	3	4	3	10	6	4	3	13
21	2014/07/22	5	4	3	12	5	4	3	12	3	4	3	10	6	4	3	13
22	2014/07/23				0				0				0				0
23	2014/07/24	5	4	4	13	5	4	3	12	5	4	4	13	6	4	4	14
24	2014/07/25	5	4	4	13	5	4	4	13	5	4	4	13	6	4	4	14
25	2014/07/26	5	4	4	13	5	4	4	13	5	4	4	13	6	4	4	14
26	2014/07/27	6	4	4	14	6	4	4	14	5	4	4	13	6	4	4	14
27	2014/07/28	6	4	4	14	6	4	4	14	5	4	4	13	6	4	4	14
28	2014/07/29	6	4	4	14	6	4	4	14	6	4	4	14	6	4	4	14
29	2014/07/30	6	4	4	14	6	4	4	14	6	4	4	14	6	4	4	14
30	2014/07/31	6	4	4	14	6	4	4	14	6	4	4	14	6	4	4	14
31	2014/08/01	6	4	4	14	6	4	4	14	6	4	4	14	6	4	4	14
32	2014/08/02	6	4	4	14	6	4	4	14	6	4	4	14	6	4	4	14
33	2014/08/03	6	4	4	14	6	4	4	14	6	4	4	14	6	4	4	14
34	2014/08/04	6	4	4	14	6	4	4	14	6	4	4	14	6	4	4	14
35	2014/08/05	6	4	4	14	6	4	4	14	6	4	4	14	6	4	4	14
36	2014/08/06	6	4	4	14	6	4	4	14	6	4	4	14	6	4	4	14
37	2014/08/07	6	4	4	14	6	4	4	14	6	4	4	14	6	4	4	14
38	2014/08/08	6	4	4	14	6	4	4	14	6	4	4	14	6	4	4	14
39	2014/08/09	6	4	4	14	6	4	4	14	6	4	4	14	6	4	4	14
40	2014/08/10	6	4	4	14	6	4	4	14	6	4	4	14	6	4	4	14
41	2014/08/11	6	4	4	14	6	4	4	14	6	4	4	14	6	4	4	14
42	2014/08/12	6	4	4	14	6	4	4	14	6	4	4	14	6	4	4	14
43	2014/08/13	6	4	4	14	6	4	4	14	6	4	4	14	6	4	4	14
44	2014/08/14	6	4	4	14	6	4	4	14	6	4	4	14	6	4	4	14
45	2014/08/15	7	4	4	15	6	4	4	14	6	4	4	14	6	4	4	14
46	2014/08/16	8	4	4	16	6	4	4	14	6	4	4	14	6	4	4	14
47	2014/08/17	8	4	4	16	6	4	4	14	6	4	4	14	6	4	4	14
48	2014/08/18	8	4	4	16	6	4	4	14	6	4	4	14	6	4	4	14
49	2014/08/19	8	4	4	16	6	4	4	14	6	4	4	14	6	4	4	14
50	2014/08/20																
51	2014/08/21	8	4	4	16	6	4	4	14	6	4	4	14	6	4	4	14
52	2014/08/22	8	4	4	16	6	4	4	14	6	4	4	14	6	4	4	14
53	2014/08/23				0				0				0				0
54	2014/08/24	8	4	4	16	6	4	4	14	6	4	4	14	6	4	4	14
55	2014/08/25				0				0				0				0
56	2014/08/26	8	5	5	18	6	4	5	15	6	4	4	14	6	4	4	14
57	2014/08/27				0				0				0				0
58	2014/08/28	8	6	5	19	7	4	5	16	6	7	6	19	6	7	6	19
59	2014/08/29				0				0				0				0
60	2014/08/30	8	6	5	19	7	4	5	16	6	7	6	19	6	7	6	19
61	2014/08/31				0				0				0				0
62	2014/09/01	8	6	5	19	7	4	5	16	6	7	6	19	6	7	6	19
63	2014/09/02				0				0				0				0
64	2014/09/03	8	6	5	19	7	4	5	16	7	7	6	20	7	7	6	20
65	2014/09/04				0				0				0				0
66	2014/09/05	8	6	5	19	7	4	5	16	7	7	6	20	7	7	6	20
67	2014/09/06				0				0				0				0
68	2014/09/07	8	7	6	21	7	5	5	17	7	7	6	20	7	7	6	20
69	2014/09/08				0				0				0				0
70	2014/09/09	8	7	5	20	7	6	5	18	7	7	6	20	7	7	6	20
71	2014/09/10				0				0				0				0
72	2014/09/11	8	7	5	20	8	6	5	19	8	7	6	21	7	7	6	20
73	2014/09/12				0				0				0				0
74	2014/09/13				0				0				0				0
75	2014/09/14	8	7	5	20	8	6	5	19	8	7	6	21	7	7	6	20
76	2014/09/15				0				0				0				0
77	2014/09/16	8	7	5	20	8	6	5	19	8	7	6	21	8	7	6	21
78	2014/09/17				0				0				0				0
79	2014/09/18				0				0				0				0
80	2014/09/19	8	7	5	20	8	6	5	19	8	7	6	21	8	7	6	21
81	2014/09/20				0				0				0				0
82	2014/09/21				0				0				0				0
83	2014/09/22	9	7	6	22	8	6	5	19	8	7	6	21	8	7	6	21
84	2014/09/23				0				0				0				0
85	2014/09/24				0				0				0				0
86	2014/09/25	9	7	6	22	8	6	5	19	8	7	6	21	8	7	6	21
87	2014/09/26				0				0				0				0
88	2014/09/27				0				0				0				0
89	2014/09/28				0				0				0				0
90	2014/09/29	9	7	6	22	9	6	5	20	8	7	6	21	8	7	6	21
91	2014/09/30				0				0				0				0
92	2014/10/01				0				0				0				0
93	2014/10/02	9	7	6	22	9	7	5	21	9	8	7	24	8	7	6	21
94	2014/10/03				0				0				0				0
95	2014/10/04				0				0				0				0
96	2014/10/05	9	8	7	24	9	7	6	22	9	8	7	24	8	7	7	22
97	2014/10/06				0				0				0				0
98	2014/10/07				0				0				0				0
99	2014/10/08	9	8	7	24	8	7	6	21	8	7	7	22	8	7	6	21
100	2014/10/09				0				0				0				0
101	2014/10/10				0				0				0				0
102	2014/10/11	9	8	7	24	9	7	6	22	8	8	7	23	8	7	7	22
103	2014/10/12				0				0				0				0
104	2014/10/13				0				0				0				0
105	2014/10/14				0				0				0				0
106	2014/10/15	9	8	7	24	9	7	6	22	9	8	7	24	8	8	7	23
107	2014/10/16				0				0				0				0
108	2014/10/17				0				0				0				0
109	2014/10/18				0				0				0				0
110	2014/10/19				0				0				0				0
111	2014/10/20				0				0				0				0
112	2014/10/21				0				0				0				0
113	2014/10/22	10	9	8	27	9	8	7	24	9	9	8	26	9	9	8	26
114	2014/10/23				0				0				0				0
115	2014/10/24				0				0				0				0
116	2014/10/25				0				0				0				0
117	2014/10/26				0				0				0				0
118	2014/10/27				0				0				0				0
119	2014/10/28				0				0				0				0
120	2014/10/29	10	10	9	29	9	8	7	24	9	9	8	26	9	9	8	26
121	2014/10/30				0				0				0				0
122	2014/10/31				0				0				0				0
123	2014/11/01				0				0				0				0
124	2014/11/02				0				0				0				0
125	2014/11/03				0				0				0				0
126	2014/11/04				0				0				0				0
127	2014/11/05	11	10	8	29	9	8	7	24	9	9	8	26	9	9	8	26
128	2014/11/06				0				0				0				0
129	2014/11/07				0				0				0				0
130	2014/11/08				0				0				0				0
131	2014/11/09				0				0				0				0
132	2014/11/10				0				0				0				0
133	2014/11/11				0				0				0				0
134	2014/11/12				0				0				0				0
135	2014/11/13	11	10	9	30	10	8	7	25	9	9	8	26	9	10	8	27
136	2014/11/14				0				0				0				0
137	2014/11/15				0				0				0				0
138	2014/11/16				0				0				0				0
139	2014/11/17				0				0				0				0
140	2014/11/18				0				0				0				0
141	2014/11/19	11	10	9	30	10	8	7	25	9	9	8	26	9	10	9	28
FINAL SCORE					30				25				26				28

	Fresh	Early Decomposition	Advanced Decomposition	Skeletonisation	Total
CFDS/O-1	8	49	55	29	142
CFDS/O-2	8	63	70	0	142
CFDS/C-1	10	47	84	0	142
CFDS/C-2	10	47	77	7	142

Stage	Min Value	Max Value
Fresh	3	3
Early	6	16
Advanced	19	25
Skeletonisation	27	35

Appendix A4.8b - Raw TBS data for S-2015

		CFDS/O-1 TBS				CFDS/O-2 TBS				CFDS/C-1 TBS				CFDS/C-2 TBS			
Day	**Date**	**H&N**	**Trunk**	**Limbs**	**Total**	**H&N**	**Trunk**	**Limbs**	**Total**	**H&N**	**Trunk**	**Limbs**	**Total**	**H&N**	**Trunk**	**Limbs**	**Total**
0	2015/01/13	1	1	1	3	1	1	1	3	1	1	1	3	1	1	1	3
1	2015/01/14	1	1	1	3	1	1	1	3	1	1	1	3	1	1	1	3
2	2015/01/15	5	3	3	11	5	3	2	10	5	3	3	11	4	3	2	9
3	2015/01/16	5	4	3	12	5	5	3	13	5	4	3	12	4	3	2	9
4	2015/01/17	5	4	3	12	5	5	3	13	5	4	3	12	4	3	3	10
5	2015/01/18	5	4	3	12	5	5	3	13	5	4	3	12	5	3	3	11
6	2015/01/19	5	4	3	12	5	5	3	13	5	4	3	12	5	4	3	12
7	2015/01/20	6	4	4	14	7	6	4	17	6	4	3	13	5	4	3	12
8	2015/01/21	6	4	4	14	7	6	5	18	6	4	4	14	5	4	3	12
9	2015/01/22	6	4	4	14	7	6	5	18	6	4	4	14	6	4	4	14
10	2015/01/23	7	4	4	15	7	6	5	18	6	4	4	14	6	6	4	16
11	2015/01/24	7	4	4	15	7	6	5	18	7	4	4	15	7	6	5	18
12	2015/01/25	7	6	5	18	7	6	5	18	7	5	4	16	7	6	5	18
13	2015/01/26	7	6	5	18	7	6	5	18	7	6	5	18	8	6	5	19
14	2015/01/27	7	6	5	18	7	6	5	18	7	6	5	18	8	6	5	19
15	2015/01/28	7	6	5	18	7	6	5	18	7	6	5	18	8	6	5	19
16	2015/01/29				0				0				0				0
17	2015/01/30	7	6	5	18	9	8	7	24	7	6	5	18	8	6	5	19
18	2015/01/31				0				0				0				0
19	2015/02/01	9	6	5	20	9	8	7	24	8	6	5	19	8	6	5	19
20	2015/02/02	9	6	5	20	9	8	7	24	8	6	5	19	8	6	5	19
21	2015/02/03	9	6	5	20	9	8	7	24	8	6	5	19	8	6	5	19
22	2015/02/04	9	6	5	20	9	8	7	24	8	6	5	19	8	7	5	20
23	2015/02/05	9	6	5	20	9	8	7	24	8	6	5	19	9	7	5	21
24	2015/02/06	9	6	5	20	9	8	7	24	8	6	5	19	9	7	5	21
25	2015/02/07				0				0				0				0
26	2015/02/08	9	6	5	20	9	8	7	24	9	8	5	22	9	6	5	20
27	2015/02/09	9	6	5	20	9	8	7	24	9	8	7	24	9	6	7	22
28	2015/02/10	9	6	5	20	9	8	7	24	9	8	7	24	9	6	7	22
29	2015/02/11				0				0				0				0
30	2015/02/12	9	6	5	20	9	8	7	24	9	8	7	24	9	6	7	22
31	2015/02/13				0				0				0				0
32	2015/02/14	9	6	7	22	9	8	7	24	9	8	7	24	9	6	7	22
33	2015/02/15				0				0				0				0
34	2015/02/16				0				0				0				0
35	2015/02/17	9	6	7	22	9	8	7	24	9	8	7	24	9	6	7	22
36	2015/02/18				0				0				0				0
37	2015/02/19				0				0				0				0
38	2015/02/20	9	6	7	22	9	8	7	24	9	8	7	24	9	6	7	22
39	2015/02/21				0				0				0				0
40	2015/02/22				0				0				0				0
41	2015/02/23				0				0				0				0
42	2015/02/24	9	6	7	22	9	8	7	24	9	8	7	24	9	6	7	22
43	2015/02/25				0				0				0				0
44	2015/02/26				0				0				0				0
45	2015/02/27	9	6	7	22	11	8	7	26	9	8	7	24	9	6	7	22
46	2015/02/28				0				0				0				0
47	2015/03/01				0				0				0				0
48	2015/03/02	9	6	7	22	11	10	8	29	9	8	7	24	9	6	7	22
49	2015/03/03				0				0				0				0
50	2015/03/04				0				0				0				0
51	2015/03/05	9	6	7	22	11	10	8	29	9	8	7	24	9	8	8	25
52	2015/03/06				0				0				0				0
53	2015/03/07				0				0				0				0
54	2015/03/08	9	6	7	22	11	10	8	29	9	9	7	25	9	8	8	25
55	2015/03/09				0				0				0				0
56	2015/03/10				0				0				0				0
57	2015/03/11	9	6	7	22	12	10	9	31	9	9	7	25	9	8	8	25
58	2015/03/12				0				0				0				0
59	2015/03/13				0				0				0				0
60	2015/03/14				0				0				0				0
61	2015/03/15	9	6	7	22				0	9	9	7	25	9	8	8	25
62	2015/03/16				0				0				0				0
63	2015/03/17				0				0				0				0
64	2015/03/18	9	6	7	22				0				0	9	8	8	25
65	2015/03/19				0				0				0				0
66	2015/03/20				0				0				0				0
67	2015/03/21	9	8	7	24				0				0	10	8	8	26
68	2015/03/22				0				0				0				0
69	2015/03/23				0				0				0				0
70	2015/03/24	9	8	8	25				0				0	10	8	8	26
71	2015/03/25				0				0				0				0
72	2015/03/26				0				0				0				0
73	2015/03/27				0				0				0				0
74	2015/03/28				0				0				0				0
75	2015/03/29				0				0				0				0
76	2015/03/30	9	9	8	26				0				0	10	8	8	26
FINAL SCORE					**26**				**31**				**25**				**26**

Original pages destroyed by water

	Fresh	Early Decomposition	Advanced Decomposition	Skeletonisation	**Total**
CFDS/O-1	2	17	58	0	**77**
CFDS/O-2	2	15	31	29	**77**
CFDS/C-1	2	17	58	0	**77**
CFDS/C-2	2	11	64	0	**77**

Stage	**Min Value**	**Max Value**
Fresh	3	3
Early	6	16
Advanced	19	25
Skeletonisation	27	35

Appendix A4.8c - Raw TBS data for W-2015

Day	Date	CFDS/O-1 TBS H&N	Trunk	Limbs	Total	CFDS/O-2 TBS H&N	Trunk	Limbs	Total	CFDS/C-1 TBS H&N	Trunk	Limbs	Total	CFDS/C-2 TBS H&N	Trunk	Limbs	Total
0	2015/07/06	1	1	1	3	1	1	1	3	1	1	1	3	1	1	1	3
1	2015/07/07	1	1	1	3	2	2	2	6	1	1	1	3	2	2	2	6
2	2015/07/08	1	1	1	3	2	2	2	6	1	1	1	3	2	3	2	7
3	2015/07/09	2	2	2	6	2	2	2	6	2	2	1	5	2	3	2	7
4	2015/07/10	2	2	2	6	2	3	2	7	2	3	2	7	2	3	2	7
5	2015/07/11	2	3	2	7	3	3	3	9	2	3	2	7	3	4	2	9
6	2015/07/12	2	2	2	6	3	4	3	10	2	4	2	8	3	4	2	9
7	2015/07/13	2	2	2	6	3	4	3	10	2	4	2	8	3	4	2	9
8	2015/07/14	2	2	2	6	3	4	3	10	2	4	2	8	3	4	3	10
9	2015/07/15	3	3	3	9	3	4	3	10	2	4	2	8	3	4	3	10
10	2015/07/16	3	3	3	9	3	4	3	10	2	4	2	8	4	4	3	11
11	2015/07/17	3	4	3	10	3	4	3	10	2	4	2	8	3	5	3	11
12	2015/07/18				0				0				0				0
13	2015/07/19	4	4	3	11	5	4	3	12	4	3	3	10	3	5	3	11
14	2015/07/20	5	4	3	12	5	4	3	12	4	4	3	11	4	5	3	12
15	2015/07/21	5	4	3	12	5	4	3	12	4	5	3	12	4	5	3	12
16	2015/07/22	5	4	3	12	5	4	3	12	4	5	3	12	5	5	3	13
17	2015/07/23	5	4	3	12	5	4	3	12				0				0
18	2015/07/24	5	4	3	12	5	4	3	12	5	5	3	13	5	4	3	12
19	2015/07/25	5	4	3	12	5	4	3	12	5	5	3	13	5	4	3	12
20	2015/07/26				0				0				0				0
21	2015/07/27	5	4	3	12	5	4	3	12	5	5	3	13	5	5	3	13
22	2015/07/28	5	4	3	12	5	4	3	12	5	5	3	13	5	5	3	13
23	2015/07/29	5	4	3	12	5	4	3	12	5	5	3	13	5	5	3	13
24	2015/07/30	5	4	3	12	5	4	3	12	5	5	3	13	5	5	3	13
25	2015/07/31	5	5	3	13	5	4	3	12	5	5	3	13	5	5	3	13
26	2015/08/01	5	5	3	13	5	4	3	12	5	5	3	13	5	5	3	13
27	2015/08/02				0				0				0				0
28	2015/08/03	5	5	3	13	5	4	3	12	5	5	3	13	5	5	3	13
29	2015/08/04	5	5	3	13	5	4	3	12	5	5	3	13	6	5	3	14
30	2015/08/05	5	5	3	13	5	4	3	12	5	5	3	13	6	5	3	14
31	2015/08/06	5	5	3	13	5	4	3	12	5	5	3	13	6	5	4	15
32	2015/08/07	5	5	3	13	5	4	3	12	5	5	3	13	6	5	4	15
33	2015/08/08	6	5	5	16	5	4	4	13	5	5	3	13	6	5	4	15
34	2015/08/09	6	5	4	15	5	4	5	14	6	5	3	14	6	5	4	15
35	2015/08/10				0				0				0				0
36	2015/08/11	6	5	4	15	6	4	5	15	6	6	4	16	6	5	4	15
37	2015/08/12	6	5	4	15	6	4	5	15	6	6	4	16	6	5	4	15
38	2015/08/13	6	5	4	15	6	4	5	15				0				0
39	2015/08/14	6	5	4	15	6	4	5	15	5	6	4	15	6	5	4	15
40	2015/08/15				0				0				0				0
41	2015/08/16				0				0				0				0
42	2015/08/17	6	6	4	16	6	4	5	15	6	6	4	16	6	5	5	16
43	2015/08/18				0				0				0				0
44	2015/08/19	6	6	4	16	6	4	5	15	6	6	4	16	6	5	5	16
45	2015/08/20				0				0				0				0
46	2015/08/21	6	6	4	16	6	4	5	15	6	6	4	16	6	5	5	16
47	2015/08/22	6	6	4	16	6	4	5	15	5	6	5	16	6	5	5	16
48	2015/08/23	6	6	5	17	6	4	5	15	6	6	5	17	7	5	5	17
49	2015/08/24	6	6	5	17	6	4	5	15	6	6	5	17	7	5	5	17
50	2015/08/25	6	6	5	17	6	4	5	15	6	6	5	17	7	5	5	17
51	2015/08/26	6	6	5	17	6	4	5	15	6	6	5	17	7	6	5	18
52	2015/08/27	6	6	5	17	6	4	5	15				0				0
53	2015/08/28	6	6	5	17	6	4	5	15	6	6	5	17	7	7	6	20
54	2015/08/29				0				0				0				0
55	2015/08/30	6	6	5	17	6	4	5	15	6	7	5	18	7	7	6	20
56	2015/08/31	6	7	5	18	6	4	5	15	6	6	5	17	7	7	6	20
57	2015/09/01	7	6	5	18	7	4	5	16	7	7	5	19	7	7	6	20
58	2015/09/02				0				0				0				0
59	2015/09/03	7	6	5	18	7	4	5	16	7	7	5	19	7	7	6	20
60	2015/09/04	7	7	5	19	7	4	5	16	7	7	5	19	7	7	6	20
61	2015/09/05	7	7	5	19	7	4	5	16	7	7	5	19	7	7	6	20
62	2015/09/06	7	7	5	19	7	4	5	16	7	7	5	19	7	7	6	20
63	2015/09/07	7	7	5	19	7	4	5	16	7	7	5	19	7	7	6	20
64	2015/09/08	7	7	5	19	7	4	5	16	7	7	5	19	7	7	6	20
65	2015/09/09	7	7	5	19	7	4	5	16	7	7	5	19	7	7	6	20
66	2015/09/10	7	7	5	19	7	4	5	16	7	7	5	19	7	7	6	20
67	2015/09/11	7	7	5	19	7	4	5	16	7	7	5	19	7	7	6	20
68	2015/09/12	7	7	5	19	7	4	5	16	7	7	5	19	7	7	6	20
69	2015/09/13	7	7	5	19	7	4	5	16	7	7	5	19	7	7	6	20
70	2015/09/14	7	7	5	19	7	5	5	17	7	7	5	19	7	7	6	20
71	2015/09/15				0				0	7	7	5	19	8	7	6	21
72	2015/09/16	7	7	5	19	7	5	5	17	7	7	5	19	7	7	6	20
73	2015/09/17	7	7	5	19	7	5	5	17	7	7	5	19	8	7	8	23
74	2015/09/18	7	7	5	19	7	5	5	17	7	7	5	19	8	7	8	23
75	2015/09/19	7	7	5	19	7	6	5	18	7	7	6	20	8	7	8	23
76	2015/09/20	7	7	5	19	7	6	5	18	7	7	6	20	8	7	8	23
77	2015/09/21	7	8	6	21	7	6	6	19	8	7	6	21	9	8	8	25
78	2015/09/22	7	8	6	21	7	6	6	19	8	7	6	21	9	8	8	25
79	2015/09/23	7	8	6	21	7	6	6	19	8	7	6	21	9	8	8	25
80	2015/09/24	7	8	6	21	7	6	6	19	8	7	6	21	9	8	8	25
81	2015/09/25	7	8	6	21	7	6	6	19	8	7	6	21	9	8	8	25
82	2015/09/26	8	7	6	21	7	6	6	19	8	7	6	21	9	8	8	25
83	2015/09/27				0				0				0				0
84	2015/09/28	8	7	6	21	7	6	6	19	8	7	6	21	9	8	8	25
85	2015/09/29	8	7	6	21	7	6	6	19	8	7	6	21	9	8	8	25
86	2015/09/30	8	7	6	21	7	6	6	19	8	7	6	21	9	8	8	25
87	2015/10/01	8	7	6	21	7	7	6	20	8	8	6	22	8	7	8	23
88	2015/10/02	8	7	6	21	7	7	6	20	8	7	6	21	8	7	8	23
89	2015/10/03	8	7	6	21	7	7	6	20	8	7	6	21	8	9	8	25
90	2015/10/04	8	7	6	21	7	7	6	20	8	7	6	21	8	9	8	25
91	2015/10/05	8	8	6	22	7	7	6	20	8	7	6	21	9	8	8	25
92	2015/10/06	9	8	6	23	7	7	6	20	8	7	6	21	8	9	8	25
93	2015/10/07	9	8	6	23	8	7	6	21	9	7	6	22	9	9	8	26
94	2015/10/08	9	8	6	23	8	7	6	21	8	7	6	21	9	9	8	26
95	2015/10/09	9	9	7	25	8	7	6	21	8	7	6	21	9	9	8	26
96	2015/10/10	9	8	7	24	8	7	6	21	9	8	6	23	9	9	8	26
97	2015/10/11				0				0				0				0
98	2015/10/12	9	8	7	24	8	7	6	21	8	7	6	21	8	9	8	25
99	2015/10/13	9	8	8	25	8	7	6	21	8	7	6	21	9	9	8	26
100	2015/10/14	9	8	8	25	8	7	6	21	8	7	6	21	9	9	8	26
101	2015/10/15	9	9	8	26	8	7	6	21	8	8	6	22	9	9	8	26
102	2015/10/16	9	10	8	27	8	7	6	21	8	7	6	21	8	9	8	25
103	2015/10/17	9	10	8	27	8	7	6	21	8	7	6	21	9	9	8	26
104	2015/10/18				0				0				0				0
105	2015/10/19				0				0				0				0
106	2015/10/20	9	10	8	27	8	7	6	21	8	7	6	21	8	9	8	25
107	2015/10/21				0				0				0				0
108	2015/10/22				0				0				0				0
109	2015/10/23	9	9	8	26	8	7	6	21	8	7	6	21	9	9	8	26
110	2015/10/24				0				0				0				0
111	2015/10/25				0				0				0				0
112	2015/10/26	9	10	9	28	9	7	6	22	9	8	6	23	8	9	8	25
113	2015/10/27				0				0				0				0
114	2015/10/28				0				0				0				0
115	2015/10/29	9	10	9	28	9	7	6	22	9	8	7	24	9	9	8	26
116	2015/10/30				0				0				0				0
117	2015/10/31				0				0				0				0
118	2015/11/01				0				0				0				0
119	2015/11/02				0				0				0				0
120	2015/11/03				0				0				0				0
121	2015/11/04	9	11	10	30	9	7	7	23	9	8	7	24	9	9	8	26
122	2015/11/05				0				0				0				0
123	2015/11/06				0				0				0				0
124	2015/11/07	11	10	9	30	9	9	8	26	9	8	7	24	9	9	8	26
125	2015/11/08				0				0				0				0
126	2015/11/09				0				0				0				0
127	2015/11/10	11	10	9	30	9	9	8	26	9	8	7	24	9	9	8	26
128	2015/11/11				0				0				0				0
129	2015/11/12				0				0				0				0
130	2015/11/13				0				0				0				0
131	2015/11/14				0				0				0				0
132	2015/11/15				0				0				0				0
133	2015/11/16	11	11	9	31	9	9	8	26	9	8	7	24	10	9	8	27
134	2015/11/17				0				0				0				0
135	2015/11/18				0				0				0				0
136	2015/11/19	11	11	9	31	9	9	8	26	9	8	7	24	11	10	9	30
137	2015/11/20				0				0				0				0
138	2015/11/21				0				0				0				0
139	2015/11/22				0				0				0				0
140	2015/11/23				0				0				0				0
141	2015/11/24				0				0				0				0
FINAL SCORE					**31**				**26**				**24**				**30**
146	2015/11/29	11	10	9	30	9	9	8	26	9	10	8	27	12	10	9	31

NOTE: CFDS/O/C-1 entered skeletonisation on Day 146. Season is truncated to Day 141 for continuity with previous winter.

	Fresh	Early Decomposition	Advanced Decomposition	Skeletonisation	Total
CFDS/O-1	3	57	42	40	**142**
CFDS/O-2	1	76	65	0	**142**
CFDS/C-1	4	53	85	0	**142**
CFDS/C-2	1	52	80	9	**142**

Stage	Min Value	Max Value
Fresh	3	3
Early	6	16
Advanced	19	25
Skeletonisation	27	35

Appendix A4.8d - Raw TBS data for S-2016

		CFDS/O-1 TBS				CFDS/O-2 TBS				CFDS/C-1 TBS				CFDS/C-2 TBS			
Day	Date	H&N	Trunk	Limbs	Total	H&N	Trunk	Limbs	Total	H&N	Trunk	Limbs	Total	H&N	Trunk	Limbs	Total
0	2016/01/13	1	1	1	3	1	1	1	3	1	1	1	3	1	1	1	3
1	2016/01/14	1	2	1	4	2	4	2	8	2	2	1	5	2	2	1	5
2	2016/01/15	5	4	3	12	5	4	3	12	5	4	3	12	5	4	3	12
3	2016/01/16	6	4	4	14	6	5	4	15	6	4	3	13	6	4	3	13
4	2016/01/17	6	5	4	15	7	6	5	18	6	4	4	14	6	4	4	14
5	2016/01/18	7	6	4	17	7	6	5	18	6	5	4	15	6	4	4	14
6	2016/01/19	7	6	5	18	7	6	5	18	7	5	5	17	7	5	5	17
7	2016/01/20	7	6	6	19	7	6	5	18	7	6	5	18	7	6	5	18
8	2016/01/21	7	6	6	19	7	6	5	18	7	6	5	18	7	6	5	18
9	2016/01/22	7	6	6	19	7	6	5	18	8	6	6	20	7	6	5	18
10	2016/01/23				0				0				0				0
11	2016/01/24	7	6	6	19	7	6	5	18	8	6	6	20	8	6	6	20
12	2016/01/25	7	6	6	19	7	6	5	18	8	6	6	20	8	7	6	21
13	2016/01/26	7	6	6	19	7	6	5	18	8	7	6	21	8	7	6	21
14	2016/01/27	7	6	6	19	7	6	5	18	8	7	6	21	8	7	6	21
15	2016/01/28	7	6	6	19	7	6	5	18	8	7	6	21	8	7	6	21
16	2016/01/29	7	6	6	19	7	6	5	18	8	7	6	21	8	7	6	21
17	2016/01/30	7	6	6	19	7	6	5	18	8	7	6	21	8	7	6	21
18	2016/01/31	7	6	6	19	7	6	5	18	8	6	6	20	8	7	6	21
19	2016/02/01	7	6	6	19	7	6	5	18	8	6	6	20	8	7	6	21
20	2016/02/02	7	6	6	19	7	6	5	18	9	6	6	21	9	7	6	22
21	2016/02/03	7	6	7	20	9	6	6	21	9	7	6	22	9	7	7	23
22	2016/02/04	7	6	6	19	9	6	7	22	9	6	6	21	8	7	6	21
23	2016/02/05	7	6	7	20	9	6	7	22	9	6	7	22	9	8	7	24
24	2016/02/06	7	6	7	20	9	7	7	23	9	6	7	22	9	8	7	24
25	2016/02/07	7	6	7	20	9	8	7	24	10	6	7	23	9	8	7	24
26	2016/02/08	9	6	7	22	9	8	7	24	10	6	7	23	9	8	7	24
27	2016/02/09	9	6	7	22	9	8	8	25	11	6	8	25	9	8	7	24
28	2016/02/10	9	6	7	22	9	8	8	25	11	6	8	25	9	8	8	25
29	2016/02/11	9	6	7	22	9	8	8	25	11	6	8	25	9	8	8	25
30	2016/02/12	9	8	7	24	9	8	8	25	11	6	8	25	9	8	8	25
31	2016/02/13	9	8	7	24	9	8	8	25	11	6	8	25	9	8	8	25
32	2016/02/14	9	8	7	24	9	8	8	25	11	6	8	25	9	8	8	25
33	2016/02/15	9	6	7	22	9	8	9	26	11	8	8	27	9	8	8	25
34	2016/02/16	9	6	7	22	9	8	9	26	11	8	8	27	9	8	8	25
35	2016/02/17	9	6	7	22	9	8	9	26	11	8	8	27	9	8	8	25
36	2016/02/18	9	8	7	24	9	8	9	26	11	8	8	27	9	8	8	25
37	2016/02/19				0				0				0				0
38	2016/02/20				0				0				0				0
39	2016/02/21	9	8	7	24	10	8	9	27	12	8	9	29	9	8	9	26
40	2016/02/22				0				0				0				0
41	2016/02/23				0				0				0				0
42	2016/02/24	9	8	7	24	10	8	9	27	12	8	9	29	9	8	9	26
43	2016/02/25				0				0				0				0
44	2016/02/26				0				0				0				0
45	2016/02/27	9	8	7	24	11	10	9	30	12	8	9	29	9	8	9	26
46	2016/02/28				0				0				0				0
47	2016/02/29				0				0				0				0
48	2016/03/01	9	8	8	25	11	10	9	30	12	8	9	29	9	8	9	26
49	2016/03/02				0				0				0				0
50	2016/03/03				0				0				0				0
51	2016/03/04	9	8	8	25	11	10	9	30	12	8	9	29	9	8	9	26
52	2016/03/05				0				0				0				0
53	2016/03/06				0				0				0				0
54	2016/03/07	9	8	8	25	12	9	9	30	12	8	9	29	9	8	9	26
55	2016/03/08				0				0				0				0
56	2016/03/09				0				0				0				0
57	2016/03/10	9	8	8	25	12	10	9	31	12	8	9	29	10	9	9	28
58	2016/03/11				0				0				0				0
59	2016/03/12				0				0				0				0
60	2016/03/13	9	8	8	25	11	10	9	30	12	8	9	29	10	9	9	28
61	2016/03/14				0				0				0				0
62	2016/03/15				0				0				0				0
63	2016/03/16	9	8	8	25	11	10	9	30	12	8	9	29	10	9	9	28
64	2016/03/17				0				0				0				0
65	2016/03/18				0				0				0				0
66	2016/03/19	9	8	8	25	11	10	9	30	12	8	9	29	10	9	9	28
67	2016/03/20				0				0				0				0
68	2016/03/21				0				0				0				0
69	2016/03/22	9	10	8	27	11	10	9	30	12	8	9	29	10	9	9	28
70	2016/03/23				0				0				0				0
71	2016/03/24				0				0				0				0
72	2016/03/25	9	10	8	27	11	10	9	30	12	9	9	30	10	9	9	28
73	2016/03/26				0				0				0				0
74	2016/03/27				0				0				0				0
75	2016/03/28	11	10	8	29	12	10	9	31	12	9	9	30	10	9	9	28
76	2016/03/29				0				0				0				0
FINAL SCORE					29				31				30				28

	Fresh	Early Decomposition	Advanced Decomposition	Skeletonisation	Total
CFDS/O-1	1	6	62	8	77
CFDS/O-2	1	20	18	38	77
CFDS/C-1	1	8	24	44	77
CFDS/C-2	1	10	46	20	77

Stage	Min Value	Max Value
Fresh	3	3
Early	6	16
Advanced	19	25
Skeletonisation	27	35

APPENDIX 5.1
Example of Source Code: Insect abundance & weather plots
****

```
#CONFIG
require(data.table)
require(tidyverse)
require(ggplot2)
require(readr)
require(dplyr)
require(tidyr)
require(grid)
require(gridExtra)
require(cowplot)

#INGEST WEATHER DATA
cfdsweather = read_delim('S-2016 CFDSC weather.csv', delim = ";")
str(cfdsweather, max.level = 1)

#RENAME VARS
cfdsweather = cfdsweather %>%
  rename(TEMP_24hr_MAX = ` TEMP_24hr_MAX`) %>%
  rename(TEMP_24hr_MIN = ` TEMP_24hr_MIN`) %>%
  rename(TEMP_day_MODE = ` TEMP_day_MODE`) %>%
  rename(TEMP_24hr_MEAN = ` TEMP_24hr_MEAN`) %>%
  rename(HUMIDITY_24hr_MEAN = ` HUMIDITY_24hr_MEAN`) %>%
  rename(RAIN_24hr_TOTAL = ` RAIN_24hr_TOTAL`) %>%
  rename(SOLAR_day_MEAN = ` SOLAR_day_MEAN`) %>%
  rename(WINDSPEED_day_MEAN = ` WINDSPEED_day_MEAN`)

#INGEST INSECT DATA
cfds = read_delim('S-2016 CFDSC 2 R.csv', delim = ";")
str(cfds, max.level = 1)

#INGEST DECOMP DATA
decomp = read_delim('DecompStage S-2016 CFDSC 2.csv', delim = ";")
str(decomp, max.level = 1)

#GATHER INSECT DATA
cfds = gather(cfds, key = Species, value = value, -Date)
str(cfds)

cfdstemp = cfdsweather %>% select(Date, TEMP_24hr_MAX, TEMP_24hr_MIN,
TEMP_day_MODE, TEMP_24hr_MEAN)
cfdsrain = cfdsweather %>% select(Date, RAIN_24hr_TOTAL)
cfdshum = cfdsweather %>% select(Date, HUMIDITY_24hr_MEAN)
cfdssun = cfdsweather %>% select(Date, SOLAR_day_MEAN)
cfdswind = cfdsweather %>% select(Date, WINDSPEED_day_MEAN)

species_to_keep = c("Trogidae [A]","Staphylinidae [A]","Silphidae
[L]","Silphidae [A]",
                    "Scarabaeidae [A]","Histeridae [A]","Dermestidae (D.
```

```
maculatus) [L]",
                    "Dermestidae (D. maculatus) [A]","Cleridae (N. rufipes)
[A]",
                    "Sarcophagidae [A]","Piophilidae [A]","Muscidae
[A]","Calliphoridae (Lucilia) [A]",
                    "Calliphoridae (C. vicina) [A]","Calliphoridae (C.
marginalis) [A]",
                    "Calliphoridae (C. chloropyga) [A]","Calliphoridae (C.
albiceps) [A]")

#ASSIGN WEIGHTING TO INSECT DATA
cfdsreduced =
  cfds %>%
  filter(Species %in% species_to_keep) %>%
  group_by(Species) %>%
  mutate(wt = value) %>%
  ungroup() %>%
  left_join(cfdstemp, by = c('Date'))

#SPECIFY BREAKS AS A DATE VECTOR
datebreaksW2014 = seq(as.Date("2014/07/01"), as.Date("2014/11/19"), by="7 day")
datebreaksS2015 = seq(as.Date("2015/01/13"), as.Date("2015/03/30"), by="7 day")
datebreaksW2015 = seq(as.Date("2015/07/06"), as.Date("2015/11/24"), by="7 day")
datebreaksS2016 = seq(as.Date("2016/01/13"), as.Date("2016/03/29"), by="7 day")

#VIOLIN PLOT INSECT ABUNDANCE
dermestesL = expression(paste("Dermestidae (", italic("D. maculatus"), ") [L]"))
dermestesA = expression(paste("Dermestidae (", italic("D. maculatus"), ") [A]"))
cleridae = expression(paste("Cleridae (", italic("N. rufipes"), ") [A]"))
vicina = expression(paste("Calliphoridae (", italic("C. vicina"), ") [A]"))
marginalis = expression(paste("Calliphoridae (", italic("C. marginalis"), ")
[A]"))
chloropyga = expression(paste("Calliphoridae (", italic("C. chloropyga"), ")
[A]"))
albiceps = expression(paste("Calliphoridae (", italic("C. albiceps"), ") [A]"))

plot1 = ggplot(cfdsreduced, aes(x = Species, y = Date, weight  = wt)) +
  geom_violin(trim = TRUE, scale = "count", adjust=0.15, fill = "black") +
  theme_classic() +
  coord_flip() +
  ggtitle("S-2016 | CFDS/C-2") +
  theme(plot.title = element_text(hjust = 0.5, size = 36, margin = margin(t =
20, r = 0, b = 0, l = 00, unit = "pt")), #CENTRE TITLE
        axis.title.x = element_blank(), #REMOVE x-AXIS LABEL
        axis.title.y = element_text(size = 24), #ADJUST SIZE OF y-AXIS LABEL
        axis.text.y = element_text(size = 20)) + #ADJUST SIZE OF y-AXIS TICK
LABELS
  scale_y_date(breaks = datebreaksS2016) + #SPECIFIES DATE BREAKS
  theme(axis.text.x = element_blank()) + #REMOVE X-AXIS TICK LABELS
  scale_x_discrete(limits=c("Scarabaeidae [A]","Trogidae [A]","Staphylinidae
[A]","Silphidae [L]","Silphidae [A]",
                            "Histeridae [A]","Dermestidae (D. maculatus) [L]",
```

```
                            "Dermestidae (D. maculatus) [A]","Cleridae (N. 
rufipes) [A]",
                            "Sarcophagidae [A]","Piophilidae [A]","Muscidae 
[A]","Calliphoridae (Lucilia) [A]",
                            "Calliphoridae (C. vicina) [A]","Calliphoridae (C. 
marginalis) [A]",
                            "Calliphoridae (C. chloropyga) [A]","Calliphoridae 
(C. albiceps) [A]"), #SPECIFY ORDER OF TICKS ON Y-AXIS
                   labels=c("Scarabaeidae [A]","Trogidae [A]","Staphylinidae 
[A]","Silphidae [L]","Silphidae [A]",
                            "Histeridae [A]", dermestesL, dermestesA, cleridae,
                            "Sarcophagidae [A]","Piophilidae [A]","Muscidae 
[A]","Calliphoridae (Lucilia spp.) [A]",
                            vicina, marginalis, chloropyga, albiceps)) #SPECIFY 
LABELS OF TICKS ON Y-AXIS

#STACKED BAR PLOT DECOMP STAGE
plot6 = ggplot(decomp, aes(x = Carcass, y = Days, fill = factor(Stage, levels = 
c("Skeleton","AdvD","EarlyD","Fresh")))) +
  geom_bar(stat = "identity") +
  coord_flip() +
  theme_classic() +
  theme(axis.text.x = element_blank(), #REMOVE X-AXIS TICK LABELS
        legend.position = "bottom", #MOVE LEGEND
        axis.title.x = element_blank(), #REMOVE X-AXIS TITLE
        axis.title.y = element_blank(), #REMOVE Y-AXIS TITLE
        axis.text.y = element_text(size = 20), #ADJUST SIZE OF y-AXIS TICK 
LABELS
        legend.text = element_text(size = 20)) + #ADJUST SIZE OF LEGEND TEXT
  scale_fill_discrete(limits = c("Fresh","EarlyD","AdvD","Skeleton")) + #SPECIFY 
LEGEND ORDER
  guides(fill = guide_legend(title = NULL)) + #REMOVE LEGEND TITLE
  scale_x_discrete(labels = c("Decomposition Stage")) #SPECIFY LABEL OF Y-AXIS 
TICK

#LINE PLOT TEMP
plot2 = ggplot(cfdstemp, aes(Date)) +
  geom_line(aes(y = TEMP_24hr_MAX, colour = "TEMP_24hr_MAX"), size = 2) +
  geom_line(aes(y = TEMP_24hr_MIN, colour = "TEMP_24hr_MIN"), size = 2) +
  geom_line(aes(y = TEMP_day_MODE, colour = "TEMP_day_MODE"), size = 2) +
  geom_line(aes(y = TEMP_24hr_MEAN, colour = "TEMP_24hr_MEAN"), size = 2) +
  theme_classic() +
  scale_x_date(breaks = datebreaksS2016) + #SPECIFIES DATE BREAKS
  ylab("Temperature (°C)") + #SPECIFY Y-AXIS LABEL
  ylim(-2,43) + #SPECIFY LIMITS OF Y-AXIS
  theme(legend.position = "bottom", #MOVE LEGEND
        legend.text = element_text(size = 20), #ADJUST SIZE OF LEGEND TEXT
        legend.title = element_blank(), #REMOVE LEGEND HEADER
        axis.text.x = element_blank(), #REMOVE X-AXIS TICK LABELS
        axis.title.x = element_blank(), #REMOVE X-AXIS TITLE
        axis.title.y = element_text(size = 24), #ADJUST SIZE OF y-AXIS LABEL
        axis.text.y = element_text(size = 20)) #ADJUST SIZE OF y-AXIS TICK
```

```
LABELS

#BAR PLOT RAIN
plot3 = ggplot(data = cfdsrain, aes(y=RAIN_24hr_TOTAL, x=Date)) +
  geom_bar(stat = "identity") +
  theme_classic() +
  scale_x_date(breaks = datebreaksS2016) + #SPECIFIES DATE BREAKS
  ylab("24hr Rainfall (mm)") + #SPECIFY Y-AXIS LABEL
  ylim(0,34) + #SPECIFY Y-AXIS LIMITS
  theme(axis.text.x = element_blank(), #REMOVE X-AXIS TICK LABELS
        axis.title.x = element_blank(), #REMOVE X-AXIS TITLE
        axis.title.y = element_text(size = 24), #ADJUST SIZE OF y-AXIS LABEL
        axis.text.y = element_text(size = 20)) #ADJUST SIZE OF y-AXIS TICK
LABELS

#BAR PLOT SOLAR
plot4 = ggplot(data = cfdssun, aes(y=SOLAR_day_MEAN, x=Date)) +
  geom_bar(stat = "identity") +
  theme_classic() +
  scale_x_date(breaks = datebreaksS2016) + #SPECIFIES DATE BREAKS
  ylab(expression(atop("Mean Solar Radiation",
                       paste("(W.", m^{-2}, ")")))) + #SPLIT y-AXIS LABEL INTO
TWO LINES
  ylim(0,655) +
  theme(axis.text.x = element_blank(), #REMOVE X-AXIS TICK LABELS
        axis.title.x = element_blank(), #REMOVE X-AXIS TITLE
        axis.title.y = element_text(size = 24, margin = margin(t = 0, r = 0, b =
0, l = 20, unit = "pt")), #ADJUST SIZE OF y-AXIS LABEL
        axis.text.y = element_text(size = 20)) #ADJUST SIZE OF y-AXIS TICK
LABELS

#LINE PLOT WIND
plot5 = ggplot(data = cfdswind, aes(y=WINDSPEED_day_MEAN, x=Date)) +
  geom_line(size = 2) +
  theme_classic() +
  ylab(expression(atop("Mean Daytime Wind",
                       paste("speed ( ", m.s^{-1}, ")")))) + #SPLIT y-AXIS LABEL
INTO TWO LINES
  scale_x_date(breaks = datebreaksS2016) + #SPECIFIES DATE BREAKS
  ylim(0,30) + #SPECIFY Y-AXIS LIMITS
  theme(axis.text.x = element_text(angle = 30, hjust = 1, size = 20), #ADJUSTS
ANGLE OF DISPLAY & SIZE FOR DATES
        axis.title.x = element_text(size = 24, margin = margin(t = 20, r = 0, b
= 20, l = 0, unit = "pt")), #ADD SPACE BELOW LABEL
        axis.title.y = element_text(size = 24, margin = margin(t = 0, r = 0, b =
0, l = 20, unit = "pt")), #ADJUST SIZE OF y-AXIS LABEL
        axis.text.y = element_text(size = 20)) #ADJUST SIZE OF y-AXIS TICK
LABELS)

#GRID PLOT
plot_grid(plot1, plot6, plot2, plot3, plot4, plot5, align = "v", nrow = 6,
rel_heights = c(0.70, 0.085, 0.18, 0.155, 0.155, 0.225))
```

Appendix 5.2
Detailed analysis of insect populations

CYCLE 1 | W-2014

CFDS/O-1 VS CFDS/O-2

Similarities:

- Absent: *C. marginalis*, Sarcophagidae, Scarabaeidae, Staphylinidae.
- Blow fly and Piophilidae activity only begins with onset of early decomp and tapers off with onset of advanced decomp (except Lucilia which persists a into advanced decomp).
- Succession of *C. albiceps*, *C. chloropyga*, Lucilia, Muscidae, Piophilidae, and Histeridae similar, with comparable abundances.
- *C. vicina* occurrence sporadic.
- *D. maculatus* (L) activity almost entirely confined to advanced decomp.
- Trogidae, Silphidae (L & A) and *D. maculatus* (A) activity almost entirely confined to early decomp.
- Apparent rain suppression of blow fly populations. Possible wind suppression too, but effect is very minor.

Differences:

- Greater abundance of *N. rufipes* at CFDS/O-2.
- Greater abundance of *D. maculatus* adults, Silphidae (L & A), and Trogidae at CFDS/O-2, but lower abundance for the *D. maculatus* larvae compared to CFDS/O-1.

CFDS/C-1 VS CFDS/C-2

Similarities:

- Absent: *C. marginalis*, Scarabaeidae.
- Succession of *C. albiceps*, *C. chloropyga*, *C. vicina*, Lucilia, Muscidae, Piophilidae, Histeridae, and Trogidae similar, with comparable abundances (minor differences).
- Dermestid larvae arrive at the same time.

Differences:

- Sarcophagidae absent at CFDS/C-2, and Staphylinidae absent at CFDS/C-1.
- Silphid larvae precede adult arrival at CFDS/C-1, but arrive at same time at CFDS/C-2.
- Greater abundance of Silphid adults and Dermestid larvae at CFDS/C-2.
- Cleridae present for longer on CFDS/C-1.
- Dermestid adults present earlier on CFDS/C-1 than CFDS/C-2, but with comparable (and sporadic) abundances.

COMPARISON (ALL)

Similarities:

- Absent: *C. marginalis*, Scarabaeidae.
- Trogidae present for similar amounts of time.
- *C. vicina* first to arrive, shortly followed by Lucilia.
- *C. albiceps* succession patterns and abundances similar between both habitats.
- Blow fly populations largely confined to fresh and early decomp, with small numbers persisting into the early parts of advanced decomposition.
- Lucilia populations present for similar lengths of time.
- Muscidae a rare occurrence.
- Some apparent wind suppression observed, but only on Lucilia, and only in CFDS/O.
- Freezing events don't appear to have any noticeable effect on insect abundance/succession.
- Clerid abundance drops during periods of cooler temperatures and rain (i.e. cold fronts).

Differences:

- Sarcophagidae and Staphylinidae observed in CFDS/C, but not CFDS/O.
- Trogidae present in higher abundances in CFDS/C compared to CFDS/O.
- *C. vicina* present in notably higher abundances in CFDS/C, and for greater durations.
- Piophilidae arrives much earlier at CFDS/C carcasses than at CFDS/O carcasses and is present in greater numbers for longer.
- Only emergence event observed was at CFDS/C-1.
- *C. chloropyga* abundances crest earlier in CFDS/O.
- Lucilia populations considerably larger in CFDS/O.
- Clerids more abundant in advanced decomp than early decomp in CFDS/C. Opposite true for CFDS/O.

- Dermestid larvae confined to skeletonisation in CFDS/C.
- Histerids arrive much earlier in CFDS/O than CFDS/C; in latter, they are also confined to advanced decomp and skeletonisation.
- Silphids arrive earlier in CFDS/O than CFDS/C, but persist much longer in CFDS/C.
- Wind suppression not observed in CFDS/C.
- Apparent rain suppression markedly less evident in CFDS/C compared to CFDS/O (lower rainfall amounts?)

CYCLE 2 | S-2015

CFDS/O-1 VS CFDS/O-2

Similarities:

- Both colonised on Day 0 by Lucilia, and on Day 1 by *C. albiceps*.
- Both have absence of *C. chloropyga*, *C. vicina*, Scarabaeidae, Silphidae, Staphylinidae, and Trogidae.
- Rainfall appears to have a suppression effect on *N. rufipes* and *D. maculatus* populations, and possibly on *C. albiceps* and Lucilia populations (though these could also be attributable to decomp progression), but mostly in earlier stages. Populations rebound post-rainfall.
- *D. maculatus* larvae succession pattern almost identical, despite slight differences in adult pattern.
- All beetle populations, both larval and adult, increase dramatically after second rainfall event.
- Hot days ($T_{24hr\ MAX} \geq 32°C$) and cold days ($T_{DAY\ MIN} < 7°C$) don't appear to have any effect on abundance for any species.
- Windy days (daytime windspeed/gust measures of 32.19-48.28 $km.h^{-1}$) appear to have a suppressive effect on initial colonisation blow fly adult populations. Populations rebound when wind dies down.
- Blow fly populations taper towards end of early decomp.

Differences:

- Absence of *C. marginalis* at CFDS/O-2.
- Longer period of *C. albiceps* activity at CFDS/O-1, with later and larger emergence event.
- Overall, CFDS/O-1 has greater insect activity than CFDS/O-2, and for longer.

- Beetle activity began in early decomp at CFDS/O-2, but only with the onset of advanced decomp at CFDS/O-1.
- Beetle populations persisted until the end of the cycle at CFDS/O-1, but terminated at CFDS/O-2 2.5 weeks before the end of the cycle.

CFDS/C-1 VS CFDS/C-2

Similarities:

- Some apparent wind suppression of blow fly colonisation activity, but less pronounced than CFDS/O.
- Some apparent rainfall suppression of insect activity, but, again, less pronounced than CFDS/O.
- Absence of *C. chloropyga*, *C. vicina*, Scarabaeidae, Staphylinidae, and Trogidae.

Differences:

- Period of insect activity terminates much sooner at CFDS/C-2 compared to CFDS/C-1.
- Relative abundances are slightly higher at CFDS/C-1 than at CFDS/C-2.
- Absence of Silphidae larvae at CFDS/C-2.

COMPARISON (ALL)

Similarities:

- The period of insect activity was shorter at one carcass than at the other (CFDS/O-1 vs CFDS/O-2, and CFDS/C-2 vs CFDS/C-1).
- Generally, rain appears to suppress insect activity, but this effect is largely confined to the early stages of decomposition. It is less prominent in the CFDS/C than the CFDS/O.
- Piophilidae activity upticks only after the transition into advanced decomp.
- Absence of *C. chloropyga*, *C. vicina*, Scarabaeidae, Staphylinidae, and Trogidae.
- Similar abundances for Lucilia, *N. rufipes*, *D. maculatus* (L & A).
- Sarcophagids a sporadic occurrence.

Differences:

- It appears the first rainfall event of the cycle (associated with a cold front) delayed colonisation by *C. albiceps* by a couple of days in the CFDS/C habitat, the species only arriving post-rainfall, in contrast to the CFDS/O carcasses.

- Greater Muscid, Piophilid and *C. marginalis* activity in CFDS/C than in CFDS/O, and more Histerid activity in CFDS/O than CFDS/C (soil substrate?).
- Colonising populations of blow flies are larger in CFDS/C than CFDS/O, but emergent populations are smaller, and emerge a little bit later, on average.
- Silphids confined to CFDS/C habitat, and in very small numbers for a short period of time.

CYCLE 3 | W-2015

CFDS/O-1 VS CFDS/O-2

Similarities:

- No blow fly emergence events observed.
- Absent: Sarcophagidae, Scarabaeidae, and Staphylinidae.
- Similar abundances for *C. chloropyga*, *C. vicina*, Lucilia, Piophilidae, Silphidae, and Trogidae.
- *C. vicina* present at the same time during early decomp.
- Similar succession patterns for *C. albiceps*, Lucilia, Muscidae, Piophilidae, Silphidae, and Trogidae.
- *C. albiceps* more abundant in advanced decomp.
- Lucilia populations seem to be suppressed by high wind and rain.
- Clerid and Silphid populations appear to be suppressed by rain only, but minimally.
- No apparent effect of heat spikes ($T_{24hr\ MAX} \geq 37°C$).

Differences:

- No *C. marginalis* observed at CFDS/O-1.
- Dermestids more abundant and present for longer at CFDS/O-1.
- More *C. albiceps* observed at CFDS/O-2.
- *C. chloropyga* arrives and leave earlier at CFDS/O-1.
- Silphidae more abundant in advanced decomp at CFDS/O-1 compared to early decomp at CFDS/O-2.
- Most Silphid activity declines at onset of advanced decomposition at CFDS/O-2, with inverse true for CFDS/O-1.

CFDS/C-1 vs CFDS/C-2

Similarities:

- Emergence events only observed for *C. chloropyga*, and succession pattern similar.
- Absent: Sarcophagidae and Scarabaeidae.
- Possible slight rain effects observed on *C. albiceps/chloropyga* and Lucilia.
- Hot spell ($T_{24hr\ MAX} \geq 32°C$ for a period of three or more consecutive days) appears to terminate Silphid larvae populations.
- Dermestid larval populations only spike at end of cycle.
- Silphid populations largely confined to advanced decomp.
- Trogids confined to fresh and early decomp.
- *C. chloropyga* only arrives in advanced decomp.
- *C. vicina* presently mainly in early decomp.

Differences:

- *C. chloropyga* emergence event larger and longer at CFDS/C-2.
- *C. albiceps* population larger at CFDS/C-1.
- *C. marginalis* present at CFDS/C-2, and arrives late in advanced decomp.
- Populations of all species larger at CFDS/C-2, with exception of Silphid larvae.
- Silphid adults arrive 2 weeks earlier at CFDS/C-2, but larvae take much longer to show up in comparison to CFDS/C-1.

Comparison (All)

Similarities:

- Absent: Sarcophagidae, Scarabaeidae.
- *C. vicina* only seen during early decomp.
- *C. chloropyga* arrives at largely the same time (except CFDS/O-1 where it arrived earlier).
- *C. marginalis* only seen during advanced decomp, towards end of September/early October.
- Muscid populations generally low, and Staphylinids a rarity observed only in skeletonisation.
- Only Lucilia appears to be affected by rain and/or wind in both habitats.
- No apparent effects of heat spikes ($T_{24hr\ MAX} \geq 37°C$).
- Small number of *C. albiceps* still observed late into advanced decomposition and into early skeletonisation, and numbers only really start increasing midway through cycle.

Differences:

- Blow fly emergence only observed in CFDS/C (*C. chloropyga*).
- Lucilia abundances considerably higher in CFDS/O.
- *C. vicina* more abundant and arrives much earlier in CFDS/C.
- *C. albiceps* populations peak a little later in CFDS/O.
- Beetle populations much larger and arrive earlier in CFDS/O than CFDS/C.
- Piophilid populations peak earlier in CFDS/O.

Cycle 4 | S-2016

CFDS/O-1 vs CFDS/O-2

Similarities:

- Similar abundances and succession patterns for *C. albiceps*, Lucilia, Cleridae, and Dermestidae.
- Absent: *C. chloropyga*, *Calliphora vicina*, Silphidae, Trogidae.
- Piophilids succession similar.
- Emergence events for *C. albiceps* and *C. marginalis* similar in size and timing.

Differences:

- Greater *C. marginalis* population at CFDS/O-2.
- Larger Histerid population at CFDS/O-2.
- Staphylinidae present in small numbers at CFDS/O-2 during early decomp.
- Piophilid population larger at CFDS/O-1.
- Sarcophagidae absent from CFDS/O-2.

CFDS/C-1 vs CFDS/C-2

Similarities:

- *C. albiceps* and *C. marginalis* populations have near-identical succession patterns.
- Emergence events recorded for *C. albiceps* and *C. marginalis*.
- Absent: *C. chloropyga*, Silphid larvae, Trogidae.

Differences:

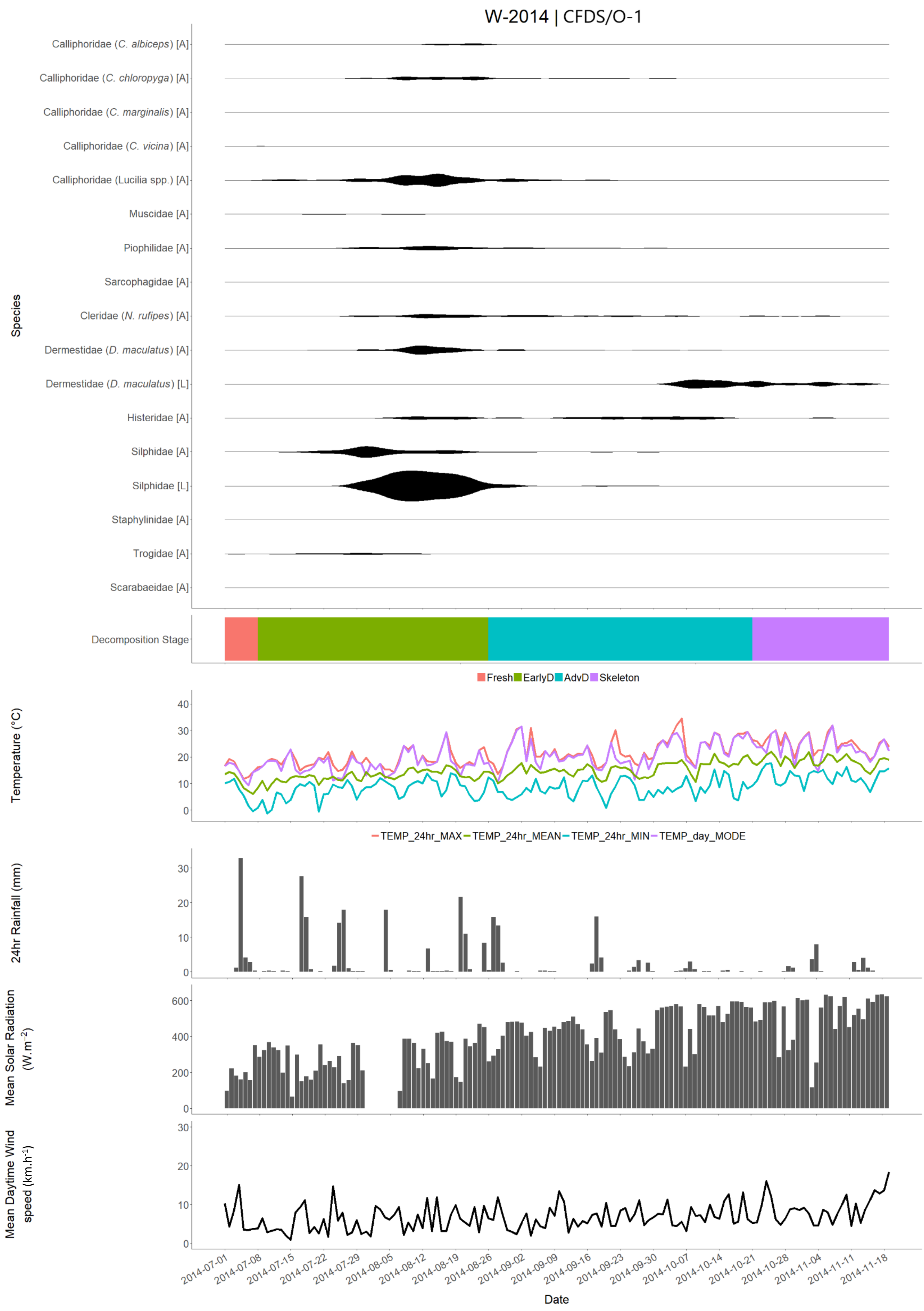
- Abundances of all species lower at CFDS/C-2.
- *C. vicina*, Scarabaeidae, Staphylinidae, and Silphid adults present at CFDS/C-1 (i.e. diversity lower at CFDS/C-2).

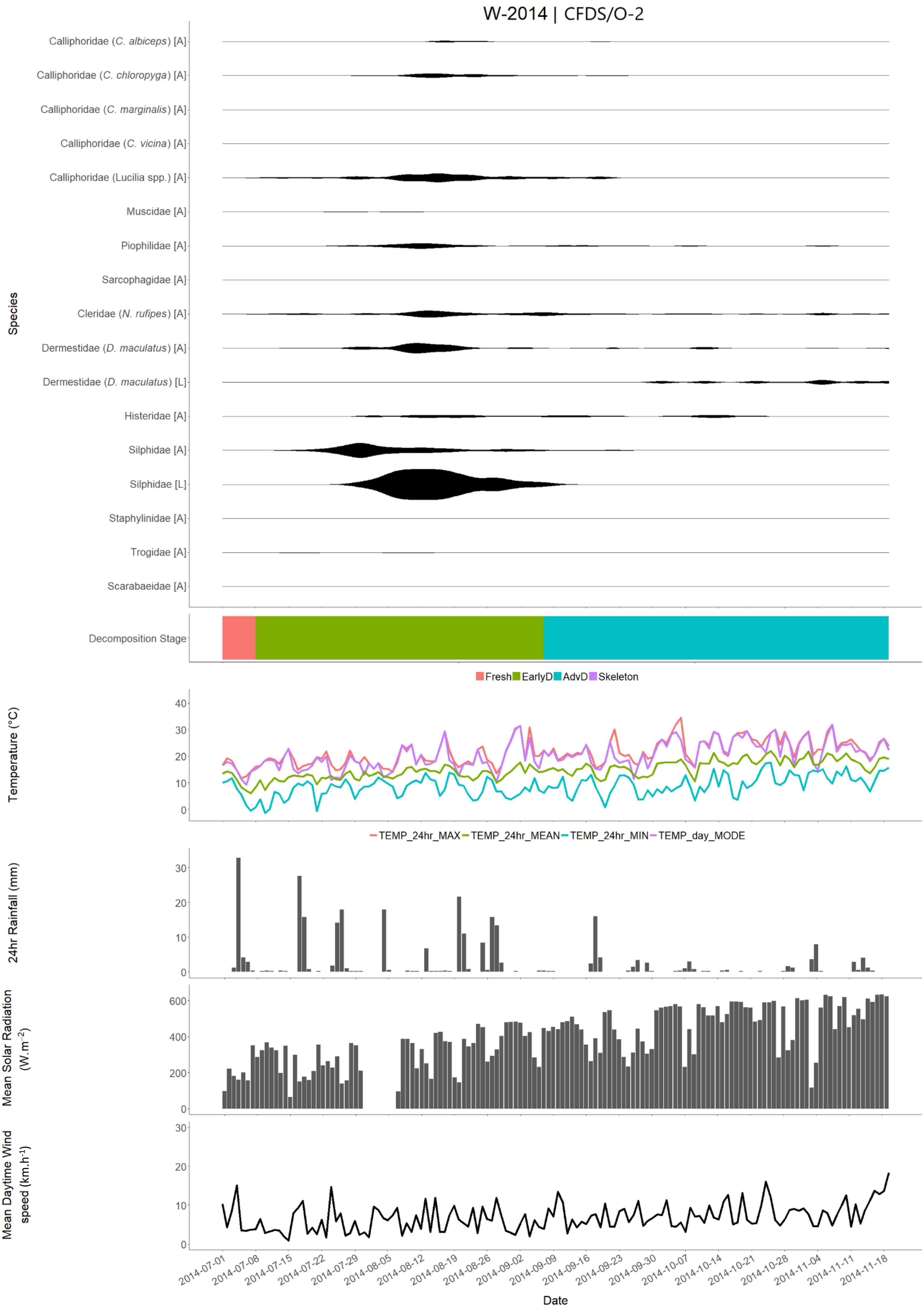
COMPARISON (ALL)

- Absent: *C. chloropyga*, Trogidae.
- Silphids and *C. vicina* very rare – almost entirely absent.
- All colonising blow fly adult populations terminate by the end of the first hot spell and are largely confined to early decomp.
- Muscids persist well into advanced decomp.
- Emergence events recorded for *C. albiceps* and *C. marginalis* in week 3.
- Beetle populations taper off at same time (end week 5/start week 6)

Differences:

- Beetle populations persist into skeletonisation in CFDS/O but not CFDS/C (mongoose?), and with much larger populations.
- Greater blow fly abundance, and for longer, in CFDS/C, but smaller, later emergence events (1 week difference).


W-2014 | CFDS/O-1
Species
Calliphoridae (C. albiceps) [A]
Calliphoridae (C. chloropyga) [A]
Calliphoridae (C. marginalis) [A]
Calliphoridae (C. vicina) [A]
Calliphoridae (Lucilia spp.) [A]
Muscidae [A]
Piophilidae [A]
Sarcophagidae [A]
Cleridae (N. rufipes) [A]
Dermestidae (D. maculatus) [A]
Dermestidae (D. maculatus) [L]
Histeridae [A]
Silphidae [A]
Silphidae [L]
Staphylinidae [A]
Trogidae [A]
Scarabaeidae [A]
Decomposition Stage
Fresh EarlyD AdvD Skeleton
Temperature (°C)
TEMP_24hr_MAX TEMP_24hr_MEAN TEMP_24hr_MIN TEMP_day_MODE
24hr Rainfall (mm)
Mean Solar Radiation (W.m⁻²)
Mean Daytime Wind speed (km.h⁻¹)
Date
2014-07-01 2014-07-08 2014-07-15 2014-07-22 2014-07-29 2014-08-05 2014-08-12 2014-08-19 2014-08-26 2014-09-02 2014-09-09 2014-09-16 2014-09-23 2014-09-30 2014-10-07 2014-10-14 2014-10-21 2014-10-28 2014-11-04 2014-11-11 2014-11-18


W-2014 | CFDS/O-2
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Calliphoridae (C. marginalis) [A]
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Calliphoridae (Lucilia spp.) [A]
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Histeridae [A]
Silphidae [A]
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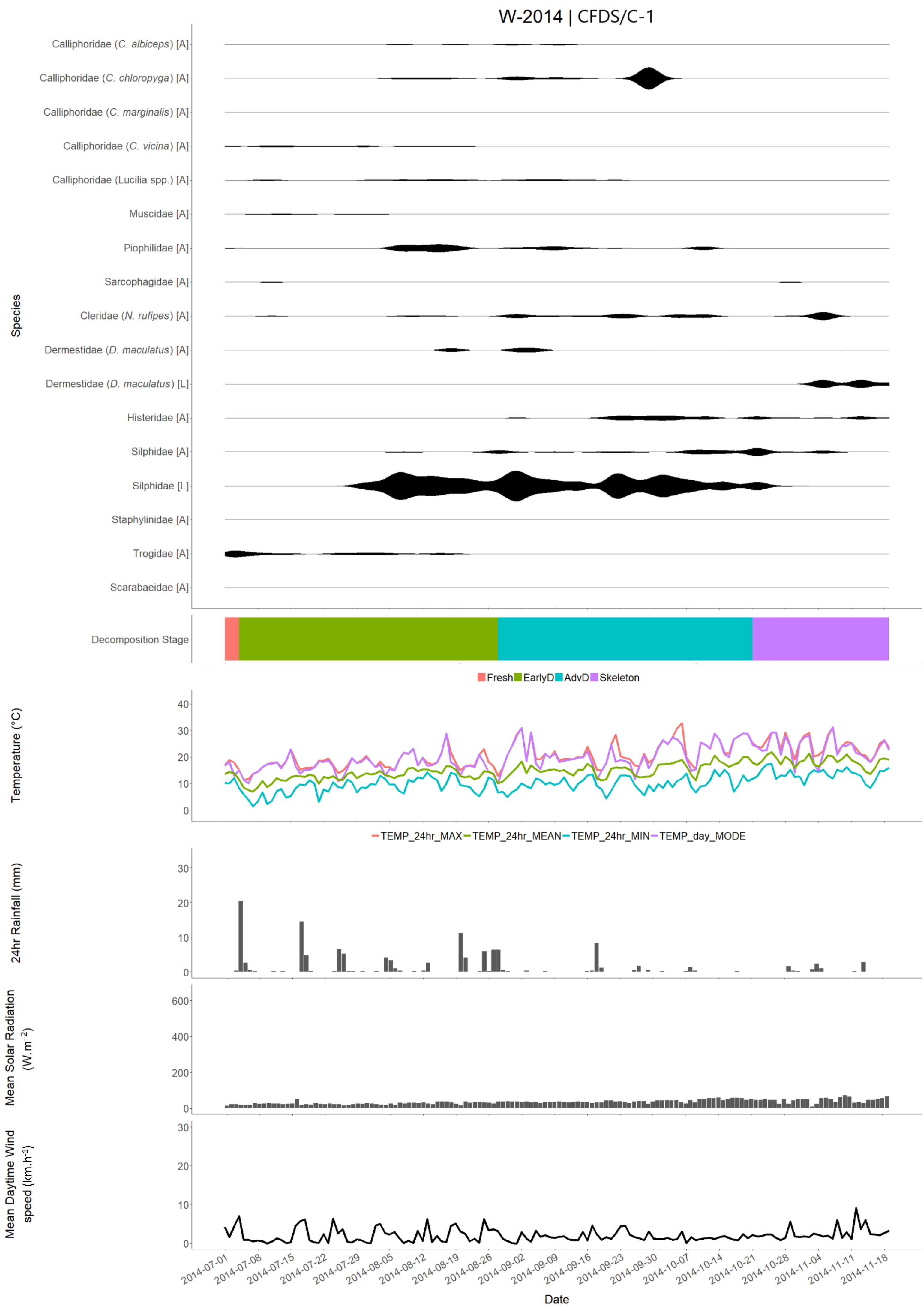
Staphylinidae [A]
Trogidae [A]
Scarabaeidae [A]
Decomposition Stage
Fresh EarlyD AdvD Skeleton
Temperature (°C)
TEMP_24hr_MAX TEMP_24hr_MEAN TEMP_24hr_MIN TEMP_day_MODE
24hr Rainfall (mm)
Mean Solar Radiation (W.m^{-2})
Mean Daytime Wind speed (km.h^{-1})
Date
2014-07-01 2014-07-08 2014-07-15 2014-07-22 2014-07-29 2014-08-05 2014-08-12 2014-08-19 2014-08-26 2014-09-02 2014-09-09 2014-09-16 2014-09-23 2014-09-30 2014-10-07 2014-10-14 2014-10-21 2014-10-28 2014-11-04 2014-11-11 2014-11-18



W-2014 | CFDS/C-1
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Calliphoridae (C. chloropyga) [A]
Calliphoridae (C. marginalis) [A]
Calliphoridae (C. vicina) [A]
Calliphoridae (Lucilia spp.) [A]
Muscidae [A]
Piophilidae [A]
Sarcophagidae [A]
Cleridae (N. rufipes) [A]
Dermestidae (D. maculatus) [A]
Dermestidae (D. maculatus) [L]
Histeridae [A]
Silphidae [A]
Silphidae [L]
Staphylinidae [A]
Trogidae [A]
Scarabaeidae [A]
Species
Decomposition Stage
Fresh
EarlyD
AdvD
Skeleton
Temperature (°C)
TEMP_24hr_MAX
TEMP_24hr_MEAN
TEMP_24hr_MIN
TEMP_day_MODE
24hr Rainfall (mm)
Mean Solar Radiation (W.m-2)
Mean Daytime Wind speed (km.h-1)
2014-07-01
2014-07-08
2014-07-15
2014-07-22
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2014-08-19
2014-08-26
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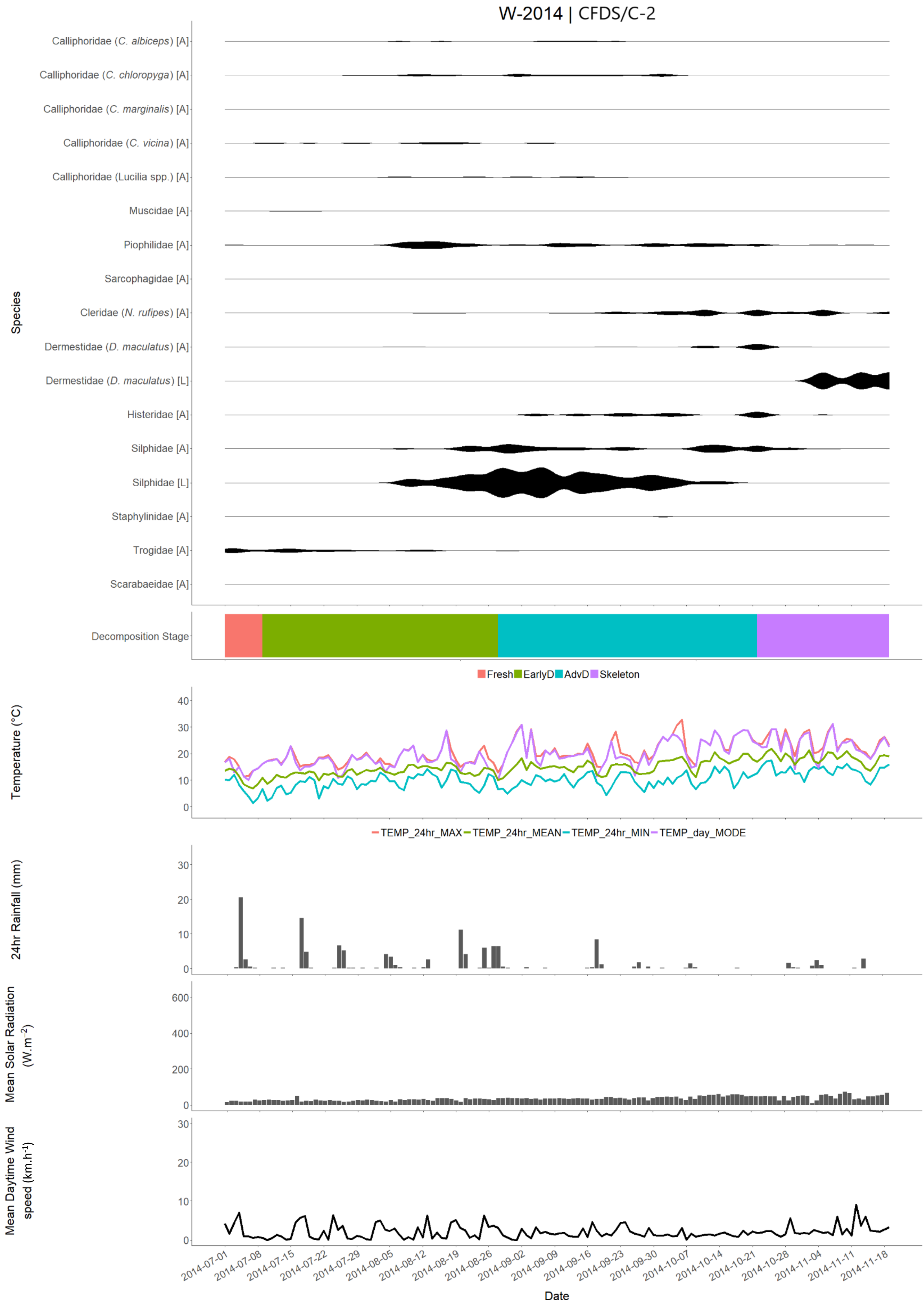
2014-11-11
2014-11-18
Date



W-2014 | CFDS/C-2
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Calliphoridae (C. chloropyga) [A]
Calliphoridae (C. marginalis) [A]
Calliphoridae (C. vicina) [A]
Calliphoridae (Lucilia spp.) [A]
Muscidae [A]
Piophilidae [A]
Sarcophagidae [A]
Cleridae (N. rufipes) [A]
Dermestidae (D. maculatus) [A]
Dermestidae (D. maculatus) [L]
Histeridae [A]
Silphidae [A]
Silphidae [L]
Staphylinidae [A]
Trogidae [A]
Scarabaeidae [A]
Decomposition Stage
Fresh
EarlyD
AdvD
Skeleton
Temperature (°C)
TEMP_24hr_MAX
TEMP_24hr_MEAN
TEMP_24hr_MIN
TEMP_day_MODE
24hr Rainfall (mm)
Mean Solar Radiation (W.m-2)
Mean Daytime Wind speed (km.h-1)
Date
2014-07-01
2014-07-08
2014-07-15
2014-07-22
2014-07-29
2014-08-05
2014-08-12
2014-08-19
2014-08-26
2014-09-02
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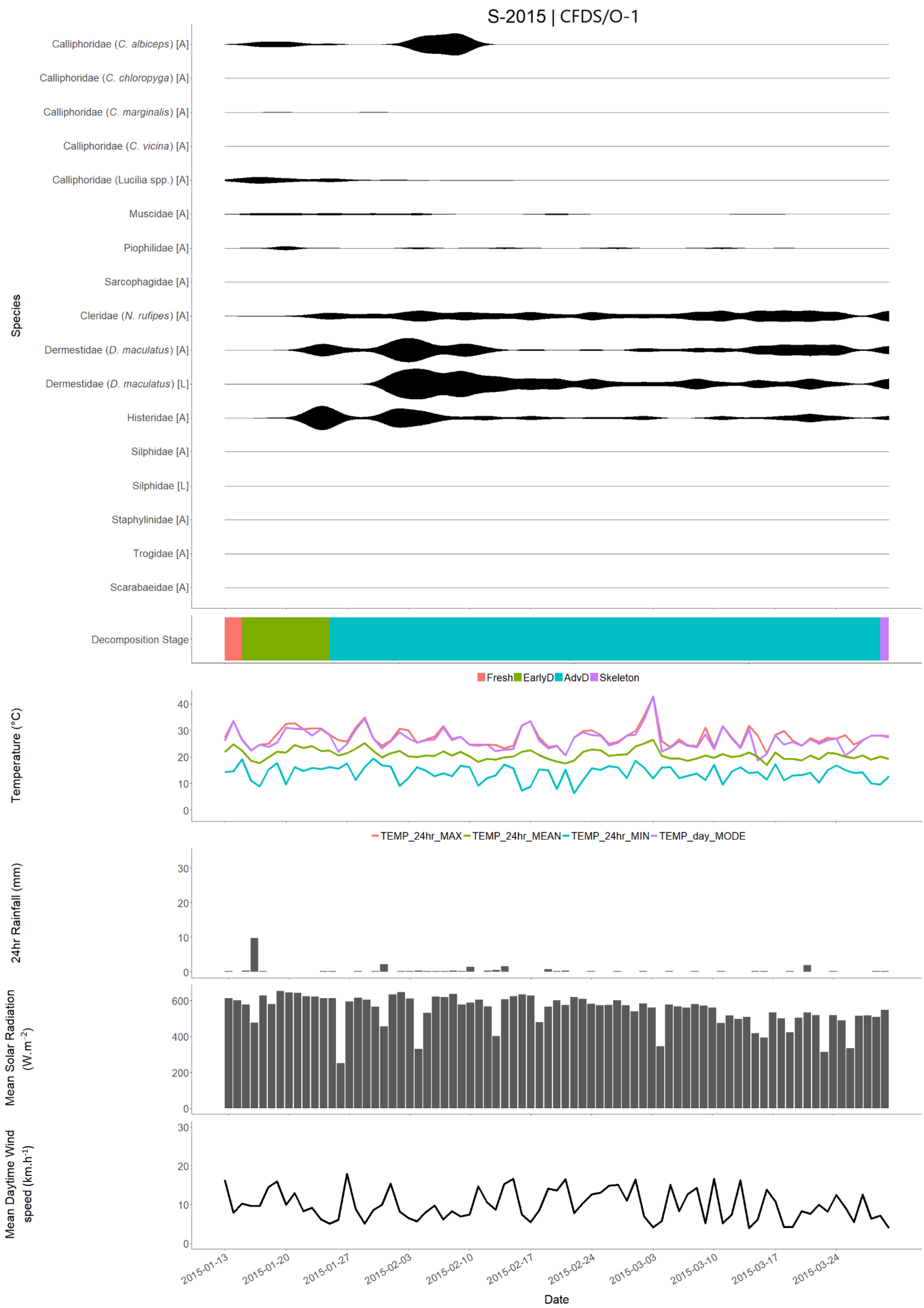
2014-11-11
2014-11-18



S-2015 | CFDS/O-1
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Calliphoridae (C. marginalis) [A]
Calliphoridae (C. vicina) [A]
Calliphoridae (Lucilia spp.) [A]
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Piophilidae [A]
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Dermestidae (D. maculatus) [A]
Dermestidae (D. maculatus) [L]
Histeridae [A]
Silphidae [A]
Silphidae [L]
Staphylinidae [A]
Trogidae [A]
Scarabaeidae [A]
Decomposition Stage
Fresh
EarlyD
AdvD
Skeleton
Temperature (°C)
TEMP_24hr_MAX
TEMP_24hr_MEAN
TEMP_24hr_MIN
TEMP_day_MODE
24hr Rainfall (mm)
Mean Solar Radiation (W.m⁻²)
Mean Daytime Wind speed (km.h⁻¹)
2015-01-13
2015-01-20
2015-01-27
2015-02-03
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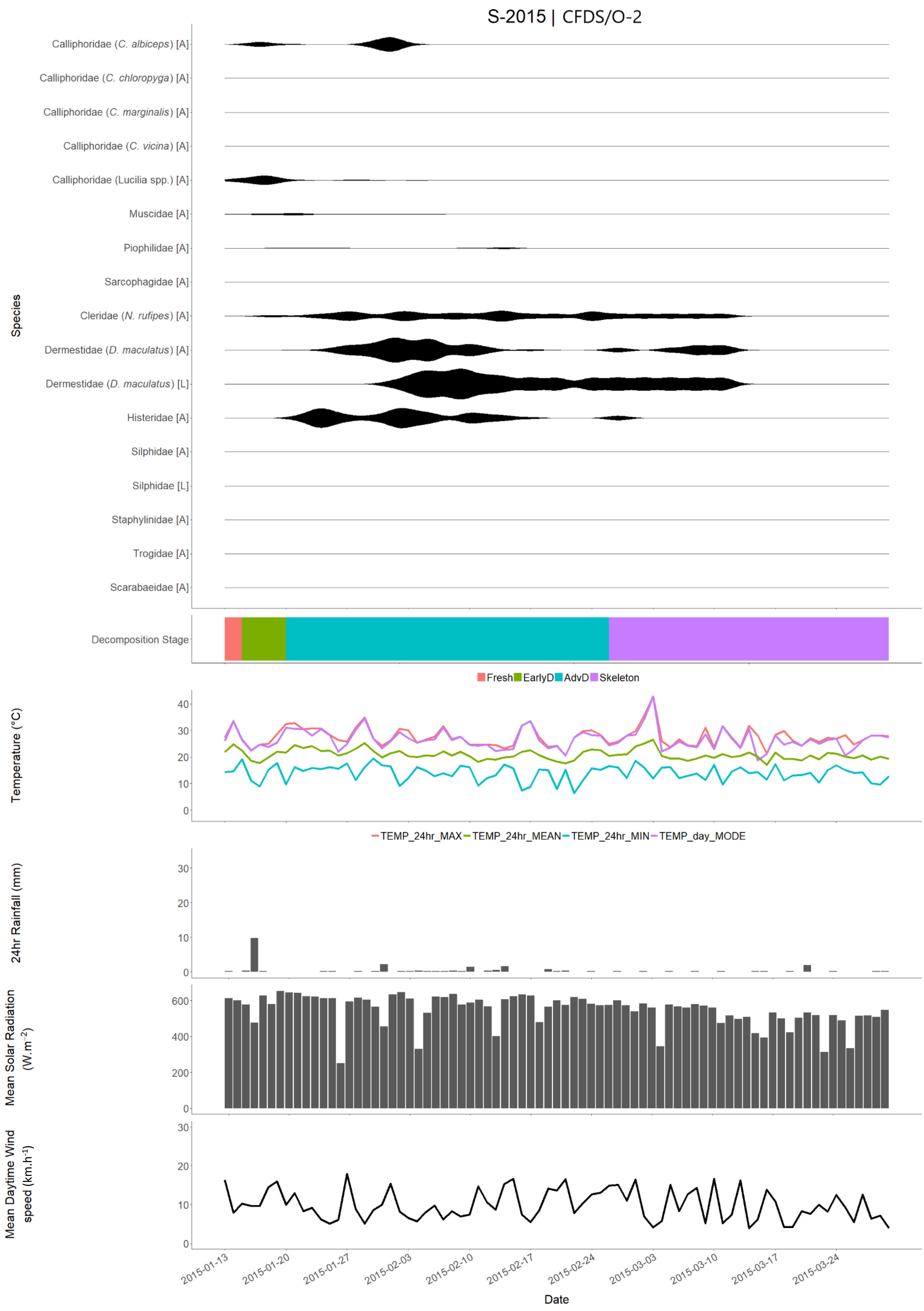
2015-03-17
2015-03-24
Date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Calliphoridae (Lucilia spp.) [A]
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Piophilidae [A]
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Cleridae (N. rufipes) [A]
Dermestidae (D. maculatus) [A]
Dermestidae (D. maculatus) [L]
Histeridae [A]
Silphidae [A]
Silphidae [L]
Staphylinidae [A]
Trogidae [A]
Scarabaeidae [A]
Decomposition Stage
Fresh EarlyD AdvD Skeleton
Temperature (°C)
TEMP_24hr_MAX TEMP_24hr_MEAN TEMP_24hr_MIN TEMP_day_MODE
24hr Rainfall (mm)
Mean Solar Radiation (W.m^-2)
Mean Daytime Wind speed (km.h^-1)
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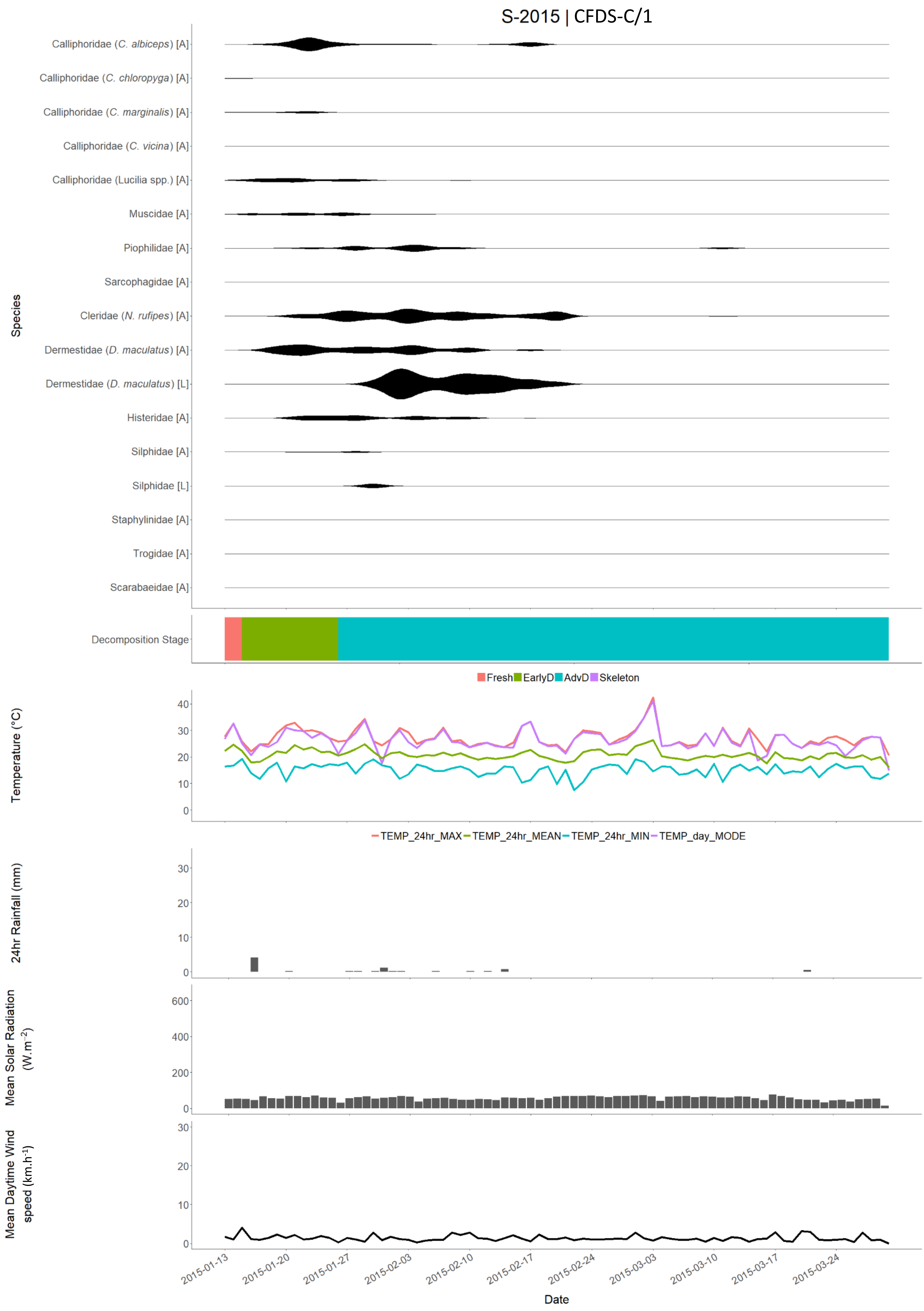
Date


S-2015 | CFDS-C/1
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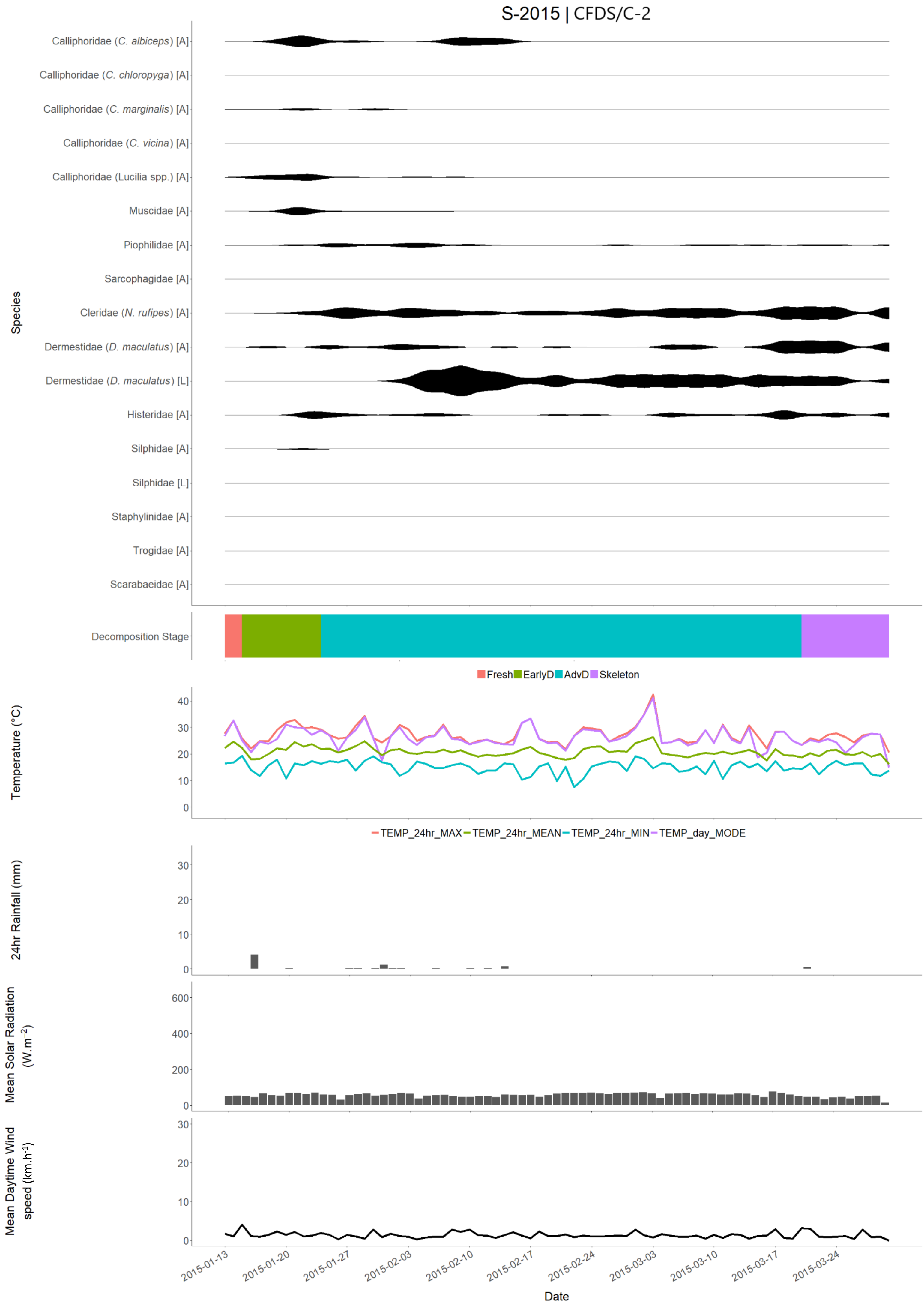
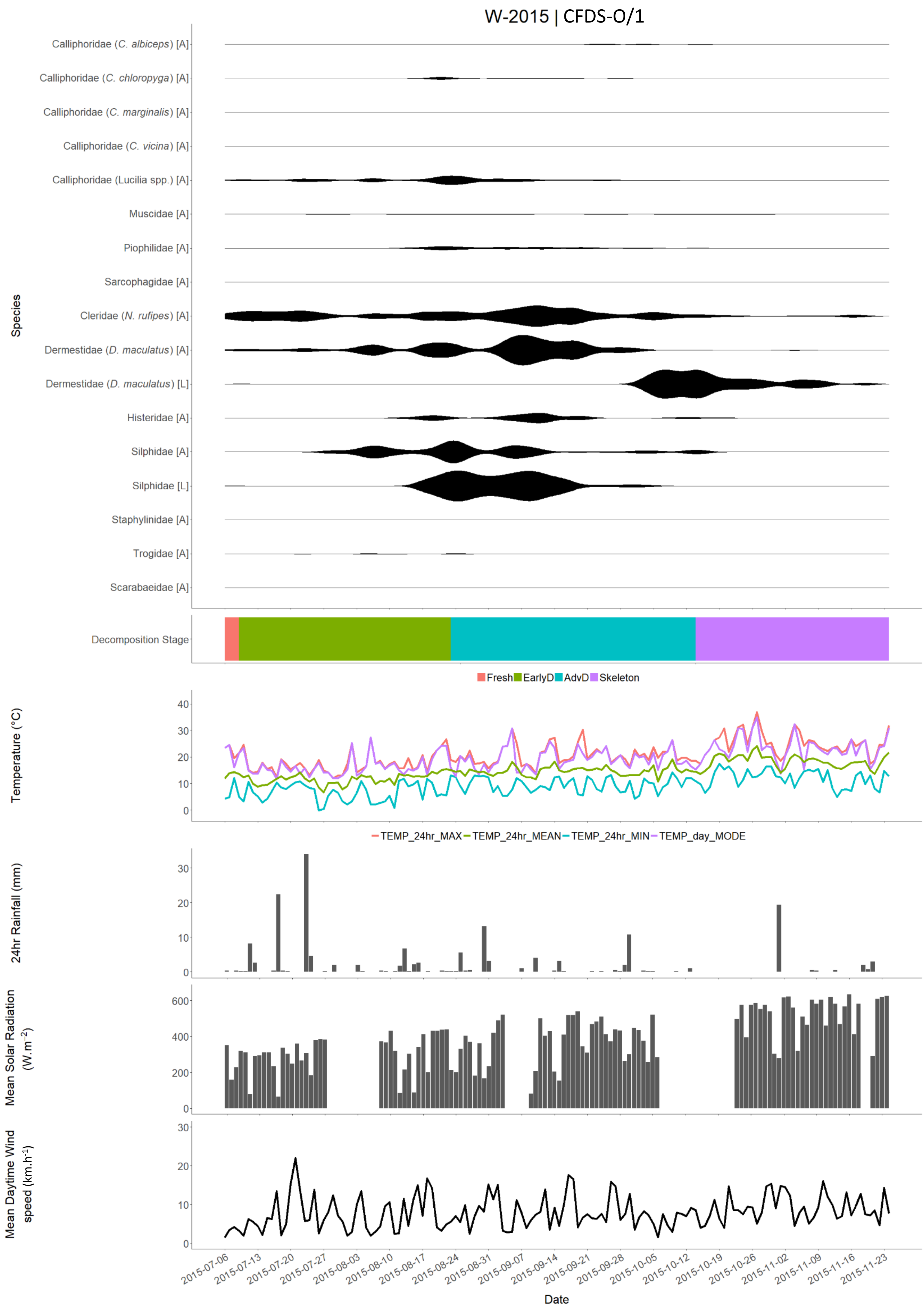
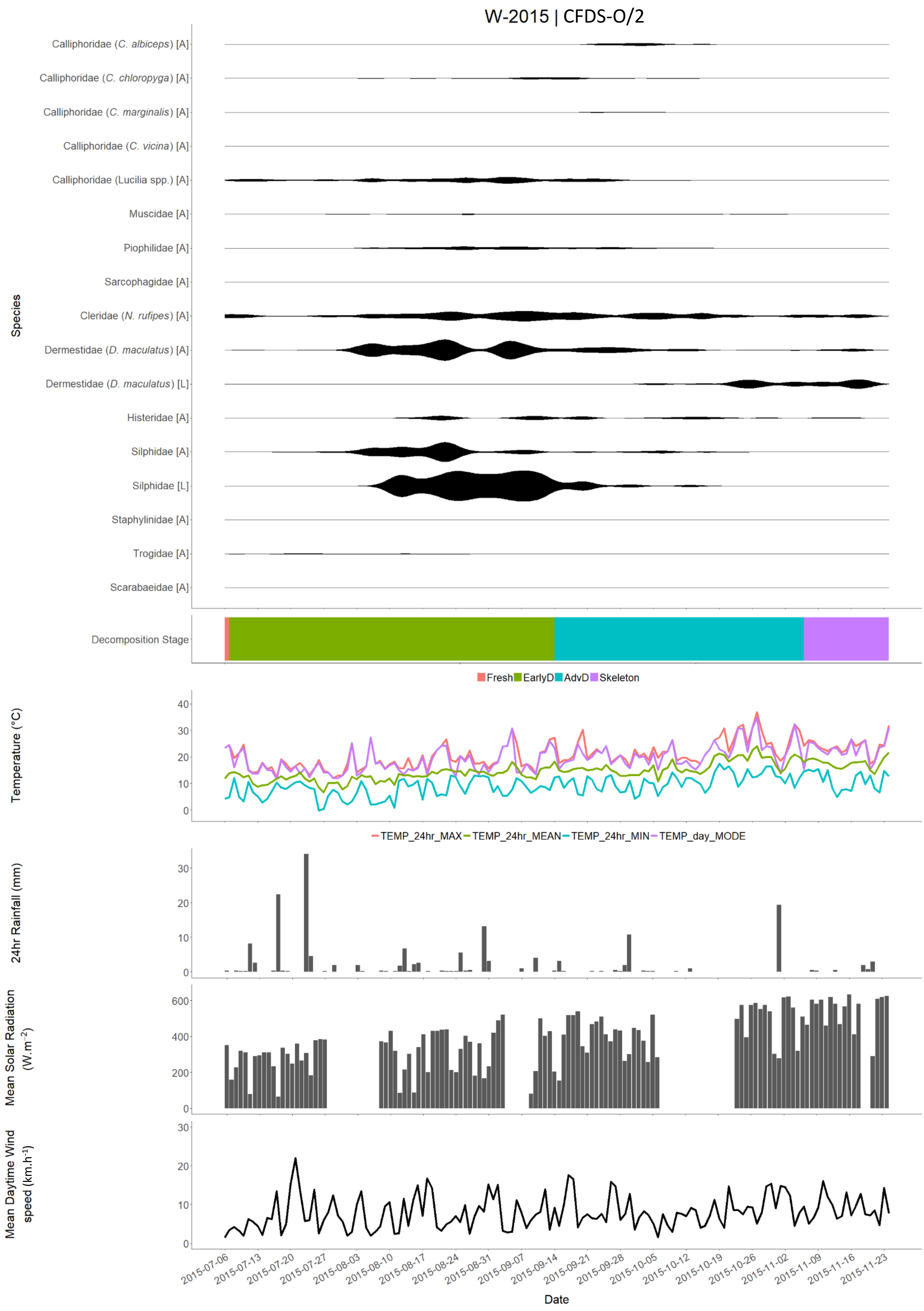
Dermestidae (D. maculatus) [A]
Dermestidae (D. maculatus) [L]
Histeridae [A]
Silphidae [A]
Silphidae [L]
Staphylinidae [A]
Trogidae [A]
Scarabaeidae [A]
Decomposition Stage
Fresh EarlyD AdvD Skeleton
Temperature (°C)
TEMP_24hr_MAX TEMP_24hr_MEAN TEMP_24hr_MIN TEMP_day_MODE
24hr Rainfall (mm)
Mean Solar Radiation (W.m-2)
Mean Daytime Wind speed (km.h-1)
2015-01-13
2015-01-20
2015-01-27
2015-02-03
2015-02-10
2015-02-17
2015-02-24
2015-03-03
2015-03-10
2015-03-17
2015-03-24
Date

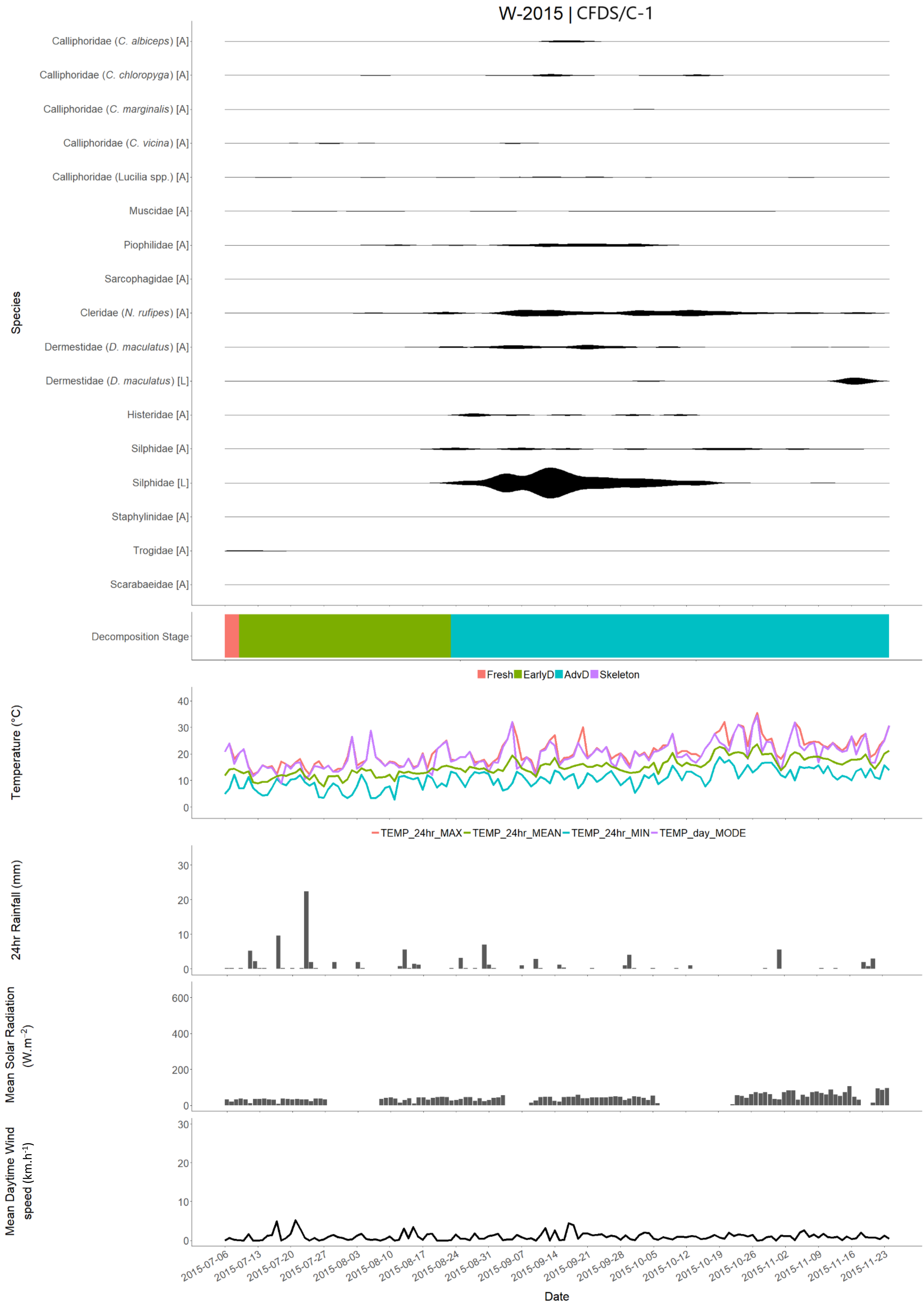

S-2015 | CFDS/C-2
Species
Calliphoridae (C. albiceps) [A]
Calliphoridae (C. chloropyga) [A]
Calliphoridae (C. marginalis) [A]
Calliphoridae (C. vicina) [A]
Calliphoridae (Lucilia spp.) [A]
Muscidae [A]
Piophilidae [A]
Sarcophagidae [A]
Cleridae (N. rufipes) [A]
Dermestidae (D. maculatus) [A]
Dermestidae (D. maculatus) [L]
Histeridae [A]
Silphidae [A]
Silphidae [L]
Staphylinidae [A]
Trogidae [A]
Scarabaeidae [A]
Decomposition Stage
Fresh EarlyD AdvD Skeleton
Temperature (°C)
TEMP_24hr_MAX TEMP_24hr_MEAN TEMP_24hr_MIN TEMP_day_MODE
24hr Rainfall (mm)
Mean Solar Radiation (W.m-2)
Mean Daytime Wind speed (km.h-1)
2015-01-13
2015-01-20
2015-01-27
2015-02-03
2015-02-10
2015-02-17
2015-02-24
2015-03-03
2015-03-10
2015-03-17
2015-03-24
Date

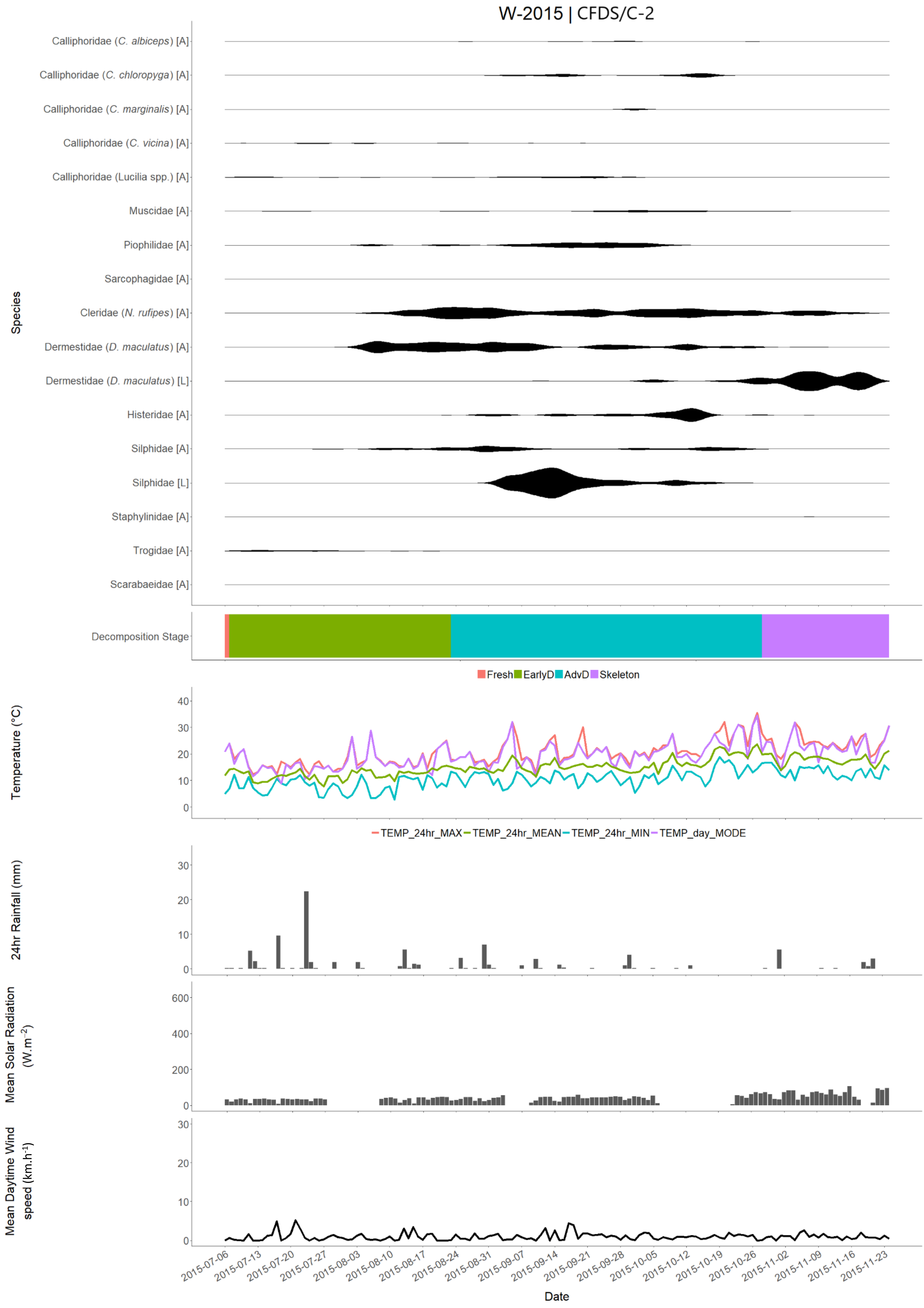


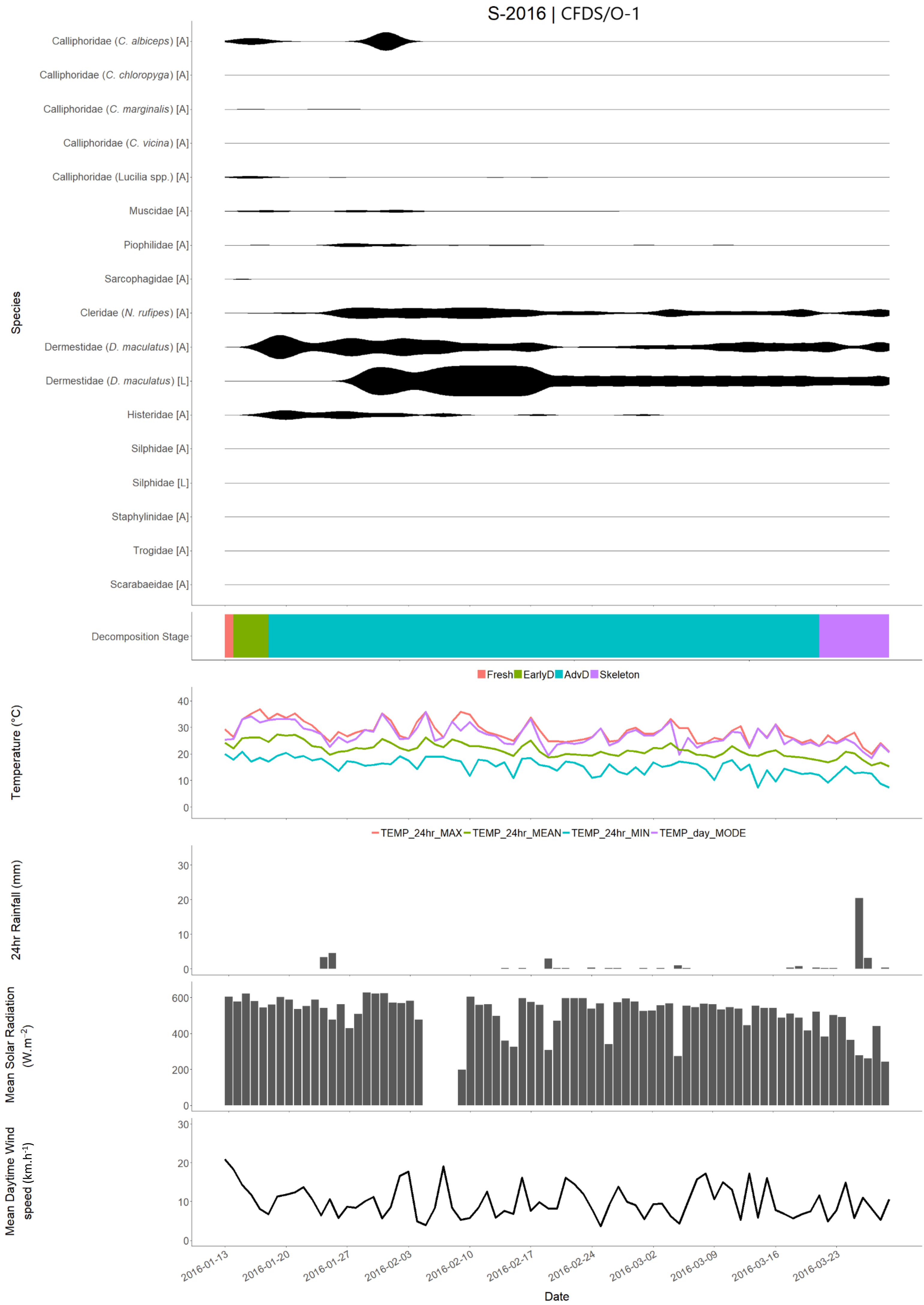
W-2015 | CFDS-O/1
Calliphoridae (C. albiceps) [A]
Calliphoridae (C. chloropyga) [A]
Calliphoridae (C. marginalis) [A]
Calliphoridae (C. vicina) [A]
Calliphoridae (Lucilia spp.) [A]
Muscidae [A]
Piophilidae [A]
Sarcophagidae [A]
Cleridae (N. rufipes) [A]
Dermestidae (D. maculatus) [A]
Dermestidae (D. maculatus) [L]
Histeridae [A]
Silphidae [A]
Silphidae [L]
Staphylinidae [A]
Trogidae [A]
Scarabaeidae [A]
Species
Decomposition Stage
Fresh
EarlyD
AdvD
Skeleton
Temperature (°C)
TEMP_24hr_MAX
TEMP_24hr_MEAN
TEMP_24hr_MIN
TEMP_day_MODE
24hr Rainfall (mm)
Mean Solar Radiation (W.m^-2)
Mean Daytime Wind speed (km.h^-1)
2015-07-06
2015-07-13
2015-07-20
2015-07-27
2015-08-03
2015-08-10
2015-08-17
2015-08-24
2015-08-31
2015-09-07
2015-09-14
2015-09-21
2015-09-28
2015-10-05
2015-10-12
2015-10-19
2015-10-26
2015-11-02
2015-11-09
2015-11-16
2015-11-23
Date

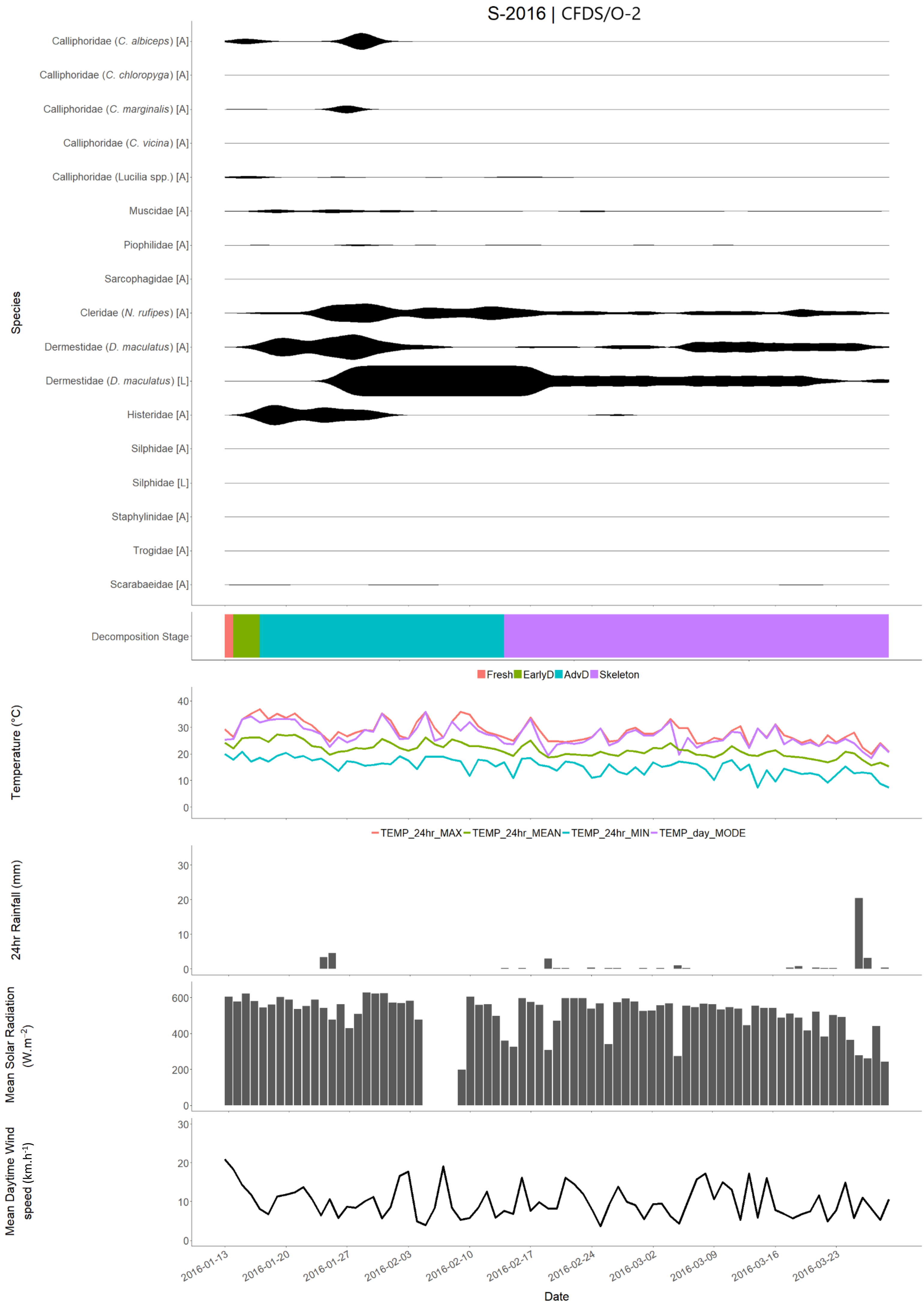


W-2015 | CFDS-O/2
Species
Calliphoridae (C. albiceps) [A]
Calliphoridae (C. chloropyga) [A]
Calliphoridae (C. marginalis) [A]
Calliphoridae (C. vicina) [A]
Calliphoridae (Lucilia spp.) [A]
Muscidae [A]
Piophilidae [A]
Sarcophagidae [A]
Cleridae (N. rufipes) [A]
Dermestidae (D. maculatus) [A]
Dermestidae (D. maculatus) [L]
Histeridae [A]
Silphidae [A]
Silphidae [L]
Staphylinidae [A]
Trogidae [A]
Scarabaeidae [A]
Decomposition Stage
Fresh EarlyD AdvD Skeleton
Temperature (°C)
TEMP_24hr_MAX TEMP_24hr_MEAN TEMP_24hr_MIN TEMP_day_MODE
24hr Rainfall (mm)
Mean Solar Radiation (W.m-2)
Mean Daytime Wind speed (km.h-1)
Date

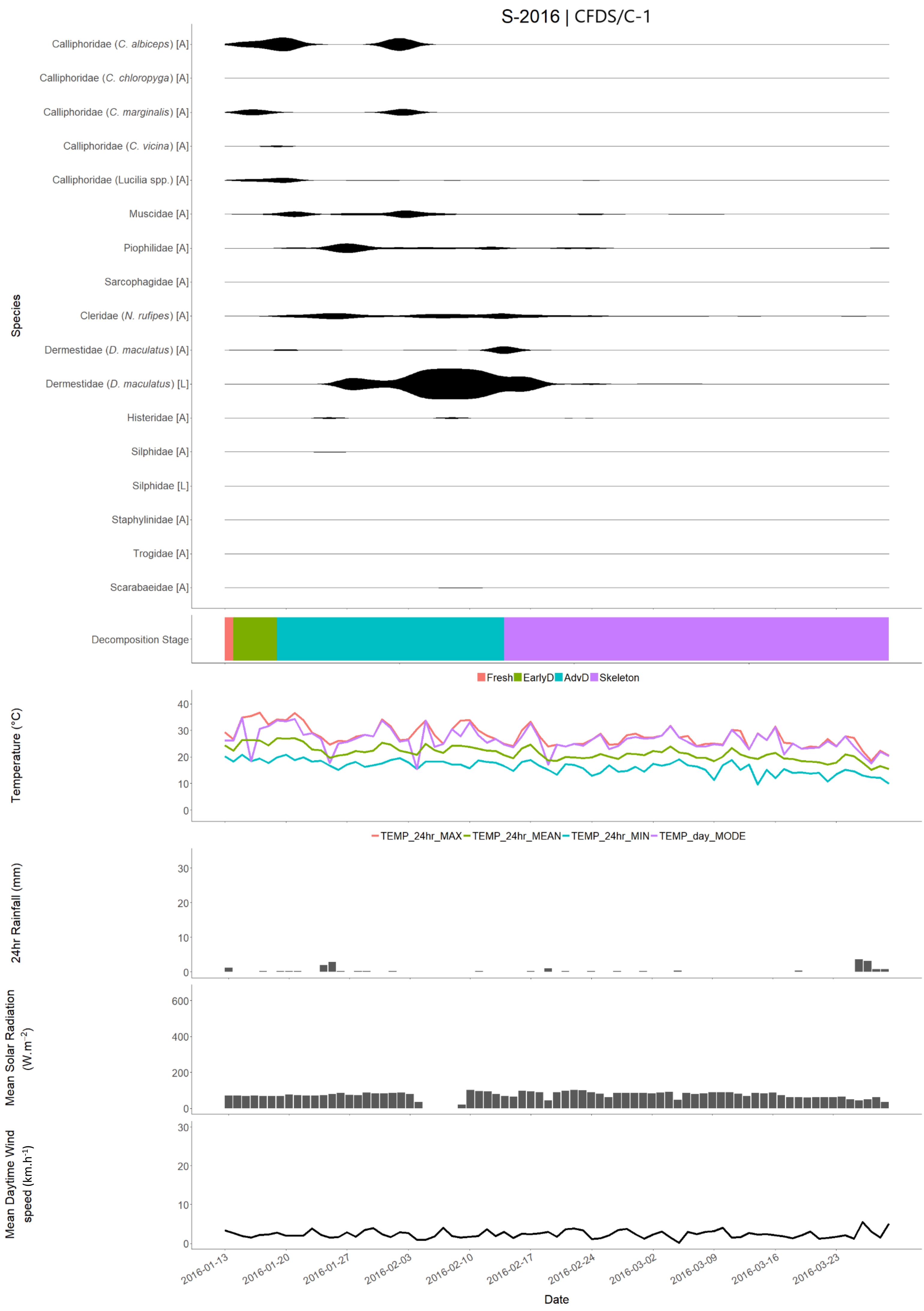

W-2015 | CFDS/C-1
Calliphoridae (C. albiceps) [A]
Calliphoridae (C. chloropyga) [A]
Calliphoridae (C. marginalis) [A]
Calliphoridae (C. vicina) [A]
Calliphoridae (Lucilia spp.) [A]
Muscidae [A]
Piophilidae [A]
Sarcophagidae [A]
Cleridae (N. rufipes) [A]
Dermestidae (D. maculatus) [A]
Dermestidae (D. maculatus) [L]
Histeridae [A]
Silphidae [A]
Silphidae [L]
Staphylinidae [A]
Trogidae [A]
Scarabaeidae [A]
Species
Decomposition Stage
Fresh EarlyD AdvD Skeleton
Temperature (°C)
TEMP_24hr_MAX TEMP_24hr_MEAN TEMP_24hr_MIN TEMP_day_MODE
24hr Rainfall (mm)
Mean Solar Radiation (W.m^{-2})
Mean Daytime Wind speed (km.h^{-1})
Date


W-2015 | CFDS/C-2
Species
Calliphoridae (C. albiceps) [A]
Calliphoridae (C. chloropyga) [A]
Calliphoridae (C. marginalis) [A]
Calliphoridae (C. vicina) [A]
Calliphoridae (Lucilia spp.) [A]
Muscidae [A]
Piophilidae [A]
Sarcophagidae [A]
Cleridae (N. rufipes) [A]
Dermestidae (D. maculatus) [A]
Dermestidae (D. maculatus) [L]
Histeridae [A]
Silphidae [A]
Silphidae [L]
Staphylinidae [A]
Trogidae [A]
Scarabaeidae [A]
Decomposition Stage
Fresh EarlyD AdvD Skeleton
Temperature (°C)
TEMP_24hr_MAX TEMP_24hr_MEAN TEMP_24hr_MIN TEMP_day_MODE
24hr Rainfall (mm)
Mean Solar Radiation (W.m−2)
Mean Daytime Wind speed (km.h-1)
Date
2015-07-06 2015-07-13 2015-07-20 2015-07-27 2015-08-03 2015-08-10 2015-08-17 2015-08-24 2015-08-31 2015-09-07 2015-09-14 2015-09-21 2015-09-28 2015-10-05 2015-10-12 2015-10-19 2015-10-26 2015-11-02 2015-11-09 2015-11-16 2015-11-23

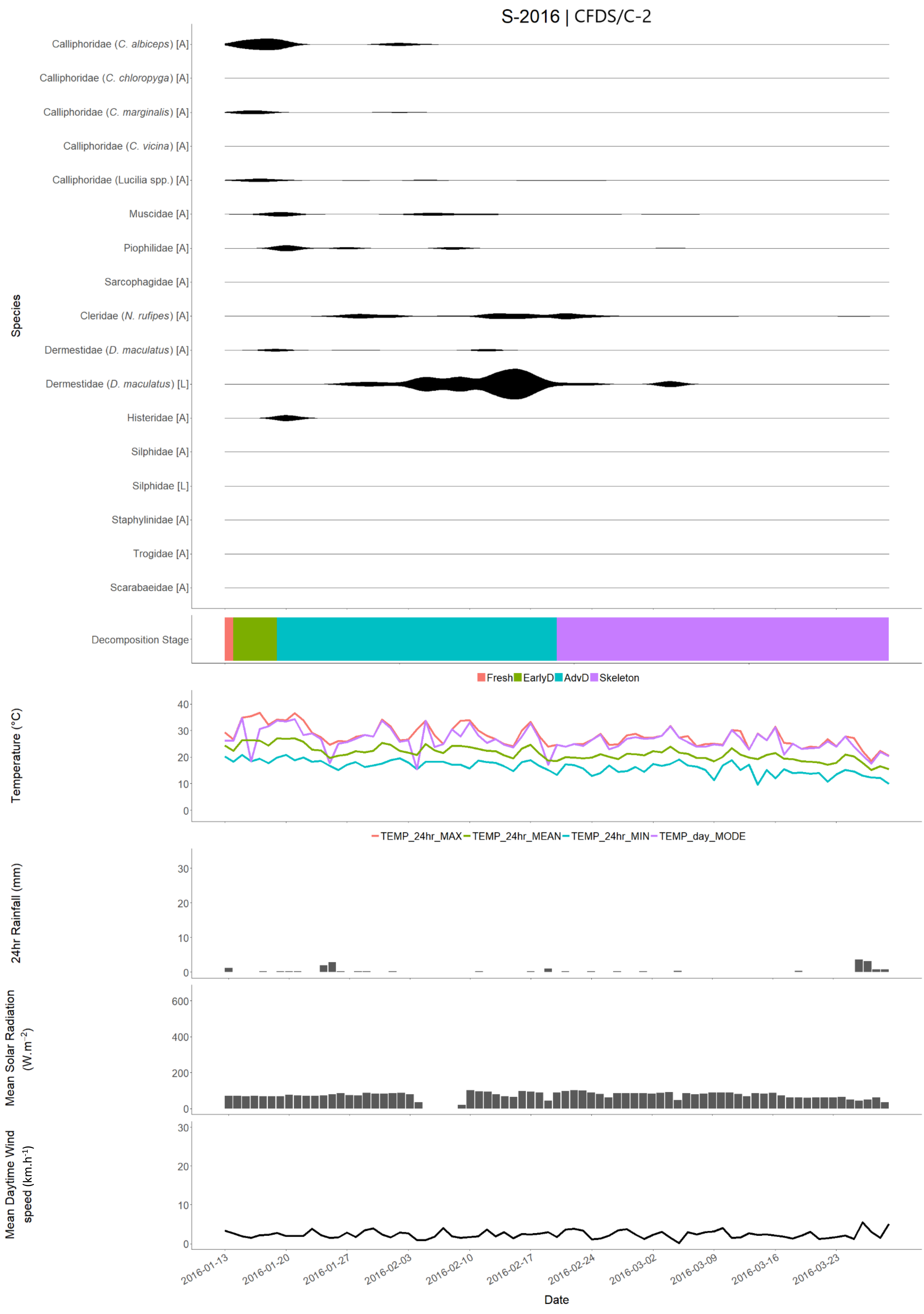

S-2016 | CFDS/O-1
Calliphoridae (C. albiceps) [A]
Calliphoridae (C. chloropyga) [A]
Calliphoridae (C. marginalis) [A]
Calliphoridae (C. vicina) [A]
Calliphoridae (Lucilia spp.) [A]
Muscidae [A]
Piophilidae [A]
Sarcophagidae [A]
Cleridae (N. rufipes) [A]
Dermestidae (D. maculatus) [A]
Dermestidae (D. maculatus) [L]
Histeridae [A]
Silphidae [A]
Silphidae [L]
Staphylinidae [A]
Trogidae [A]
Scarabaeidae [A]
Species
Decomposition Stage
Fresh EarlyD AdvD Skeleton
Temperature (°C)
0 10 20 30 40
TEMP_24hr_MAX TEMP_24hr_MEAN TEMP_24hr_MIN TEMP_day_MODE
24hr Rainfall (mm)
0 10 20 30
Mean Solar Radiation (W.m^{-2})
0 200 400 600
Mean Daytime Wind speed (km.h^{-1})
0 10 20 30
2016-01-13 2016-01-20 2016-01-27 2016-02-03 2016-02-10 2016-02-17 2016-02-24 2016-03-02 2016-03-09 2016-03-16 2016-03-23
Date



S-2016 | CFDS/O-2
Species
Calliphoridae (C. albiceps) [A]
Calliphoridae (C. chloropyga) [A]
Calliphoridae (C. marginalis) [A]
Calliphoridae (C. vicina) [A]
Calliphoridae (Lucilia spp.) [A]
Muscidae [A]
Piophilidae [A]
Sarcophagidae [A]
Cleridae (N. rufipes) [A]
Dermestidae (D. maculatus) [A]
Dermestidae (D. maculatus) [L]
Histeridae [A]
Silphidae [A]
Silphidae [L]
Staphylinidae [A]
Trogidae [A]
Scarabaeidae [A]
Decomposition Stage
Fresh
EarlyD
AdvD
Skeleton
Temperature (°C)
TEMP_24hr_MAX
TEMP_24hr_MEAN
TEMP_24hr_MIN
TEMP_day_MODE
24hr Rainfall (mm)
Mean Solar Radiation (W.m-2)
Mean Daytime Wind speed (km.h-1)
2016-01-13
2016-01-20
2016-01-27
2016-02-03
2016-02-10
2016-02-17
2016-02-24
2016-03-02
2016-03-09
2016-03-16
2016-03-23
Date



S-2016 | CFDS/C-1
Calliphoridae (C. albiceps) [A]
Calliphoridae (C. chloropyga) [A]
Calliphoridae (C. marginalis) [A]
Calliphoridae (C. vicina) [A]
Calliphoridae (Lucilia spp.) [A]
Muscidae [A]
Piophilidae [A]
Sarcophagidae [A]
Cleridae (N. rufipes) [A]
Dermestidae (D. maculatus) [A]
Dermestidae (D. maculatus) [L]
Histeridae [A]
Silphidae [A]
Silphidae [L]
Staphylinidae [A]
Trogidae [A]
Scarabaeidae [A]
Species
Decomposition Stage
Fresh EarlyD AdvD Skeleton
Temperature (°C)
TEMP_24hr_MAX TEMP_24hr_MEAN TEMP_24hr_MIN TEMP_day_MODE
24hr Rainfall (mm)
Mean Solar Radiation (W.m⁻²)
Mean Daytime Wind speed (km.h⁻¹)
2016-01-13
2016-01-20
2016-01-27
2016-02-03
2016-02-10
2016-02-17
2016-02-24
2016-03-02
2016-03-09
2016-03-16
2016-03-23
Date


S-2016 | CFDS/C-2
Calliphoridae (C. albiceps) [A]
Calliphoridae (C. chloropyga) [A]
Calliphoridae (C. marginalis) [A]
Calliphoridae (C. vicina) [A]
Calliphoridae (Lucilia spp.) [A]
Muscidae [A]
Piophilidae [A]
Sarcophagidae [A]
Cleridae (N. rufipes) [A]
Dermestidae (D. maculatus) [A]
Dermestidae (D. maculatus) [L]
Histeridae [A]
Silphidae [A]
Silphidae [L]
Staphylinidae [A]
Trogidae [A]
Scarabaeidae [A]
Species
Decomposition Stage
Fresh EarlyD AdvD Skeleton
Temperature (°C)
TEMP_24hr_MAX TEMP_24hr_MEAN TEMP_24hr_MIN TEMP_day_MODE
24hr Rainfall (mm)
Mean Solar Radiation (W.m-2)
Mean Daytime Wind speed (km.h-1)
2016-01-13
2016-01-20
2016-01-27
2016-02-03
2016-02-10
2016-02-17
2016-02-24
2016-03-02
2016-03-09
2016-03-16
2016-03-23
Date

Appendix A5.4: Raw occurrence matrices for all carcasses in Cycle 1 | W-2014.

CFDS/O-1

Taxon			Sampling Interval	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Order	Family	Species	Cycle Days	0 - 7	8 - 14	15 - 21	22 - 28	29 - 35	36 - 42	43 - 49	50 - 56	57 - 63	64 - 70	71 -77	78 -84	85 -91	92 - 98	99 -105	106 - 112	113 - 119	120 - 126	127 - 133	134 - 141
Diptera	Calliphoridae	*Chrysomya albiceps*	Adult	0	0	0	0	0	0	1	1	1	1	0	1	0	0	0	0	0	0	0	0
		Chrysomya chloropyga	Adult	0	0	0	0	1	1	1	1	1	1	1	1	0	1	0	0	0	0	0	0
		Chrysomya marginalis	Adult	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Lucillia spp.	Adult	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0
		Calliphora vicina	Adult	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Muscidae	-	Adult	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Piophilidae	-	Adult	0	0	0	1	1	1	1	1	1	1	1	1	1	1	0	0	0	1	0	0
	Sarcophagidae	-	Adult	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
Coleoptera	Cleridae	*Necrobia rufipes*	Adult	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	0
	Dermestidae	*Dermestes maculatus*	Adult	0	0	1	1	1	1	1	1	1	1	1	0	1	1	1	0	0	0	0	0
	Dermestidae	*Dermestes maculatus*	Larva	0	0	0	1	1	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
	Histeridae	-	Adult	0	0	0	1	1	1	1	1	1	0	1	1	1	1	1	1	1	0	1	0
	Silphidae	-	Adult	0	1	1	1	1	1	1	1	1	1	0	1	1	0	0	0	0	0	0	0
	Silphidae	-	Larva	0	0	0	1	1	1	1	1	1	0	0	1	1	0	0	0	0	0	0	0
	Staphylinidae	-	Adult	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Trogidae	-	Adult	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Scarabaeidae	-	Adult	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = absent; 1 = present

CFDS/O-2

Taxon			Sampling Interval	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Order	Family	Species	Cycle Days	0 - 7	8 - 14	15 - 21	22 - 28	29 - 35	36 - 42	43 - 49	50 - 56	57 - 63	64 - 70	71 -77	78 -84	85 -91	92 - 98	99 -105	106 - 112	113 - 119	120 - 126	127 - 133	134 - 141
Diptera	Calliphoridae	*Chrysomya albiceps*	Adult	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0
		Chrysomya chloropyga	Adult	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0
		Chrysomya marginalis	Adult	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Lucillia spp.	Adult	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	1
		Calliphora vicina	Adult	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
	Muscidae	-	Adult	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Piophilidae	-	Adult	0	0	0	1	1	1	1	1	1	1	1	1	1	0	1	0	0	0	1	0
	Sarcophagidae	-	Adult	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Coleoptera	Cleridae	*Necrobia rufipes*	Adult	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1
	Dermestidae	*Dermestes maculatus*	Adult	0	0	1	1	1	1	1	1	1	1	1	1	0	1	1	0	0	0	1	1
	Dermestidae	*Dermestes maculatus*	Larva	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	1	1
	Histeridae	-	Adult	0	0	0	1	1	1	1	1	1	1	1	1	0	1	1	1	1	0	1	1
	Silphidae	-	Adult	0	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0
	Silphidae	-	Larva	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0
	Staphylinidae	-	Adult	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Trogidae	-	Adult	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
	Scarabaeidae	-	Adult	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = absent; 1 = present

COMBINED CFDS/O

Taxon			Sampling Interval	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Order	Family	Species	Cycle Days	0 - 7	8 - 14	15 - 21	22 - 28	29 - 35	36 - 42	43 - 49	50 - 56	57 - 63	64 - 70	71 -77	78 -84	85 -91	92 - 98	99 -105	106 - 112	113 - 119	120 - 126	127 - 133	134 - 141
Diptera	Calliphoridae	*Chrysomya albiceps*	Adult	0	0	0	0	0	0	1	1	1	1	0	1	0	0	0	0	0	0	0	0
		Chrysomya chloropyga	Adult	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0
		Chrysomya marginalis	Adult	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Lucillia spp.	Adult	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0
		Calliphora vicina	Adult	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Muscidae	-	Adult	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Piophilidae	-	Adult	0	0	0	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0
	Sarcophagidae	-	Adult	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Coleoptera	Cleridae	*Necrobia rufipes*	Adult	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	0
	Dermestidae	*Dermestes maculatus*	Adult	0	0	1	1	1	1	1	1	1	1	1	0	0	1	1	0	0	0	0	0
	Dermestidae	*Dermestes maculatus*	Larva	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	1	1
	Histeridae	-	Adult	0	0	0	1	1	1	1	1	1	0	1	1	0	1	1	1	1	0	1	0
	Silphidae	-	Adult	0	1	1	1	1	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0
	Silphidae	-	Larva	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0
	Staphylinidae	-	Adult	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Trogidae	-	Adult	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Scarabaeidae	-	Adult	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = absent; 1 = present

CFDS/C-1

Taxon			Sampling Interval	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Order	Family	Species	Cycle Days	0 - 7	8 - 14	15 - 21	22 - 28	29 - 35	36 - 42	43 - 49	50 - 56	57 - 63	64 - 70	71 -77	78 -84	85 -91	92 - 98	99 -105	106 - 112	113 - 119	120 - 126	127 - 133	134 - 141
Diptera	Calliphoridae	*Chrysomya albiceps*	Adult	0	0	0	0	0	1	1	0	1	1	1	0	0	0	0	0	0	0	0	0
		Chrysomya chloropyga	Adult	0	0	0	0	0	1	1	0	1	1	1	0	1	0	0	0	0	0	0	0
		Chrysomya marginalis	Adult	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Lucillia spp.	Adult	0	1	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0
		Calliphora vicina	Adult	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0
	Muscidae	-	Adult	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Piophilidae	-	Adult	1	0	0	0	0	1	1	1	1	1	1	1	0	0	1	0	0	0	0	0
	Sarcophagidae	-	Adult	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
Coleoptera	Cleridae	*Necrobia rufipes*	Adult	0	1	0	0	0	1	1	0	1	1	1	1	1	1	1	0	0	1	1	0
	Dermestidae	*Dermestes maculatus*	Adult	0	0	0	0	0	0	1	0	1	1	1	1	0	1	1	0	0	0	1	0
	Dermestidae	*Dermestes maculatus*	Larva	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
	Histeridae	-	Adult	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	0	1	1	1	1
	Silphidae	-	Adult	0	0	0	0	0	1	0	0	1	1	0	1	1	0	1	1	1	1	1	0
	Silphidae	-	Larva	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0
	Staphylinidae	-	Adult	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Trogidae	-	Adult	1	1	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
	Scarabaeidae	-	Adult	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = absent; 1 = present

CFDS/C-2

Taxon			Sampling Interval	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Order	Family	Species	Cycle Days	0 - 7	8 - 14	15 - 21	22 - 28	29 - 35	36 - 42	43 - 49	50 - 56	57 - 63	64 - 70	71 -77	78 -84	85 -91	92 - 98	99 -105	106 - 112	113 - 119	120 - 126	127 - 133	134 - 141
Diptera	Calliphoridae	*Chrysomya albiceps*	Adult	0	0	0	0	0	1	1	0	0	1	1	1	0	0	0	0	0	0	0	0
		Chrysomya chloropyga	Adult	0	0	0	0	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0
		Chrysomya marginalis	Adult	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Lucillia spp.	Adult	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0
		Calliphora vicina	Adult	0	1	1	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0
	Muscidae	-	Adult	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Piophilidae	-	Adult	1	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1
	Sarcophagidae	-	Adult	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Coleoptera	Cleridae	*Necrobia rufipes*	Adult	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	0	1	1	1	1
	Dermestidae	*Dermestes maculatus*	Adult	0	0	0	0	0	1	0	0	0	0	0	1	0	0	1	0	1	1	0	0
	Dermestidae	*Dermestes maculatus*	Larva	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
	Histeridae	-	Adult	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	0	1	0	1	0
	Silphidae	-	Adult	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0
	Silphidae	-	Larva	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0
	Staphylinidae	-	Adult	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
	Trogidae	-	Adult	1	1	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0
	Scarabaeidae	-	Adult	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = absent; 1 = present

COMBINED CFDS/C

Taxon			Sampling Interval	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Order	Family	Species	Cycle Days	0 - 7	8 - 14	15 - 21	22 - 28	29 - 35	36 - 42	43 - 49	50 - 56	57 - 63	64 - 70	71 -77	78 -84	85 -91	92 - 98	99 -105	106 - 112	113 - 119	120 - 126	127 - 133	134 - 141
Diptera	Calliphoridae	*Chrysomya albiceps*	Adult	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0
		Chrysomya chloropyga	Adult	0	0	0	0	0	1	1	0	1	1	1	0	1	0	0	0	0	0	0	0
		Chrysomya marginalis	Adult	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Lucillia spp.	Adult	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0
		Calliphora vicina	Adult	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0
	Muscidae	-	Adult	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Piophilidae	-	Adult	1	0	0	0	0	1	1	1	1	1	1	1	0	0	1	0	0	0	0	0
	Sarcophagidae	-	Adult	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Coleoptera	Cleridae	*Necrobia rufipes*	Adult	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	0	0	1	1	0
	Dermestidae	*Dermestes maculatus*	Adult	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0
	Dermestidae	*Dermestes maculatus*	Larva	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
	Histeridae	-	Adult	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	1	0	1	0
	Silphidae	-	Adult	0	0	0	0	0	1	0	0	1	1	0	1	1	0	1	1	1	1	1	0
	Silphidae	-	Larva	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0
	Staphylinidae	-	Adult	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Trogidae	-	Adult	1	1	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
	Scarabaeidae	-	Adult	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = absent; 1 = present

Appendix A5.5: **Raw occurrence matrices for all carcasses in Cycle 2 | S-2015.**

CFDS/O-1

	Taxon		Sampling Interval	1	2	3	4	5	6	7	8	9	10	11
Order	Family	Species	Cycle Days	0 - 7	8 - 14	15 - 21	22 - 28	29 - 35	36 - 42	43 - 49	50 - 56	57 - 63	64 - 70	71 -77
Diptera	Calliphoridae	*Chrysomya albiceps*	Adult	1	1	1	1	0	0	0	0	0	0	0
		Chrysomya chloropyga	Adult	0	0	0	0	0	0	0	0	0	0	0
		Chrysomya marginalis	Adult	1	0	1	0	0	0	0	0	0	0	0
		Lucillia spp.	Adult	1	1	1	1	1	0	0	0	0	0	0
		Calliphora vicina	Adult	0	0	0	0	0	0	0	0	0	0	0
	Muscidae	-	Adult	1	1	1	1	0	1	0	0	1	0	0
	Piophilidae	-	Adult	1	1	0	1	1	1	1	1	1	1	0
	Sarcophagidae	-	Adult	1	0	0	0	0	0	0	0	0	0	0
Coleoptera	Cleridae	*Necrobia rufipes*	Adult	1	1	1	1	1	1	1	1	1	1	1
	Dermestidae	*Dermestes maculatus*	Adult	0	1	1	1	1	1	1	1	1	1	1
	Dermestidae	*Dermestes maculatus*	Larva	0	0	1	1	1	1	1	1	1	1	1
	Histeridae	-	Adult	1	1	1	1	1	1	1	1	1	1	1
	Silphidae	-	Adult	0	0	0	0	0	0	0	0	0	0	0
	Silphidae	-	Larva	0	0	0	0	0	0	0	0	0	0	0
	Staphylinidae	-	Adult	0	0	0	0	0	0	0	0	0	0	0
	Trogidae	-	Adult	0	0	0	0	0	0	0	0	0	0	0
	Scarabaeidae	-	Adult	0	0	0	0	0	0	0	0	0	0	0

0 = absent; 1 = present

CFDS/O-2

	Taxon		Sampling Interval	1	2	3	4	5	6	7	8	9	10	11
Order	Family	Species	Cycle Days	0 - 7	8 - 14	15 - 21	22 - 28	29 - 35	36 - 42	43 - 49	50 - 56	57 - 63	64 - 70	71 -77
Diptera	Calliphoridae	*Chrysomya albiceps*	Adult	1	1	1	1	0	0	0	0	0	0	0
		Chrysomya chloropyga	Adult	0	0	0	0	0	0	0	0	0	0	0
		Chrysomya marginalis	Adult	0	0	0	0	0	0	0	0	0	0	0
		Lucillia spp.	Adult	1	1	1	1	0	0	0	0	0	0	0
		Calliphora vicina	Adult	0	0	0	0	0	0	0	0	0	0	0
	Muscidae	-	Adult	1	1	1	1	0	0	0	0	0	0	0
	Piophilidae	-	Adult	1	1	0	1	1	0	0	0	0	0	0
	Sarcophagidae	-	Adult	1	0	0	0	0	0	0	0	0	0	0
Coleoptera	Cleridae	*Necrobia rufipes*	Adult	1	1	1	1	1	1	1	1	1	0	0
	Dermestidae	*Dermestes maculatus*	Adult	0	1	1	1	1	0	1	1	1	0	0
	Dermestidae	*Dermestes maculatus*	Larva	0	0	1	1	1	1	1	1	1	0	0
	Histeridae	-	Adult	0	1	1	1	1	0	1	0	0	0	0
	Silphidae	-	Adult	0	0	0	0	0	0	0	0	0	0	0
	Silphidae	-	Larva	0	0	0	0	0	0	0	0	0	0	0
	Staphylinidae	-	Adult	0	0	0	0	0	0	0	0	0	0	0
	Trogidae	-	Adult	0	0	0	0	0	0	0	0	0	0	0
	Scarabaeidae	-	Adult	0	0	0	0	0	0	0	0	0	0	0

0 = absent; 1 = present

COMBINED CFDS/O

	Taxon		Sampling Interval	1	2	3	4	5	6	7	8	9	10	11
Order	Family	Species	Cycle Days	0 - 7	8 - 14	15 - 21	22 - 28	29 - 35	36 - 42	43 - 49	50 - 56	57 - 63	64 - 70	71 -77
Diptera	Calliphoridae	*Chrysomya albiceps*	Adult	1	1	1	1	0	0	0	0	0	0	0
		Chrysomya chloropyga	Adult	0	0	0	0	0	0	0	0	0	0	0
		Chrysomya marginalis	Adult	0	0	0	0	0	0	0	0	0	0	0
		Lucillia spp.	Adult	1	1	1	1	0	0	0	0	0	0	0
		Calliphora vicina	Adult	0	0	0	0	0	0	0	0	0	0	0
	Muscidae	-	Adult	1	1	1	1	0	0	0	0	0	0	0
	Piophilidae	-	Adult	1	1	0	1	1	0	0	0	0	0	0
	Sarcophagidae	-	Adult	1	0	0	0	0	0	0	0	0	0	0
Coleoptera	Cleridae	*Necrobia rufipes*	Adult	1	1	1	1	1	1	1	1	1	0	0
	Dermestidae	*Dermestes maculatus*	Adult	0	1	1	1	1	0	1	1	1	0	0
	Dermestidae	*Dermestes maculatus*	Larva	0	0	1	1	1	1	1	1	1	0	0
	Histeridae	-	Adult	0	1	1	1	1	0	1	0	0	0	0
	Silphidae	-	Adult	0	0	0	0	0	0	0	0	0	0	0
	Silphidae	-	Larva	0	0	0	0	0	0	0	0	0	0	0
	Staphylinidae	-	Adult	0	0	0	0	0	0	0	0	0	0	0
	Trogidae	-	Adult	0	0	0	0	0	0	0	0	0	0	0
	Scarabaeidae	-	Adult	0	0	0	0	0	0	0	0	0	0	0

0 = absent; 1 = present

CFDS/C-1

	Taxon		Sampling Interval	1	2	3	4	5	6	7	8	9	10	11
Order	Family	Species	Cycle Days	0 - 7	8 - 14	15 - 21	22 - 28	29 - 35	36 - 42	43 - 49	50 - 56	57 - 63	64 - 70	71 -77
Diptera	Calliphoridae	*Chrysomya albiceps*	Adult	1	1	1	1	1	0	0	0	0	0	0
		Chrysomya chloropyga	Adult	1	0	0	0	0	0	0	0	0	0	0
		Chrysomya marginalis	Adult	1	1	0	0	0	0	0	0	0	0	0
		Lucillia spp.	Adult	1	1	1	1	0	0	0	0	0	0	0
		Calliphora vicina	Adult	0	0	0	0	0	0	0	0	0	0	0
	Muscidae	-	Adult	1	1	1	0	0	0	0	0	0	0	0
	Piophilidae	-	Adult	1	1	1	1	0	0	0	0	1	0	0
	Sarcophagidae	-	Adult	0	1	0	0	0	0	0	0	0	0	0
Coleoptera	Cleridae	*Necrobia rufipes*	Adult	1	1	1	1	1	1	0	0	1	0	0
	Dermestidae	*Dermestes maculatus*	Adult	1	1	1	1	1	0	0	0	0	0	0
	Dermestidae	*Dermestes maculatus*	Larva	0	0	1	1	1	1	0	0	0	0	0
	Histeridae	-	Adult	0	1	1	1	1	0	0	0	0	0	0
	Silphidae	-	Adult	0	1	1	0	0	0	0	0	0	0	0
	Silphidae	-	Larva	0	0	1	0	0	0	0	0	0	0	0
	Staphylinidae	-	Adult	0	0	0	0	0	0	0	0	0	0	0
	Trogidae	-	Adult	0	0	0	0	0	0	0	0	0	0	0
	Scarabaeidae	-	Adult	0	0	0	0	0	0	0	0	0	0	0

0 = absent; 1 = present

CFDS/C-2

	Taxon		Sampling Interval	1	2	3	4	5	6	7	8	9	10	11
Order	Family	Species	Cycle Days	0 - 7	8 - 14	15 - 21	22 - 28	29 - 35	36 - 42	43 - 49	50 - 56	57 - 63	64 - 70	71 -77
Diptera	Calliphoridae	*Chrysomya albiceps*	Adult	1	1	1	1	1	0	0	0	0	0	0
		Chrysomya chloropyga	Adult	0	0	0	0	0	0	0	0	0	0	0
		Chrysomya marginalis	Adult	1	1	1	0	0	0	0	0	0	0	0
		Lucillia spp.	Adult	1	1	1	1	0	0	0	0	0	0	0
		Calliphora vicina	Adult	0	0	0	0	0	0	0	0	0	0	0
	Muscidae	-	Adult	1	1	1	1	0	0	0	0	0	0	0
	Piophilidae	-	Adult	0	1	1	1	1	0	1	1	1	1	1
	Sarcophagidae	-	Adult	0	0	0	0	0	0	0	0	0	0	0
Coleoptera	Cleridae	*Necrobia rufipes*	Adult	1	1	1	1	1	1	1	1	1	1	1
	Dermestidae	*Dermestes maculatus*	Adult	1	1	1	1	1	1	0	1	1	1	1
	Dermestidae	*Dermestes maculatus*	Larva	0	0	1	1	1	1	1	1	1	1	1
	Histeridae	-	Adult	0	1	1	1	0	1	0	1	1	1	1
	Silphidae	-	Adult	0	1	0	0	0	0	0	0	0	0	0
	Silphidae	-	Larva	0	0	0	0	0	0	0	0	0	0	0
	Staphylinidae	-	Adult	0	0	0	0	0	0	0	0	0	0	0
	Trogidae	-	Adult	0	0	0	0	0	0	0	0	0	0	0
	Scarabaeidae	-	Adult	0	0	0	0	0	0	0	0	0	0	0

0 = absent; 1 = present

COMBINED CFDS/C

	Taxon		Sampling Interval	1	2	3	4	5	6	7	8	9	10	11
Order	Family	Species	Cycle Days	0 - 7	8 - 14	15 - 21	22 - 28	29 - 35	36 - 42	43 - 49	50 - 56	57 - 63	64 - 70	71 -77
Diptera	Calliphoridae	*Chrysomya albiceps*	Adult	1	1	1	1	1	0	0	0	0	0	0
		Chrysomya chloropyga	Adult	0	0	0	0	0	0	0	0	0	0	0
		Chrysomya marginalis	Adult	1	1	0	0	0	0	0	0	0	0	0
		Lucillia spp.	Adult	1	1	1	1	0	0	0	0	0	0	0
		Calliphora vicina	Adult	0	0	0	0	0	0	0	0	0	0	0
	Muscidae	-	Adult	1	1	1	0	0	0	0	0	0	0	0
	Piophilidae	-	Adult	0	1	1	1	0	0	0	0	1	0	0
	Sarcophagidae	-	Adult	0	0	0	0	0	0	0	0	0	0	0
Coleoptera	Cleridae	*Necrobia rufipes*	Adult	1	1	1	1	1	1	0	0	1	0	0
	Dermestidae	*Dermestes maculatus*	Adult	1	1	1	1	1	0	0	0	0	0	0
	Dermestidae	*Dermestes maculatus*	Larva	0	0	1	1	1	1	0	0	0	0	0
	Histeridae	-	Adult	0	1	1	1	0	0	0	0	0	0	0
	Silphidae	-	Adult	0	1	0	0	0	0	0	0	0	0	0
	Silphidae	-	Larva	0	0	0	0	0	0	0	0	0	0	0
	Staphylinidae	-	Adult	0	0	0	0	0	0	0	0	0	0	0
	Trogidae	-	Adult	0	0	0	0	0	0	0	0	0	0	0
	Scarabaeidae	-	Adult	0	0	0	0	0	0	0	0	0	0	0

0 = absent; 1 = present

Appendix A5.6: Raw occurrence matrices for all carcasses in Cycle 3 | W-2015.

CFDS/O-1

Taxon			Sampling Interval	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Order	Family	Species	Cycle Days	0 - 7	8 - 14	15 - 21	22 - 28	29 - 35	36 - 42	43 - 49	50 - 56	57 - 63	64 - 70	71 -77	78 -84	85 -91	92 - 98	99 -105	106 - 112	113 - 119	120 - 126	127 - 133	134 - 141
Diptera	Calliphoridae	*Chrysomya albiceps*	Adult	0	0	0	0	0	0	0	1	1	0	1	1	1	0	1	0	0	0	0	0
		Chrysomya chloropyga	Adult	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0
		Chrysomya marginalis	Adult	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Lucillia spp.	Adult	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0
		Calliphora vicina	Adult	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
	Muscidae	-	Adult	0	0	0	1	0	1	1	1	1	0	0	1	0	1	1	1	0	0	0	0
	Piophilidae	-	Adult	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0
	Sarcophagidae	-	Adult	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
Coleoptera	Cleridae	*Necrobia rufipes*	Adult	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Dermestidae	*Dermestes maculatus*	Adult	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	0	0
	Dermestidae	*Dermestes maculatus*	Larva	1	0	0	1	0	0	0	0	0	0	1	0	1	1	1	1	1	1	1	1
	Histeridae	-	Adult	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0
	Silphidae	-	Adult	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0
	Silphidae	-	Larva	1	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0
	Staphylinidae	-	Adult	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Trogidae	-	Adult	0	0	1	0	1	1	1	1	0	0	0	0	1	0	0	0	0	0	0	0
	Scarabaeidae	-	Adult	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = absent; 1 = present

CFDS/O-2

Taxon			Sampling Interval	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Order	Family	Species	Cycle Days	0 - 7	8 - 14	15 - 21	22 - 28	29 - 35	36 - 42	43 - 49	50 - 56	57 - 63	64 - 70	71 -77	78 -84	85 -91	92 - 98	99 -105	106 - 112	113 - 119	120 - 126	127 - 133	134 - 141
Diptera	Calliphoridae	*Chrysomya albiceps*	Adult	0	0	0	0	1	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0
		Chrysomya chloropyga	Adult	0	0	0	0	1	1	0	1	1	1	1	1	0	1	0	0	0	0	0	0
		Chrysomya marginalis	Adult	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0
		Lucillia spp.	Adult	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0
		Calliphora vicina	Adult	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0
	Muscidae	-	Adult	0	0	0	1	0	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0
	Piophilidae	-	Adult	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0
	Sarcophagidae	-	Adult	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Coleoptera	Cleridae	*Necrobia rufipes*	Adult	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Dermestidae	*Dermestes maculatus*	Adult	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1
	Dermestidae	*Dermestes maculatus*	Larva	0	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	1	1	1
	Histeridae	-	Adult	0	0	0	0	0	1	1	0	1	1	1	1	1	1	1	1	1	1	1	0
	Silphidae	-	Adult	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0
	Silphidae	-	Larva	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0
	Staphylinidae	-	Adult	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Trogidae	-	Adult	1	1	1	1	1	1	1	1	1	0	0	0	1	0	0	0	0	0	0	0
	Scarabaeidae	-	Adult	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = absent; 1 = present

COMBINED CFDS/O

Taxon			Sampling Interval	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Order	Family	Species	Cycle Days	0 - 7	8 - 14	15 - 21	22 - 28	29 - 35	36 - 42	43 - 49	50 - 56	57 - 63	64 - 70	71 -77	78 -84	85 -91	92 - 98	99 -105	106 - 112	113 - 119	120 - 126	127 - 133	134 - 141
Diptera	Calliphoridae	*Chrysomya albiceps*	Adult	0	0	0	0	0	0	0	1	1	0	1	1	1	0	1	0	0	0	0	0
		Chrysomya chloropyga	Adult	0	0	0	0	0	1	0	1	1	1	1	1	0	0	0	0	0	0	0	0
		Chrysomya marginalis	Adult	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Lucillia spp.	Adult	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0
		Calliphora vicina	Adult	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
	Muscidae	-	Adult	0	0	0	1	0	1	1	1	1	0	0	1	0	1	1	1	0	0	0	0
	Piophilidae	-	Adult	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0
	Sarcophagidae	-	Adult	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Coleoptera	Cleridae	*Necrobia rufipes*	Adult	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Dermestidae	*Dermestes maculatus*	Adult	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	0	0
	Dermestidae	*Dermestes maculatus*	Larva	0	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	1	1	1
	Histeridae	-	Adult	0	0	0	0	0	1	1	0	1	1	1	1	1	1	1	1	1	0	0	0
	Silphidae	-	Adult	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0
	Silphidae	-	Larva	0	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0
	Staphylinidae	-	Adult	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Trogidae	-	Adult	0	0	1	0	1	1	1	1	0	0	0	0	1	0	0	0	0	0	0	0
	Scarabaeidae	-	Adult	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = absent; 1 = present

CFDS/C-1

Taxon			Sampling Interval	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Order	Family	Species	Cycle Days	0 - 7	8 - 14	15 - 21	22 - 28	29 - 35	36 - 42	43 - 49	50 - 56	57 - 63	64 - 70	71 -77	78 -84	85 -91	92 - 98	99 -105	106 - 112	113 - 119	120 - 126	127 - 133	134 - 141
Diptera	Calliphoridae	*Chrysomya albiceps*	Adult	0	0	0	0	1	0	0	0	0	1	1	1	1	1	0	1	0	0	0	0
		Chrysomya chloropyga	Adult	0	0	0	0	1	0	0	0	1	1	1	0	1	0	1	0	0	0	0	0
		Chrysomya marginalis	Adult	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
		Lucillia spp.	Adult	0	1	0	0	1	0	1	1	1	1	1	1	1	0	0	0	0	1	0	0
		Calliphora vicina	Adult	0	1	1	1	1	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0
	Muscidae	-	Adult	0	0	1	0	1	0	0	0	1	0	0	1	1	1	1	1	0	0	0	0
	Piophilidae	-	Adult	0	0	0	0	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0
	Sarcophagidae	-	Adult	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Coleoptera	Cleridae	*Necrobia rufipes*	Adult	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Dermestidae	*Dermestes maculatus*	Adult	0	0	0	0	0	1	1	1	1	1	1	1	1	1	0	0	0	1	1	0
	Dermestidae	*Dermestes maculatus*	Larva	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1
	Histeridae	-	Adult	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	0	0	0	0	1
	Silphidae	-	Adult	0	0	0	0	0	0	1	1	1	1	1	0	1	1	1	1	0	1	1	0
	Silphidae	-	Larva	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	0	0	1	0
	Staphylinidae	-	Adult	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Trogidae	-	Adult	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Scarabaeidae	-	Adult	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = absent; 1 = present

CFDS/C-2

Taxon			Sampling Interval	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Order	Family	Species	Cycle Days	0 - 7	8 - 14	15 - 21	22 - 28	29 - 35	36 - 42	43 - 49	50 - 56	57 - 63	64 - 70	71 -77	78 -84	85 -91	92 - 98	99 -105	106 - 112	113 - 119	120 - 126	127 - 133	134 - 141
Diptera	Calliphoridae	*Chrysomya albiceps*	Adult	0	0	0	0	0	0	0	1	0	1	1	1	1	0	0	1	0	0	0	0
		Chrysomya chloropyga	Adult	0	0	0	0	0	0	0	0	1	1	1	0	1	1	1	0	0	0	0	0
		Chrysomya marginalis	Adult	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
		Lucillia spp.	Adult	1	1	0	1	1	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0
		Calliphora vicina	Adult	1	0	1	0	1	0	1	1	0	1	1	0	0	0	0	0	0	0	0	0
	Muscidae	-	Adult	0	1	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	0	0	0
	Piophilidae	-	Adult	0	0	0	0	1	0	1	1	1	1	1	1	1	1	0	0	0	0	0	0
	Sarcophagidae	-	Adult	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Coleoptera	Cleridae	*Necrobia rufipes*	Adult	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Dermestidae	*Dermestes maculatus*	Adult	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0
	Dermestidae	*Dermestes maculatus*	Larva	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	1	1	1	1	1
	Histeridae	-	Adult	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	0	0
	Silphidae	-	Adult	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0
	Silphidae	-	Larva	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0
	Staphylinidae	-	Adult	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
	Trogidae	-	Adult	1	1	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
	Scarabaeidae	-	Adult	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = absent; 1 = present

COMBINED CFDS/C

Taxon			Sampling Interval	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Order	Family	Species	Cycle Days	0 - 7	8 - 14	15 - 21	22 - 28	29 - 35	36 - 42	43 - 49	50 - 56	57 - 63	64 - 70	71 -77	78 -84	85 -91	92 - 98	99 -105	106 - 112	113 - 119	120 - 126	127 - 133	134 - 141
Diptera	Calliphoridae	*Chrysomya albiceps*	Adult	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	1	0	0	0	0
		Chrysomya chloropyga	Adult	0	0	0	0	0	0	0	0	1	1	1	0	1	0	1	0	0	0	0	0
		Chrysomya marginalis	Adult	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
		Lucillia spp.	Adult	0	1	0	0	1	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0
		Calliphora vicina	Adult	0	0	1	0	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0
	Muscidae	-	Adult	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0
	Piophilidae	-	Adult	0	0	0	0	1	0	1	1	1	1	1	1	1	1	0	0	0	0	0	0
	Sarcophagidae	-	Adult	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Coleoptera	Cleridae	*Necrobia rufipes*	Adult	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Dermestidae	*Dermestes maculatus*	Adult	0	0	0	0	0	1	1	1	1	1	1	1	1	1	0	0	0	1	0	0
	Dermestidae	*Dermestes maculatus*	Larva	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1
	Histeridae	-	Adult	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	0	0	0	0	0
	Silphidae	-	Adult	0	0	0	0	0	0	1	1	1	1	1	0	1	1	1	1	0	0	0	0
	Silphidae	-	Larva	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0
	Staphylinidae	-	Adult	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Trogidae	-	Adult	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Scarabaeidae	-	Adult	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0 = absent; 1 = present

<u>Appendix A5.7:</u> Raw occurrence matrices for all carcasses in Cycle 4 | S-2016.

CFDS/O-1

Taxon			Sampling Interval	1	2	3	4	5	6	7	8	9	10	11
Order	**Family**	**Species**	**Cycle Days**	0 - 7	8 - 14	15 - 21	22 - 28	29 - 35	36 - 42	43 - 49	50 - 56	57 - 63	64 - 70	71 -77
Diptera		*Chrysomya albiceps*	Adult	1	1	1	0	0	0	0	0	0	0	0
		Chrysomya chloropyga	Adult	0	0	0	0	0	0	0	0	0	0	0
	Calliphoridae	*Chrysomya marginalis*	Adult	1	1	0	0	0	0	0	0	0	0	0
		Lucillia spp.	Adult	1	1	0	0	1	1	0	0	0	0	0
		Calliphora vicina	Adult	0	0	0	0	0	0	0	0	0	0	0
	Muscidae	-	Adult	1	1	1	1	1	1	0	0	0	0	0
	Piophilidae	-	Adult	1	1	1	1	1	0	1	0	1	0	0
	Sarcophagidae	-	Adult	1	1	0	0	0	0	0	0	0	0	0
Coleoptera	Cleridae	*Necrobia rufipes*	Adult	1	1	1	1	1	1	1	1	1	1	1
	Dermestidae	*Dermestes maculatus*	Adult	1	1	1	1	1	1	1	1	1	1	1
	Dermestidae	*Dermestes maculatus*	Larva	0	1	1	1	1	1	1	1	1	1	1
	Histeridae	-	Adult	1	1	1	1	1	1	1	0	1	1	0
	Silphidae	-	Adult	0	0	0	0	0	0	0	0	0	0	0
	Silphidae	-	Larva	0	0	0	0	0	0	0	0	0	0	0
	Staphylinidae	-	Adult	0	0	0	0	0	0	0	0	0	0	0
	Trogidae	-	Adult	0	0	0	0	0	0	0	0	0	0	0
	Scarabaeidae	-	Adult	0	0	0	0	0	0	0	0	0	0	0

0 = absent; 1 = present

CFDS/O-2

Taxon			Sampling Interval	1	2	3	4	5	6	7	8	9	10	11
Order	**Family**	**Species**	**Cycle Days**	0 - 7	8 - 14	15 - 21	22 - 28	29 - 35	36 - 42	43 - 49	50 - 56	57 - 63	64 - 70	71 -77
Diptera		*Chrysomya albiceps*	Adult	1	1	1	0	0	0	0	0	0	0	0
		Chrysomya chloropyga	Adult	0	0	0	0	0	0	0	0	0	0	0
	Calliphoridae	*Chrysomya marginalis*	Adult	1	1	0	0	0	0	0	0	0	0	0
		Lucillia spp.	Adult	1	1	1	1	1	1	0	0	0	0	0
		Calliphora vicina	Adult	0	0	0	0	0	0	0	0	0	0	0
	Muscidae	-	Adult	1	1	1	1	1	1	1	1	1	1	1
	Piophilidae	-	Adult	1	0	1	1	1	0	1	0	1	0	0
	Sarcophagidae	-	Adult	0	0	0	0	0	0	0	0	0	0	0
Coleoptera	Cleridae	*Necrobia rufipes*	Adult	1	1	1	1	1	1	1	1	1	1	1
	Dermestidae	*Dermestes maculatus*	Adult	1	1	1	1	1	1	1	1	1	1	1
	Dermestidae	*Dermestes maculatus*	Larva	0	1	1	1	1	1	1	1	1	1	1
	Histeridae	-	Adult	1	1	1	1	0	1	1	1	1	0	1
	Silphidae	-	Adult	0	0	0	0	0	0	0	0	0	0	0
	Silphidae	-	Larva	0	0	0	0	0	0	0	0	0	0	0
	Staphylinidae	-	Adult	1	0	0	0	0	0	0	0	0	0	0
	Trogidae	-	Adult	0	0	0	0	0	0	0	0	0	0	0
	Scarabaeidae	-	Adult	1	0	1	1	0	0	0	0	0	1	0

0 = absent; 1 = present

COMBINED CFDS/O

Taxon			Sampling Interval	1	2	3	4	5	6	7	8	9	10	11
Order	**Family**	**Species**	**Cycle Days**	0 - 7	8 - 14	15 - 21	22 - 28	29 - 35	36 - 42	43 - 49	50 - 56	57 - 63	64 - 70	71 -77
Diptera		*Chrysomya albiceps*	Adult	1	1	1	0	0	0	0	0	0	0	0
		Chrysomya chloropyga	Adult	0	0	0	0	0	0	0	0	0	0	0
	Calliphoridae	*Chrysomya marginalis*	Adult	1	1	0	0	0	0	0	0	0	0	0
		Lucillia spp.	Adult	1	1	0	0	1	1	0	0	0	0	0
		Calliphora vicina	Adult	0	0	0	0	0	0	0	0	0	0	0
	Muscidae	-	Adult	1	1	1	1	1	1	0	0	0	0	0
	Piophilidae	-	Adult	1	0	1	1	1	0	1	0	1	0	0
	Sarcophagidae	-	Adult	0	0	0	0	0	0	0	0	0	0	0
Coleoptera	Cleridae	*Necrobia rufipes*	Adult	1	1	1	1	1	1	1	1	1	1	1
	Dermestidae	*Dermestes maculatus*	Adult	1	1	1	1	1	1	1	1	1	1	1
	Dermestidae	*Dermestes maculatus*	Larva	0	1	1	1	1	1	1	1	1	1	1
	Histeridae	-	Adult	1	1	1	1	0	1	1	0	1	0	0
	Silphidae	-	Adult	0	0	0	0	0	0	0	0	0	0	0
	Silphidae	-	Larva	0	0	0	0	0	0	0	0	0	0	0
	Staphylinidae	-	Adult	0	0	0	0	0	0	0	0	0	0	0
	Trogidae	-	Adult	0	0	0	0	0	0	0	0	0	0	0
	Scarabaeidae	-	Adult	0	0	0	0	0	0	0	0	0	0	0

0 = absent; 1 = present

CFDS/C-1

Taxon			Sampling Interval	1	2	3	4	5	6	7	8	9	10	11
Order	**Family**	**Species**	**Cycle Days**	0 - 7	8 - 14	15 - 21	22 - 28	29 - 35	36 - 42	43 - 49	50 - 56	57 - 63	64 - 70	71 -77
Diptera		*Chrysomya albiceps*	Adult	1	1	1	1	0	0	0	0	0	0	0
		Chrysomya chloropyga	Adult	0	0	0	0	0	0	0	0	0	0	0
	Calliphoridae	*Chrysomya marginalis*	Adult	1	0	1	0	0	0	0	0	0	0	0
		Lucillia spp.	Adult	1	1	1	1	0	1	0	0	0	0	0
		Calliphora vicina	Adult	1	0	0	0	0	0	0	0	0	0	0
	Muscidae	-	Adult	1	1	1	1	1	1	0	1	0	0	0
	Piophilidae	-	Adult	0	1	1	1	1	1	0	0	0	0	1
	Sarcophagidae	-	Adult	1	0	0	0	0	0	0	0	0	0	0
Coleoptera	Cleridae	*Necrobia rufipes*	Adult	1	1	1	1	1	1	1	1	1	0	1
	Dermestidae	*Dermestes maculatus*	Adult	1	1	0	1	1	0	0	0	0	0	0
	Dermestidae	*Dermestes maculatus*	Larva	0	1	1	1	1	1	1	1	0	0	0
	Histeridae	-	Adult	0	1	0	1	0	1	0	0	0	0	0
	Silphidae	-	Adult	0	1	0	0	0	0	0	0	0	0	0
	Silphidae	-	Larva	0	0	0	0	0	0	0	0	0	0	0
	Staphylinidae	-	Adult	1	0	0	0	0	0	0	0	0	0	0
	Trogidae	-	Adult	0	0	0	0	0	0	0	0	0	0	0
	Scarabaeidae	-	Adult	0	0	0	1	0	0	0	0	0	0	0

0 = absent; 1 = present

CFDS/C-2

Taxon			Sampling Interval	1	2	3	4	5	6	7	8	9	10	11
Order	**Family**	**Species**	**Cycle Days**	0 - 7	8 - 14	15 - 21	22 - 28	29 - 35	36 - 42	43 - 49	50 - 56	57 - 63	64 - 70	71 -77
Diptera		*Chrysomya albiceps*	Adult	1	0	1	1	0	0	0	0	0	0	0
		Chrysomya chloropyga	Adult	0	0	0	0	0	0	0	0	0	0	0
	Calliphoridae	*Chrysomya marginalis*	Adult	1	0	1	0	0	0	0	0	0	0	0
		Lucillia spp.	Adult	1	0	1	1	1	1	0	0	0	0	0
		Calliphora vicina	Adult	0	0	0	0	0	0	0	0	0	0	0
	Muscidae	-	Adult	1	1	1	1	1	1	0	1	0	0	0
	Piophilidae	-	Adult	1	1	0	1	0	0	0	1	0	0	0
	Sarcophagidae	-	Adult	0	0	0	0	0	0	0	0	0	0	0
Coleoptera	Cleridae	*Necrobia rufipes*	Adult	0	1	1	1	1	1	1	1	1	0	1
	Dermestidae	*Dermestes maculatus*	Adult	1	0	1	0	1	0	0	0	0	0	0
	Dermestidae	*Dermestes maculatus*	Larva	0	1	1	1	1	1	0	1	0	0	0
	Histeridae	-	Adult	1	1	0	0	0	0	0	0	0	0	0
	Silphidae	-	Adult	0	0	0	0	0	0	0	0	0	0	0
	Silphidae	-	Larva	0	0	0	0	0	0	0	0	0	0	0
	Staphylinidae	-	Adult	0	0	0	0	0	0	0	0	0	0	0
	Trogidae	-	Adult	0	0	0	0	0	0	0	0	0	0	0
	Scarabaeidae	-	Adult	0	0	0	0	0	0	0	0	0	0	0

0 = absent; 1 = present

COMBINED CFDS/C

Taxon			Sampling Interval	1	2	3	4	5	6	7	8	9	10	11
Order	**Family**	**Species**	**Cycle Days**	0 - 7	8 - 14	15 - 21	22 - 28	29 - 35	36 - 42	43 - 49	50 - 56	57 - 63	64 - 70	71 -77
Diptera		*Chrysomya albiceps*	Adult	1	0	1	1	0	0	0	0	0	0	0
		Chrysomya chloropyga	Adult	0	0	0	0	0	0	0	0	0	0	0
	Calliphoridae	*Chrysomya marginalis*	Adult	1	0	1	0	0	0	0	0	0	0	0
		Lucillia spp.	Adult	1	0	1	1	0	1	0	0	0	0	0
		Calliphora vicina	Adult	0	0	0	0	0	0	0	0	0	0	0
	Muscidae	-	Adult	1	1	1	1	1	1	0	1	0	0	0
	Piophilidae	-	Adult	0	1	0	1	0	0	0	0	0	0	0
	Sarcophagidae	-	Adult	0	0	0	0	0	0	0	0	0	0	0
Coleoptera	Cleridae	*Necrobia rufipes*	Adult	0	1	1	1	1	1	1	1	1	0	1
	Dermestidae	*Dermestes maculatus*	Adult	1	0	0	0	1	0	0	0	0	0	0
	Dermestidae	*Dermestes maculatus*	Larva	0	1	1	1	1	1	0	1	0	0	0
	Histeridae	-	Adult	0	1	0	0	0	0	0	0	0	0	0
	Silphidae	-	Adult	0	0	0	0	0	0	0	0	0	0	0
	Silphidae	-	Larva	0	0	0	0	0	0	0	0	0	0	0
	Staphylinidae	-	Adult	0	0	0	0	0	0	0	0	0	0	0
	Trogidae	-	Adult	0	0	0	0	0	0	0	0	0	0	0
	Scarabaeidae	-	Adult	0	0	0	0	0	0	0	0	0	0	0

0 = absent; 1 = present

Appendix A6.1: Raw data of small mammal scavenger activity

*DT = Day time *DL = Day light ***Line of hashes denotes NULL value**

Carcass	Season	Date	Visit	ArrivalTime	DepartureTime	Sunrise	Sunset	FirstLight	Dusk	VisitDurationMin	DaytimeHrs	DaylightHrs	VisitTime%DT	VisitTime%DL	ArrivalBeforeSunrise	DepartureAfterSunset
CFDS/C-1	W-2015	2015/07/06	1	15:35:25	16:09:54	07:51:00	17:49:00	07:23:00	18:17:00	00:34:29	09:58:00	10:54:00	5.77	5.27	###################	####################
CFDS/C-1	W-2015	2015/07/06	2	16:35:39	17:12:19	07:51:00	17:49:00	07:23:00	18:17:00	00:36:40	09:58:00	10:54:00	6.13	5.61	###################	####################
CFDS/C-1	W-2015	2015/07/06	3	17:53:06	18:07:20	07:51:00	17:49:00	07:23:00	18:17:00	00:14:14	09:58:00	10:54:00	2.38	2.18	###################	####################
CFDS/C-1	W-2015	2015/07/07	1	07:49:25	07:51:08	07:51:00	17:49:00	07:23:00	18:17:00	00:01:43	09:58:00	10:54:00	0.29	0.26	###################	####################
CFDS/C-1	W-2015	2015/07/07	2	08:06:09	08:22:12	07:51:00	17:49:00	07:23:00	18:17:00	00:16:03	09:58:00	10:54:00	2.68	2.45	###################	####################
CFDS/C-1	W-2015	2015/07/07	3	08:49:46	09:20:23	07:51:00	17:49:00	07:23:00	18:17:00	00:30:37	09:58:00	10:54:00	5.12	4.68	###################	####################
CFDS/C-1	W-2015	2015/07/07	4	10:19:55	10:40:10	07:51:00	17:49:00	07:23:00	18:17:00	00:20:15	09:58:00	10:54:00	3.39	3.10	###################	####################
CFDS/C-1	W-2015	2015/07/07	5	12:28:51	12:33:56	07:51:00	17:49:00	07:23:00	18:17:00	00:05:05	09:58:00	10:54:00	0.85	0.78	###################	####################
CFDS/C-1	W-2015	2015/07/07	6	13:20:59	13:29:33	07:51:00	17:49:00	07:23:00	18:17:00	00:08:34	09:58:00	10:54:00	1.43	1.31	###################	####################
CFDS/C-1	W-2015	2015/07/07	7	13:45:03	15:17:56	07:51:00	17:49:00	07:23:00	18:17:00	01:32:53	09:58:00	10:54:00	15.53	14.20	###################	####################
CFDS/C-1	W-2015	2015/07/07	8	15:52:35	15:54:25	07:51:00	17:49:00	07:23:00	18:17:00	00:01:50	09:58:00	10:54:00	0.31	0.28	###################	####################
CFDS/C-1	W-2015	2015/07/07	9	16:05:17	16:57:38	07:51:00	17:49:00	07:23:00	18:17:00	00:52:21	09:58:00	10:54:00	8.75	8.00	###################	####################
CFDS/C-1	W-2015	2015/07/07	10	17:18:10	17:29:53	07:51:00	17:49:00	07:23:00	18:17:00	00:11:43	09:58:00	10:54:00	1.96	1.79	###################	####################
CFDS/C-1	W-2015	2015/07/07	11	17:44:18	17:49:21	07:51:00	17:49:00	07:23:00	18:17:00	00:05:03	09:58:00	10:54:00	0.84	0.77	###################	####################
CFDS/C-1	W-2015	2015/07/08	1	07:48:05	08:05:11	07:50:00	17:50:00	07:23:00	18:17:00	00:17:06	10:00:00	10:54:00	2.85	2.61	###################	####################
CFDS/C-1	W-2015	2015/07/08	2	09:20:21	09:36:25	07:50:00	17:50:00	07:23:00	18:17:00	00:16:04	10:00:00	10:54:00	2.68	2.46	###################	####################
CFDS/C-1	W-2015	2015/07/08	3	11:17:06	12:07:07	07:50:00	17:50:00	07:23:00	18:17:00	00:50:01	10:00:00	10:54:00	8.34	7.65	###################	####################
CFDS/C-1	W-2015	2015/07/08	4	12:20:09	12:34:26	07:50:00	17:50:00	07:23:00	18:17:00	00:14:17	10:00:00	10:54:00	2.38	2.18	###################	####################
CFDS/C-1	W-2015	2015/07/08	5	14:37:46	16:09:52	07:50:00	17:50:00	07:23:00	18:17:00	01:32:06	10:00:00	10:54:00	15.35	14.08	###################	####################
CFDS/C-1	W-2015	2015/07/08	6	16:46:25	17:22:12	07:50:00	17:50:00	07:23:00	18:17:00	00:35:47	10:00:00	10:54:00	5.96	5.47	###################	####################
CFDS/C-1	W-2015	2015/07/08	7	17:37:43	17:41:31	07:50:00	17:50:00	07:23:00	18:17:00	00:03:48	10:00:00	10:54:00	0.63	0.58	###################	####################
CFDS/C-1	W-2015	2015/07/09	1	08:38:14	08:47:58	07:50:00	17:51:00	07:23:00	18:18:00	00:09:44	10:01:00	10:55:00	1.62	1.49	###################	####################
CFDS/C-1	W-2015	2015/07/09	2	09:10:49	09:48:29	07:50:00	17:51:00	07:23:00	18:18:00	00:37:40	10:01:00	10:55:00	6.27	5.75	###################	####################
CFDS/C-1	W-2015	2015/07/09	3	10:56:08	11:37:29	07:50:00	17:51:00	07:23:00	18:18:00	00:41:21	10:01:00	10:55:00	6.88	6.31	###################	####################
CFDS/C-1	W-2015	2015/07/09	4	12:37:00	13:26:51	07:50:00	17:51:00	07:23:00	18:18:00	00:49:51	10:01:00	10:55:00	8.29	7.61	###################	####################
CFDS/C-1	W-2015	2015/07/09	5	15:36:04	16:23:21	07:50:00	17:51:00	07:23:00	18:18:00	00:47:17	10:01:00	10:55:00	7.87	7.22	###################	####################
CFDS/C-1	W-2015	2015/07/09	6	16:57:16	17:00:43	07:50:00	17:51:00	07:23:00	18:18:00	00:03:27	10:01:00	10:55:00	0.57	0.53	###################	####################
CFDS/C-1	W-2015	2015/07/10	1	08:06:47	08:06:49	07:50:00	17:51:00	07:23:00	18:18:00	00:00:02	10:01:00	10:55:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/07/10	2	08:27:46	08:42:24	07:50:00	17:51:00	07:23:00	18:18:00	00:14:38	10:01:00	10:55:00	2.43	2.23	###################	####################
CFDS/C-1	W-2015	2015/07/10	3	09:09:23	09:18:31	07:50:00	17:51:00	07:23:00	18:18:00	00:09:08	10:01:00	10:55:00	1.52	1.39	###################	####################
CFDS/C-1	W-2015	2015/07/10	4	10:12:29	10:17:41	07:50:00	17:51:00	07:23:00	18:18:00	00:05:12	10:01:00	10:55:00	0.87	0.79	###################	####################
CFDS/C-1	W-2015	2015/07/10	5	12:35:44	13:05:19	07:50:00	17:51:00	07:23:00	18:18:00	00:29:35	10:01:00	10:55:00	4.92	4.52	###################	####################
CFDS/C-1	W-2015	2015/07/10	6	13:15:09	13:18:54	07:50:00	17:51:00	07:23:00	18:18:00	00:03:45	10:01:00	10:55:00	0.62	0.57	###################	####################
CFDS/C-1	W-2015	2015/07/10	7	14:00:35	14:19:01	07:50:00	17:51:00	07:23:00	18:18:00	00:18:26	10:01:00	10:55:00	3.07	2.81	###################	####################
CFDS/C-1	W-2015	2015/07/10	8	14:28:02	14:39:28	07:50:00	17:51:00	07:23:00	18:18:00	00:11:26	10:01:00	10:55:00	1.9	1.75	###################	####################
CFDS/C-1	W-2015	2015/07/10	9	15:06:54	15:12:28	07:50:00	17:51:00	07:23:00	18:18:00	00:05:34	10:01:00	10:55:00	0.93	0.85	###################	####################
CFDS/C-1	W-2015	2015/07/10	10	15:26:32	15:44:37	07:50:00	17:51:00	07:23:00	18:18:00	00:18:05	10:01:00	10:55:00	3.01	2.76	###################	####################
CFDS/C-1	W-2015	2015/07/10	11	15:54:16	16:10:25	07:50:00	17:51:00	07:23:00	18:18:00	00:16:09	10:01:00	10:55:00	2.69	2.47	###################	####################
CFDS/C-1	W-2015	2015/07/10	12	17:23:44	17:59:21	07:50:00	17:51:00	07:23:00	18:18:00	00:35:37	10:01:00	10:55:00	5.93	5.44	###################	####################
CFDS/C-1	W-2015	2015/07/11	1	08:27:00	08:32:20	07:50:00	17:52:00	07:22:00	18:19:00	00:05:20	10:02:00	10:57:00	0.89	0.81	###################	####################
CFDS/C-1	W-2015	2015/07/11	2	08:48:56	08:48:58	07:50:00	17:52:00	07:22:00	18:19:00	00:00:02	10:02:00	10:57:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/07/11	3	09:00:27	09:04:17	07:50:00	17:52:00	07:22:00	18:19:00	00:03:50	10:02:00	10:57:00	0.64	0.58	###################	####################
CFDS/C-1	W-2015	2015/07/11	4	09:49:35	10:05:56	07:50:00	17:52:00	07:22:00	18:19:00	00:16:21	10:02:00	10:57:00	2.72	2.49	###################	####################
CFDS/C-1	W-2015	2015/07/11	5	11:26:49	11:28:30	07:50:00	17:52:00	07:22:00	18:19:00	00:01:41	10:02:00	10:57:00	0.28	0.26	###################	####################
CFDS/C-1	W-2015	2015/07/11	6	12:14:45	13:15:21	07:50:00	17:52:00	07:22:00	18:19:00	01:00:36	10:02:00	10:57:00	10.07	9.22	###################	####################
CFDS/C-1	W-2015	2015/07/11	7	14:08:02	14:57:21	07:50:00	17:52:00	07:22:00	18:19:00	00:49:19	10:02:00	10:57:00	8.19	7.51	###################	####################
CFDS/C-1	W-2015	2015/07/11	8	15:08:32	15:17:44	07:50:00	17:52:00	07:22:00	18:19:00	00:09:12	10:02:00	10:57:00	1.53	1.40	###################	####################
CFDS/C-1	W-2015	2015/07/11	9	16:37:07	16:45:59	07:50:00	17:52:00	07:22:00	18:19:00	00:08:52	10:02:00	10:57:00	1.47	1.35	###################	####################
CFDS/C-1	W-2015	2015/07/11	10	16:57:19	17:04:41	07:50:00	17:52:00	07:22:00	18:19:00	00:07:22	10:02:00	10:57:00	1.22	1.12	###################	####################
CFDS/C-1	W-2015	2015/07/11	11	17:17:35	17:17:36	07:50:00	17:52:00	07:22:00	18:19:00	00:00:01	10:02:00	10:57:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/07/12	1	07:51:06	07:51:18	07:49:00	17:52:00	07:22:00	18:20:00	00:00:12	10:03:00	10:58:00	0.03	0.03	###################	####################
CFDS/C-1	W-2015	2015/07/12	2	10:16:38	10:44:37	07:49:00	17:52:00	07:22:00	18:20:00	00:27:59	10:03:00	10:58:00	4.64	4.25	###################	####################
CFDS/C-1	W-2015	2015/07/12	3	12:27:45	12:45:48	07:49:00	17:52:00	07:22:00	18:20:00	00:18:03	10:03:00	10:58:00	2.99	2.74	###################	####################
CFDS/C-1	W-2015	2015/07/12	4	13:08:18	13:32:08	07:49:00	17:52:00	07:22:00	18:20:00	00:23:50	10:03:00	10:58:00	3.95	3.62	###################	####################
CFDS/C-1	W-2015	2015/07/12	5	14:20:44	14:48:14	07:49:00	17:52:00	07:22:00	18:20:00	00:27:30	10:03:00	10:58:00	4.56	4.18	###################	####################
CFDS/C-1	W-2015	2015/07/12	6	15:00:20	17:20:00	07:49:00	17:52:00	07:22:00	18:20:00	02:19:40	10:03:00	10:58:00	23.16	21.23	###################	####################
CFDS/C-1	W-2015	2015/07/12	7	17:36:51	17:42:47	07:49:00	17:52:00	07:22:00	18:20:00	00:05:56	10:03:00	10:58:00	0.98	0.90	###################	####################
CFDS/C-1	W-2015	2015/07/13	1	08:10:04	08:21:29	07:49:00	17:53:00	07:22:00	18:20:00	00:11:25	10:04:00	10:58:00	1.89	1.74	###################	####################
CFDS/C-1	W-2015	2015/07/13	2	08:37:43	10:02:34	07:49:00	17:53:00	07:22:00	18:20:00	01:24:51	10:04:00	10:58:00	14.05	12.90	###################	####################
CFDS/C-1	W-2015	2015/07/13	3	10:13:36	10:32:32	07:49:00	17:53:00	07:22:00	18:20:00	00:18:56	10:04:00	10:58:00	3.13	2.88	###################	####################

CFDS/C-1	W-2015	2015/07/13	4	10:46:19	10:48:22	07:49:00	17:53:00	07:22:00	18:20:00	00:02:03	10:04:00	10:58:00	0.34	0.31	###################	####################
CFDS/C-1	W-2015	2015/07/13	5	11:08:24	11:08:26	07:49:00	17:53:00	07:22:00	18:20:00	00:00:02	10:04:00	10:58:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/07/13	6	12:17:36	12:33:56	07:49:00	17:53:00	07:22:00	18:20:00	00:16:20	10:04:00	10:58:00	2.7	2.48	###################	####################
CFDS/C-1	W-2015	2015/07/13	7	13:16:58	13:18:40	07:49:00	17:53:00	07:22:00	18:20:00	00:01:42	10:04:00	10:58:00	0.28	0.26	###################	####################
CFDS/C-1	W-2015	2015/07/13	8	13:30:34	14:02:36	07:49:00	17:53:00	07:22:00	18:20:00	00:32:02	10:04:00	10:58:00	5.3	4.87	###################	####################
CFDS/C-1	W-2015	2015/07/13	9	14:17:01	14:22:18	07:49:00	17:53:00	07:22:00	18:20:00	00:05:17	10:04:00	10:58:00	0.87	0.80	###################	####################
CFDS/C-1	W-2015	2015/07/13	10	14:28:35	14:45:38	07:49:00	17:53:00	07:22:00	18:20:00	00:17:03	10:04:00	10:58:00	2.82	2.59	###################	####################
CFDS/C-1	W-2015	2015/07/13	11	15:41:48	16:19:57	07:49:00	17:53:00	07:22:00	18:20:00	00:38:09	10:04:00	10:58:00	6.32	5.80	###################	####################
CFDS/C-1	W-2015	2015/07/13	12	16:55:11	17:36:40	07:49:00	17:53:00	07:22:00	18:20:00	00:41:29	10:04:00	10:58:00	6.87	6.30	###################	####################
CFDS/C-1	W-2015	2015/07/13	13	17:48:12	17:48:14	07:49:00	17:53:00	07:22:00	18:20:00	00:00:02	10:04:00	10:58:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/07/14	1	07:55:29	08:08:07	07:49:00	17:53:00	07:21:00	18:21:00	00:12:38	10:04:00	11:00:00	2.09	1.91	###################	####################
CFDS/C-1	W-2015	2015/07/14	2	09:24:50	09:24:52	07:49:00	17:53:00	07:21:00	18:21:00	00:00:02	10:04:00	11:00:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/07/14	3	10:25:13	10:25:15	07:49:00	17:53:00	07:21:00	18:21:00	00:00:02	10:04:00	11:00:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/07/14	4	10:35:14	10:35:16	07:49:00	17:53:00	07:21:00	18:21:00	00:00:02	10:04:00	11:00:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/07/14	5	11:08:59	11:30:39	07:49:00	17:53:00	07:21:00	18:21:00	00:21:40	10:04:00	11:00:00	3.59	3.28	###################	####################
CFDS/C-1	W-2015	2015/07/14	6	11:57:54	12:51:59	07:49:00	17:53:00	07:21:00	18:21:00	00:54:05	10:04:00	11:00:00	8.95	8.19	###################	####################
CFDS/C-1	W-2015	2015/07/14	7	13:53:42	13:53:44	07:49:00	17:53:00	07:21:00	18:21:00	00:00:02	10:04:00	11:00:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/07/14	8	14:45:59	14:52:30	07:49:00	17:53:00	07:21:00	18:21:00	00:06:31	10:04:00	11:00:00	1.08	0.99	###################	####################
CFDS/C-1	W-2015	2015/07/14	9	15:21:05	15:21:06	07:49:00	17:53:00	07:21:00	18:21:00	00:00:01	10:04:00	11:00:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/07/14	10	16:06:07	16:27:09	07:49:00	17:53:00	07:21:00	18:21:00	00:21:02	10:04:00	11:00:00	3.48	3.19	###################	####################
CFDS/C-1	W-2015	2015/07/14	11	17:52:37	17:52:39	07:49:00	17:53:00	07:21:00	18:21:00	00:00:02	10:04:00	11:00:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/07/15	1	08:09:09	08:11:12	07:48:00	17:54:00	07:21:00	18:21:00	00:02:03	10:06:00	11:00:00	0.34	0.31	###################	####################
CFDS/C-1	W-2015	2015/07/15	2	10:08:48	10:10:31	07:48:00	17:54:00	07:21:00	18:21:00	00:01:43	10:06:00	11:00:00	0.28	0.26	###################	####################
CFDS/C-1	W-2015	2015/07/15	3	10:38:22	10:45:35	07:48:00	17:54:00	07:21:00	18:21:00	00:07:13	10:06:00	11:00:00	1.19	1.09	###################	####################
CFDS/C-1	W-2015	2015/07/15	4	12:10:56	12:21:06	07:48:00	17:54:00	07:21:00	18:21:00	00:10:10	10:06:00	11:00:00	1.68	1.54	###################	####################
CFDS/C-1	W-2015	2015/07/15	5	12:44:38	13:01:54	07:48:00	17:54:00	07:21:00	18:21:00	00:17:16	10:06:00	11:00:00	2.85	2.62	###################	####################
CFDS/C-1	W-2015	2015/07/15	6	14:13:46	14:21:44	07:48:00	17:54:00	07:21:00	18:21:00	00:07:58	10:06:00	11:00:00	1.31	1.21	###################	####################
CFDS/C-1	W-2015	2015/07/15	7	14:57:44	15:01:12	07:48:00	17:54:00	07:21:00	18:21:00	00:03:28	10:06:00	11:00:00	0.57	0.53	###################	####################
CFDS/C-1	W-2015	2015/07/15	8	16:06:35	16:37:52	07:48:00	17:54:00	07:21:00	18:21:00	00:31:17	10:06:00	11:00:00	5.16	4.74	###################	####################
CFDS/C-1	W-2015	2015/07/15	9	17:06:09	17:21:24	07:48:00	17:54:00	07:21:00	18:21:00	00:15:15	10:06:00	11:00:00	2.52	2.31	###################	####################
CFDS/C-1	W-2015	2015/07/15	10	17:42:05	17:51:13	07:48:00	17:54:00	07:21:00	18:21:00	00:09:08	10:06:00	11:00:00	1.51	1.38	###################	####################
CFDS/C-1	W-2015	2015/07/16	1	07:51:16	07:53:02	07:48:00	17:55:00	07:21:00	18:22:00	00:01:46	10:07:00	11:01:00	0.29	0.27	###################	####################
CFDS/C-1	W-2015	2015/07/16	2	09:53:17	09:53:19	07:48:00	17:55:00	07:21:00	18:22:00	00:00:02	10:07:00	11:01:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/07/16	3	10:35:52	10:49:36	07:48:00	17:55:00	07:21:00	18:22:00	00:13:44	10:07:00	11:01:00	2.26	2.08	###################	####################
CFDS/C-1	W-2015	2015/07/16	4	11:13:34	11:25:33	07:48:00	17:55:00	07:21:00	18:22:00	00:11:59	10:07:00	11:01:00	1.97	1.81	###################	####################
CFDS/C-1	W-2015	2015/07/16	5	11:51:22	11:53:06	07:48:00	17:55:00	07:21:00	18:22:00	00:01:44	10:07:00	11:01:00	0.29	0.26	###################	####################
CFDS/C-1	W-2015	2015/07/16	6	12:15:55	12:24:27	07:48:00	17:55:00	07:21:00	18:22:00	00:08:32	10:07:00	11:01:00	1.41	1.29	###################	####################
CFDS/C-1	W-2015	2015/07/16	7	12:57:33	12:57:35	07:48:00	17:55:00	07:21:00	18:22:00	00:00:02	10:07:00	11:01:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/07/16	8	14:26:16	14:48:41	07:48:00	17:55:00	07:21:00	18:22:00	00:22:25	10:07:00	11:01:00	3.69	3.39	###################	####################
CFDS/C-1	W-2015	2015/07/16	9	14:57:47	14:57:49	07:48:00	17:55:00	07:21:00	18:22:00	00:00:02	10:07:00	11:01:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/07/16	10	15:53:02	15:56:27	07:48:00	17:55:00	07:21:00	18:22:00	00:03:25	10:07:00	11:01:00	0.56	0.52	###################	####################
CFDS/C-1	W-2015	2015/07/16	11	16:10:05	16:18:37	07:48:00	17:55:00	07:21:00	18:22:00	00:08:32	10:07:00	11:01:00	1.41	1.29	###################	####################
CFDS/C-1	W-2015	2015/07/16	12	16:35:37	16:56:07	07:48:00	17:55:00	07:21:00	18:22:00	00:20:30	10:07:00	11:01:00	3.38	3.10	###################	####################
CFDS/C-1	W-2015	2015/07/16	13	17:26:40	17:43:49	07:48:00	17:55:00	07:21:00	18:22:00	00:17:09	10:07:00	11:01:00	2.83	2.59	###################	####################
CFDS/C-1	W-2015	2015/07/17	1	08:06:38	08:15:10	07:48:00	17:55:00	07:20:00	18:22:00	00:08:32	10:07:00	11:02:00	1.41	1.29	###################	####################
CFDS/C-1	W-2015	2015/07/17	2	08:44:01	08:58:43	07:48:00	17:55:00	07:20:00	18:22:00	00:14:42	10:07:00	11:02:00	2.42	2.22	###################	####################
CFDS/C-1	W-2015	2015/07/17	3	10:53:56	11:00:36	07:48:00	17:55:00	07:20:00	18:22:00	00:06:40	10:07:00	11:02:00	1.1	1.01	###################	####################
CFDS/C-1	W-2015	2015/07/17	4	11:21:10	11:29:49	07:48:00	17:55:00	07:20:00	18:22:00	00:08:39	10:07:00	11:02:00	1.43	1.31	###################	####################
CFDS/C-1	W-2015	2015/07/17	5	11:58:48	11:58:50	07:48:00	17:55:00	07:20:00	18:22:00	00:00:02	10:07:00	11:02:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/07/17	6	12:09:15	12:12:42	07:48:00	17:55:00	07:20:00	18:22:00	00:03:27	10:07:00	11:02:00	0.57	0.52	###################	####################
CFDS/C-1	W-2015	2015/07/17	7	12:34:26	12:44:40	07:48:00	17:55:00	07:20:00	18:22:00	00:10:14	10:07:00	11:02:00	1.69	1.55	###################	####################
CFDS/C-1	W-2015	2015/07/17	8	13:28:26	13:37:43	07:48:00	17:55:00	07:20:00	18:22:00	00:09:17	10:07:00	11:02:00	1.53	1.40	###################	####################
CFDS/C-1	W-2015	2015/07/17	9	13:55:16	14:50:10	07:48:00	17:55:00	07:20:00	18:22:00	00:54:54	10:07:00	11:02:00	9.04	8.29	###################	####################
CFDS/C-1	W-2015	2015/07/17	10	15:20:42	15:28:44	07:48:00	17:55:00	07:20:00	18:22:00	00:08:02	10:07:00	11:02:00	1.32	1.21	###################	####################
CFDS/C-1	W-2015	2015/07/17	11	16:06:11	16:12:10	07:48:00	17:55:00	07:20:00	18:22:00	00:05:59	10:07:00	11:02:00	0.99	0.90	###################	####################
CFDS/C-1	W-2015	2015/07/17	12	16:50:36	17:03:13	07:48:00	17:55:00	07:20:00	18:22:00	00:12:37	10:07:00	11:02:00	2.08	1.91	###################	####################
CFDS/C-1	W-2015	2015/07/17	13	17:48:08	17:49:51	07:48:00	17:55:00	07:20:00	18:22:00	00:01:43	10:07:00	11:02:00	0.28	0.26	###################	####################
CFDS/C-1	W-2015	2015/07/18	1	08:14:26	08:23:48	07:47:00	17:56:00	07:20:00	18:23:00	00:09:22	10:09:00	11:03:00	1.54	1.41	###################	####################
CFDS/C-1	W-2015	2015/07/18	2	10:08:25	10:23:53	07:47:00	17:56:00	07:20:00	18:23:00	00:15:28	10:09:00	11:03:00	2.54	2.33	###################	####################
CFDS/C-1	W-2015	2015/07/18	3	10:40:08	10:50:51	07:47:00	17:56:00	07:20:00	18:23:00	00:10:43	10:09:00	11:03:00	1.76	1.62	###################	####################
CFDS/C-1	W-2015	2015/07/18	4	12:33:09	12:33:11	07:47:00	17:56:00	07:20:00	18:23:00	00:00:02	10:09:00	11:03:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/07/18	5	13:32:00	13:35:59	07:47:00	17:56:00	07:20:00	18:23:00	00:03:59	10:09:00	11:03:00	0.65	0.60	###################	####################
CFDS/C-1	W-2015	2015/07/18	6	14:05:53	14:07:39	07:47:00	17:56:00	07:20:00	18:23:00	00:01:46	10:09:00	11:03:00	0.29	0.27	###################	####################

CFDS/C-1	W-2015	2015/07/18	7	14:49:48	15:42:41	07:47:00	17:56:00	07:20:00	18:23:00	00:52:53	10:09:00	11:03:00	8.68	7.98	###################	####################
CFDS/C-1	W-2015	2015/07/18	8	16:17:25	16:19:15	07:47:00	17:56:00	07:20:00	18:23:00	00:01:50	10:09:00	11:03:00	0.3	0.28	###################	####################
CFDS/C-1	W-2015	2015/07/18	9	16:29:55	16:29:57	07:47:00	17:56:00	07:20:00	18:23:00	00:00:02	10:09:00	11:03:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/07/18	10	16:48:10	17:26:37	07:47:00	17:56:00	07:20:00	18:23:00	00:38:27	10:09:00	11:03:00	6.31	5.80	###################	####################
CFDS/C-1	W-2015	2015/07/19	1	08:57:44	09:00:26	07:47:00	17:56:00	07:19:00	18:24:00	00:02:42	10:09:00	11:05:00	0.44	0.41	###################	####################
CFDS/C-1	W-2015	2015/07/19	2	09:21:00	09:21:02	07:47:00	17:56:00	07:19:00	18:24:00	00:00:02	10:09:00	11:05:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/07/19	3	10:23:16	10:35:01	07:47:00	17:56:00	07:19:00	18:24:00	00:11:45	10:09:00	11:05:00	1.93	1.77	###################	####################
CFDS/C-1	W-2015	2015/07/19	4	10:45:41	11:03:37	07:47:00	17:56:00	07:19:00	18:24:00	00:17:56	10:09:00	11:05:00	2.94	2.70	###################	####################
CFDS/C-1	W-2015	2015/07/19	5	11:11:49	11:11:51	07:47:00	17:56:00	07:19:00	18:24:00	00:00:02	10:09:00	11:05:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/07/19	6	12:21:21	12:21:23	07:47:00	17:56:00	07:19:00	18:24:00	00:00:02	10:09:00	11:05:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/07/19	7	12:50:39	12:50:41	07:47:00	17:56:00	07:19:00	18:24:00	00:00:02	10:09:00	11:05:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/07/19	8	16:01:31	16:11:33	07:47:00	17:56:00	07:19:00	18:24:00	00:10:02	10:09:00	11:05:00	1.65	1.51	###################	####################
CFDS/C-1	W-2015	2015/07/19	9	16:23:29	16:36:08	07:47:00	17:56:00	07:19:00	18:24:00	00:12:39	10:09:00	11:05:00	2.08	1.90	###################	####################
CFDS/C-1	W-2015	2015/07/19	10	16:46:27	16:48:11	07:47:00	17:56:00	07:19:00	18:24:00	00:01:44	10:09:00	11:05:00	0.28	0.26	###################	####################
CFDS/C-1	W-2015	2015/07/19	11	17:02:10	17:04:16	07:47:00	17:56:00	07:19:00	18:24:00	00:02:06	10:09:00	11:05:00	0.34	0.32	###################	####################
CFDS/C-1	W-2015	2015/07/19	12	17:23:51	17:30:40	07:47:00	17:56:00	07:19:00	18:24:00	00:06:49	10:09:00	11:05:00	1.12	1.03	###################	####################
CFDS/C-1	W-2015	2015/07/19	13	17:57:13	18:00:44	07:47:00	17:56:00	07:19:00	18:24:00	00:03:31	10:09:00	11:05:00	0.58	0.53	###################	####################
CFDS/C-1	W-2015	2015/07/20	1	11:18:44	11:22:27	07:46:00	17:57:00	07:19:00	18:24:00	00:03:43	10:11:00	11:05:00	0.61	0.56	###################	####################
CFDS/C-1	W-2015	2015/07/20	2	11:46:39	11:51:46	07:46:00	17:57:00	07:19:00	18:24:00	00:05:07	10:11:00	11:05:00	0.84	0.77	###################	####################
CFDS/C-1	W-2015	2015/07/20	3	12:24:43	12:30:18	07:46:00	17:57:00	07:19:00	18:24:00	00:05:35	10:11:00	11:05:00	0.91	0.84	###################	####################
CFDS/C-1	W-2015	2015/07/20	4	12:44:43	13:13:35	07:46:00	17:57:00	07:19:00	18:24:00	00:28:52	10:11:00	11:05:00	4.72	4.34	###################	####################
CFDS/C-1	W-2015	2015/07/20	5	14:05:43	14:10:59	07:46:00	17:57:00	07:19:00	18:24:00	00:05:16	10:11:00	11:05:00	0.86	0.79	###################	####################
CFDS/C-1	W-2015	2015/07/20	6	14:41:06	15:54:09	07:46:00	17:57:00	07:19:00	18:24:00	01:13:03	10:11:00	11:05:00	11.96	10.98	###################	####################
CFDS/C-1	W-2015	2015/07/20	7	16:19:39	16:19:41	07:46:00	17:57:00	07:19:00	18:24:00	00:00:02	10:11:00	11:05:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/07/20	8	17:35:13	17:39:54	07:46:00	17:57:00	07:19:00	18:24:00	00:04:41	10:11:00	11:05:00	0.77	0.70	###################	####################
CFDS/C-1	W-2015	2015/07/21	1	08:09:11	08:18:20	07:46:00	17:58:00	07:19:00	18:25:00	00:09:09	10:12:00	11:06:00	1.5	1.37	###################	####################
CFDS/C-1	W-2015	2015/07/21	2	09:02:24	09:10:42	07:46:00	17:58:00	07:19:00	18:25:00	00:08:18	10:12:00	11:06:00	1.36	1.25	###################	####################
CFDS/C-1	W-2015	2015/07/21	3	10:41:46	10:47:34	07:46:00	17:58:00	07:19:00	18:25:00	00:05:48	10:12:00	11:06:00	0.95	0.87	###################	####################
CFDS/C-1	W-2015	2015/07/21	4	11:06:23	11:24:53	07:46:00	17:58:00	07:19:00	18:25:00	00:18:30	10:12:00	11:06:00	3.02	2.78	###################	####################
CFDS/C-1	W-2015	2015/07/21	5	11:56:18	11:58:39	07:46:00	17:58:00	07:19:00	18:25:00	00:02:21	10:12:00	11:06:00	0.38	0.35	###################	####################
CFDS/C-1	W-2015	2015/07/21	6	14:07:43	14:07:45	07:46:00	17:58:00	07:19:00	18:25:00	00:00:02	10:12:00	11:06:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/07/21	7	14:18:45	14:27:11	07:46:00	17:58:00	07:19:00	18:25:00	00:08:26	10:12:00	11:06:00	1.38	1.27	###################	####################
CFDS/C-1	W-2015	2015/07/21	8	14:39:40	14:39:42	07:46:00	17:58:00	07:19:00	18:25:00	00:00:02	10:12:00	11:06:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/07/21	9	15:36:58	15:43:45	07:46:00	17:58:00	07:19:00	18:25:00	00:06:47	10:12:00	11:06:00	1.11	1.02	###################	####################
CFDS/C-1	W-2015	2015/07/21	10	15:57:30	16:14:29	07:46:00	17:58:00	07:19:00	18:25:00	00:16:59	10:12:00	11:06:00	2.78	2.55	###################	####################
CFDS/C-1	W-2015	2015/07/21	11	16:32:45	16:40:20	07:46:00	17:58:00	07:19:00	18:25:00	00:07:35	10:12:00	11:06:00	1.24	1.14	###################	####################
CFDS/C-1	W-2015	2015/07/21	12	17:02:16	17:02:18	07:46:00	17:58:00	07:19:00	18:25:00	00:00:02	10:12:00	11:06:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/07/21	13	17:21:50	17:21:52	07:46:00	17:58:00	07:19:00	18:25:00	00:00:02	10:12:00	11:06:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/07/22	1	09:18:34	09:18:36	07:45:00	17:58:00	07:18:00	18:25:00	00:00:02	10:13:00	11:07:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/07/22	2	09:41:10	09:41:12	07:45:00	17:58:00	07:18:00	18:25:00	00:00:02	10:13:00	11:07:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/07/22	3	10:44:26	10:46:10	07:45:00	17:58:00	07:18:00	18:25:00	00:01:44	10:13:00	11:07:00	0.28	0.26	###################	####################
CFDS/C-1	W-2015	2015/07/22	4	11:23:15	11:35:09	07:45:00	17:58:00	07:18:00	18:25:00	00:11:54	10:13:00	11:07:00	1.94	1.78	###################	####################
CFDS/C-1	W-2015	2015/07/22	5	12:13:54	12:21:08	07:45:00	17:58:00	07:18:00	18:25:00	00:07:14	10:13:00	11:07:00	1.18	1.08	###################	####################
CFDS/C-1	W-2015	2015/07/22	6	13:54:24	13:58:09	07:45:00	17:58:00	07:18:00	18:25:00	00:03:45	10:13:00	11:07:00	0.61	0.56	###################	####################
CFDS/C-1	W-2015	2015/07/22	7	14:16:26	15:29:50	07:45:00	17:58:00	07:18:00	18:25:00	01:13:24	10:13:00	11:07:00	11.97	11.00	###################	####################
CFDS/C-1	W-2015	2015/07/22	8	15:41:17	16:16:38	07:45:00	17:58:00	07:18:00	18:25:00	00:35:21	10:13:00	11:07:00	5.77	5.30	###################	####################
CFDS/C-1	W-2015	2015/07/22	9	16:26:31	16:33:52	07:45:00	17:58:00	07:18:00	18:25:00	00:07:21	10:13:00	11:07:00	1.2	1.10	###################	####################
CFDS/C-1	W-2015	2015/07/22	10	16:47:56	16:47:58	07:45:00	17:58:00	07:18:00	18:25:00	00:00:02	10:13:00	11:07:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/07/22	11	17:05:03	17:05:05	07:45:00	17:58:00	07:18:00	18:25:00	00:00:02	10:13:00	11:07:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/07/22	12	17:17:17	17:17:19	07:45:00	17:58:00	07:18:00	18:25:00	00:00:02	10:13:00	11:07:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/07/22	13	17:28:16	17:30:26	07:45:00	17:58:00	07:18:00	18:25:00	00:02:10	10:13:00	11:07:00	0.35	0.33	###################	####################
CFDS/C-1	W-2015	2015/07/22	14	17:42:12	17:58:20	07:45:00	17:58:00	07:18:00	18:25:00	00:16:08	10:13:00	11:07:00	2.63	2.42	###################	####################
CFDS/C-1	W-2015	2015/07/22	15	18:02:30	18:02:31	07:45:00	17:58:00	07:18:00	18:25:00	00:00:01	10:13:00	11:07:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/07/23	1	07:31:02	07:34:37	07:44:00	17:59:00	07:17:00	18:26:00	00:03:35	10:15:00	11:09:00	0.58	0.54	###################	####################
CFDS/C-1	W-2015	2015/07/23	2	08:36:27	08:42:21	07:44:00	17:59:00	07:17:00	18:26:00	00:05:54	10:15:00	11:09:00	0.96	0.88	###################	####################
CFDS/C-1	W-2015	2015/07/23	3	09:26:27	09:26:29	07:44:00	17:59:00	07:17:00	18:26:00	00:00:02	10:15:00	11:09:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/07/23	4	11:24:44	11:26:32	07:44:00	17:59:00	07:17:00	18:26:00	00:01:48	10:15:00	11:09:00	0.29	0.27	###################	####################
CFDS/C-1	W-2015	2015/07/23	5	12:49:29	13:04:20	07:44:00	17:59:00	07:17:00	18:26:00	00:14:51	10:15:00	11:09:00	2.41	2.22	###################	####################
CFDS/C-1	W-2015	2015/07/23	6	14:16:51	14:16:53	07:44:00	17:59:00	07:17:00	18:26:00	00:00:02	10:15:00	11:09:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/07/23	7	14:28:45	14:28:47	07:44:00	17:59:00	07:17:00	18:26:00	00:00:02	10:15:00	11:09:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/07/23	8	14:49:42	14:58:39	07:44:00	17:59:00	07:17:00	18:26:00	00:08:57	10:15:00	11:09:00	1.46	1.34	###################	####################
CFDS/C-1	W-2015	2015/07/23	9	15:28:43	15:58:02	07:44:00	17:59:00	07:17:00	18:26:00	00:29:19	10:15:00	11:09:00	4.77	4.38	###################	####################
CFDS/C-1	W-2015	2015/07/23	10	16:08:00	16:25:09	07:44:00	17:59:00	07:17:00	18:26:00	00:17:09	10:15:00	11:09:00	2.79	2.56	###################	####################

CFDS/C-1	W-2015	2015/07/23	11	16:43:05	16:43:07	07:44:00	17:59:00	07:17:00	18:26:00	00:00:02	10:15:00	11:09:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/07/24	1	08:41:53	08:41:55	07:44:00	18:00:00	07:17:00	18:27:00	00:00:02	10:16:00	11:10:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/07/24	2	09:49:55	09:56:42	07:44:00	18:00:00	07:17:00	18:27:00	00:06:47	10:16:00	11:10:00	1.1	1.01	###################	####################
CFDS/C-1	W-2015	2015/07/24	3	10:54:04	11:02:17	07:44:00	18:00:00	07:17:00	18:27:00	00:08:13	10:16:00	11:10:00	1.33	1.23	###################	####################
CFDS/C-1	W-2015	2015/07/24	4	13:55:50	13:55:52	07:44:00	18:00:00	07:17:00	18:27:00	00:00:02	10:16:00	11:10:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/07/24	5	14:14:56	14:16:30	07:44:00	18:00:00	07:17:00	18:27:00	00:01:34	10:16:00	11:10:00	0.25	0.23	###################	####################
CFDS/C-1	W-2015	2015/07/24	6	14:58:11	14:58:13	07:44:00	18:00:00	07:17:00	18:27:00	00:00:02	10:16:00	11:10:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/07/24	7	15:10:00	15:10:02	07:44:00	18:00:00	07:17:00	18:27:00	00:00:02	10:16:00	11:10:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/07/24	8	15:26:05	15:47:56	07:44:00	18:00:00	07:17:00	18:27:00	00:21:51	10:16:00	11:10:00	3.55	3.26	###################	####################
CFDS/C-1	W-2015	2015/07/24	9	16:02:34	16:41:26	07:44:00	18:00:00	07:17:00	18:27:00	00:38:52	10:16:00	11:10:00	6.31	5.80	###################	####################
CFDS/C-1	W-2015	2015/07/24	10	17:24:56	17:30:22	07:44:00	18:00:00	07:17:00	18:27:00	00:05:26	10:16:00	11:10:00	0.88	0.81	###################	####################
CFDS/C-1	W-2015	2015/07/25	1	10:00:35	11:21:36	07:43:00	18:00:00	07:16:00	18:27:00	01:21:01	10:17:00	11:11:00	13.13	12.07	###################	####################
CFDS/C-1	W-2015	2015/07/25	2	11:47:39	11:51:05	07:43:00	18:00:00	07:16:00	18:27:00	00:03:26	10:17:00	11:11:00	0.56	0.51	###################	####################
CFDS/C-1	W-2015	2015/07/25	3	12:21:08	12:21:10	07:43:00	18:00:00	07:16:00	18:27:00	00:00:02	10:17:00	11:11:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/07/25	4	13:16:59	13:41:04	07:43:00	18:00:00	07:16:00	18:27:00	00:24:05	10:17:00	11:11:00	3.9	3.59	###################	####################
CFDS/C-1	W-2015	2015/07/25	5	14:51:17	14:54:43	07:43:00	18:00:00	07:16:00	18:27:00	00:03:26	10:17:00	11:11:00	0.56	0.51	###################	####################
CFDS/C-1	W-2015	2015/07/25	6	15:23:28	15:37:39	07:43:00	18:00:00	07:16:00	18:27:00	00:14:11	10:17:00	11:11:00	2.3	2.11	###################	####################
CFDS/C-1	W-2015	2015/07/25	7	16:16:11	16:24:53	07:43:00	18:00:00	07:16:00	18:27:00	00:08:42	10:17:00	11:11:00	1.41	1.30	###################	####################
CFDS/C-1	W-2015	2015/07/25	8	16:55:17	17:05:40	07:43:00	18:00:00	07:16:00	18:27:00	00:10:23	10:17:00	11:11:00	1.68	1.55	###################	####################
CFDS/C-1	W-2015	2015/07/25	9	17:15:49	17:17:33	07:43:00	18:00:00	07:16:00	18:27:00	00:01:44	10:17:00	11:11:00	0.28	0.26	###################	####################
CFDS/C-1	W-2015	2015/07/25	10	17:32:01	17:32:03	07:43:00	18:00:00	07:16:00	18:27:00	00:00:02	10:17:00	11:11:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/07/25	11	17:46:23	18:05:38	07:43:00	18:00:00	07:16:00	18:27:00	00:19:15	10:17:00	11:11:00	3.12	2.87	###################	####################
CFDS/C-1	W-2015	2015/07/26	1	08:52:43	08:56:25	07:42:00	18:01:00	07:16:00	18:28:00	00:03:42	10:19:00	11:12:00	0.6	0.55	###################	####################
CFDS/C-1	W-2015	2015/07/26	2	09:44:05	09:54:27	07:42:00	18:01:00	07:16:00	18:28:00	00:10:22	10:19:00	11:12:00	1.67	1.54	###################	####################
CFDS/C-1	W-2015	2015/07/26	3	10:51:22	12:10:20	07:42:00	18:01:00	07:16:00	18:28:00	01:18:58	10:19:00	11:12:00	12.76	11.75	###################	####################
CFDS/C-1	W-2015	2015/07/26	4	12:47:27	13:05:43	07:42:00	18:01:00	07:16:00	18:28:00	00:18:16	10:19:00	11:12:00	2.95	2.72	###################	####################
CFDS/C-1	W-2015	2015/07/26	5	13:34:26	15:02:28	07:42:00	18:01:00	07:16:00	18:28:00	01:28:02	10:19:00	11:12:00	14.22	13.10	###################	####################
CFDS/C-1	W-2015	2015/07/26	6	15:26:50	15:37:11	07:42:00	18:01:00	07:16:00	18:28:00	00:10:21	10:19:00	11:12:00	1.67	1.54	###################	####################
CFDS/C-1	W-2015	2015/07/26	7	15:49:08	15:57:30	07:42:00	18:01:00	07:16:00	18:28:00	00:08:22	10:19:00	11:12:00	1.35	1.25	###################	####################
CFDS/C-1	W-2015	2015/07/26	8	17:01:48	17:11:32	07:42:00	18:01:00	07:16:00	18:28:00	00:09:44	10:19:00	11:12:00	1.57	1.45	###################	####################
CFDS/C-1	W-2015	2015/07/26	9	17:28:37	17:33:40	07:42:00	18:01:00	07:16:00	18:28:00	00:05:03	10:19:00	11:12:00	0.82	0.75	###################	####################
CFDS/C-1	W-2015	2015/07/26	10	17:54:04	17:55:50	07:42:00	18:01:00	07:16:00	18:28:00	00:01:46	10:19:00	11:12:00	0.29	0.26	###################	####################
CFDS/C-1	W-2015	2015/07/27	1	08:08:53	08:08:55	07:42:00	18:02:00	07:15:00	18:28:00	00:00:02	10:20:00	11:13:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/07/27	2	11:18:01	11:27:27	07:42:00	18:02:00	07:15:00	18:28:00	00:09:26	10:20:00	11:13:00	1.52	1.40	###################	####################
CFDS/C-1	W-2015	2015/07/27	3	12:10:06	12:13:41	07:42:00	18:02:00	07:15:00	18:28:00	00:03:35	10:20:00	11:13:00	0.58	0.53	###################	####################
CFDS/C-1	W-2015	2015/07/27	4	12:45:45	13:09:27	07:42:00	18:02:00	07:15:00	18:28:00	00:23:42	10:20:00	11:13:00	3.82	3.52	###################	####################
CFDS/C-1	W-2015	2015/07/27	5	13:39:18	15:14:50	07:42:00	18:02:00	07:15:00	18:28:00	01:35:32	10:20:00	11:13:00	15.41	14.19	###################	####################
CFDS/C-1	W-2015	2015/07/27	6	15:32:22	15:52:48	07:42:00	18:02:00	07:15:00	18:28:00	00:20:26	10:20:00	11:13:00	3.3	3.04	###################	####################
CFDS/C-1	W-2015	2015/07/27	7	16:09:25	16:12:31	07:42:00	18:02:00	07:15:00	18:28:00	00:03:06	10:20:00	11:13:00	0.5	0.46	###################	####################
CFDS/C-1	W-2015	2015/07/27	8	16:25:15	16:51:37	07:42:00	18:02:00	07:15:00	18:28:00	00:26:22	10:20:00	11:13:00	4.25	3.92	###################	####################
CFDS/C-1	W-2015	2015/07/27	9	17:09:19	17:09:21	07:42:00	18:02:00	07:15:00	18:28:00	00:00:02	10:20:00	11:13:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/07/28	1	07:37:26	07:42:22	07:41:00	18:02:00	07:14:00	18:29:00	00:04:56	10:21:00	11:15:00	0.79	0.73	###################	####################
CFDS/C-1	W-2015	2015/07/28	2	10:23:50	10:31:01	07:41:00	18:02:00	07:14:00	18:29:00	00:07:11	10:21:00	11:15:00	1.16	1.06	###################	####################
CFDS/C-1	W-2015	2015/07/28	3	11:06:49	11:06:51	07:41:00	18:02:00	07:14:00	18:29:00	00:00:02	10:21:00	11:15:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/07/28	4	12:16:18	12:53:02	07:41:00	18:02:00	07:14:00	18:29:00	00:36:44	10:21:00	11:15:00	5.92	5.44	###################	####################
CFDS/C-1	W-2015	2015/07/28	5	13:03:41	13:21:30	07:41:00	18:02:00	07:14:00	18:29:00	00:17:49	10:21:00	11:15:00	2.87	2.64	###################	####################
CFDS/C-1	W-2015	2015/07/28	6	13:31:36	13:36:55	07:41:00	18:02:00	07:14:00	18:29:00	00:05:19	10:21:00	11:15:00	0.86	0.79	###################	####################
CFDS/C-1	W-2015	2015/07/28	7	15:50:36	16:06:49	07:41:00	18:02:00	07:14:00	18:29:00	00:16:13	10:21:00	11:15:00	2.61	2.40	###################	####################
CFDS/C-1	W-2015	2015/07/28	8	16:58:00	17:46:42	07:41:00	18:02:00	07:14:00	18:29:00	00:48:42	10:21:00	11:15:00	7.84	7.21	###################	####################
CFDS/C-1	W-2015	2015/07/29	1	08:24:36	08:40:20	07:40:00	18:03:00	07:14:00	18:30:00	00:15:44	10:23:00	11:16:00	2.53	2.33	###################	####################
CFDS/C-1	W-2015	2015/07/29	2	09:15:28	09:26:12	07:40:00	18:03:00	07:14:00	18:30:00	00:10:44	10:23:00	11:16:00	1.72	1.59	###################	####################
CFDS/C-1	W-2015	2015/07/29	3	10:16:26	10:16:28	07:40:00	18:03:00	07:14:00	18:30:00	00:00:02	10:23:00	11:16:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/07/29	4	10:45:04	11:32:06	07:40:00	18:03:00	07:14:00	18:30:00	00:47:02	10:23:00	11:16:00	7.55	6.96	###################	####################
CFDS/C-1	W-2015	2015/07/29	5	12:20:20	12:35:38	07:40:00	18:03:00	07:14:00	18:30:00	00:15:18	10:23:00	11:16:00	2.46	2.26	###################	####################
CFDS/C-1	W-2015	2015/07/29	6	12:49:34	12:57:18	07:40:00	18:03:00	07:14:00	18:30:00	00:07:44	10:23:00	11:16:00	1.24	1.14	###################	####################
CFDS/C-1	W-2015	2015/07/29	7	13:09:58	13:13:36	07:40:00	18:03:00	07:14:00	18:30:00	00:03:38	10:23:00	11:16:00	0.58	0.54	###################	####################
CFDS/C-1	W-2015	2015/07/29	8	14:22:36	14:38:52	07:40:00	18:03:00	07:14:00	18:30:00	00:16:16	10:23:00	11:16:00	2.61	2.41	###################	####################
CFDS/C-1	W-2015	2015/07/29	9	15:16:18	15:32:24	07:40:00	18:03:00	07:14:00	18:30:00	00:16:06	10:23:00	11:16:00	2.58	2.38	###################	####################
CFDS/C-1	W-2015	2015/07/29	10	17:24:43	17:35:51	07:40:00	18:03:00	07:14:00	18:30:00	00:11:08	10:23:00	11:16:00	1.79	1.65	###################	####################
CFDS/C-1	W-2015	2015/07/29	11	18:19:33	18:19:35	07:40:00	18:03:00	07:14:00	18:30:00	00:00:02	10:23:00	11:16:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/07/30	1	07:50:57	07:50:59	07:40:00	18:04:00	07:13:00	18:30:00	00:00:02	10:24:00	11:17:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/07/30	2	08:58:55	09:00:52	07:40:00	18:04:00	07:13:00	18:30:00	00:01:57	10:24:00	11:17:00	0.31	0.29	###################	####################
CFDS/C-1	W-2015	2015/07/30	3	09:25:36	09:27:46	07:40:00	18:04:00	07:13:00	18:30:00	00:02:10	10:24:00	11:17:00	0.35	0.32	###################	####################

CFDS/C-1	W-2015	2015/07/30	4	12:58:12	13:06:53	07:40:00	18:04:00	07:13:00	18:30:00	00:08:41	10:24:00	11:17:00	1.39	1.28	###################	####################
CFDS/C-1	W-2015	2015/07/30	5	13:19:23	13:25:34	07:40:00	18:04:00	07:13:00	18:30:00	00:06:11	10:24:00	11:17:00	0.99	0.91	###################	####################
CFDS/C-1	W-2015	2015/07/30	6	14:11:55	14:22:45	07:40:00	18:04:00	07:13:00	18:30:00	00:10:50	10:24:00	11:17:00	1.74	1.60	###################	####################
CFDS/C-1	W-2015	2015/07/30	7	15:17:19	15:22:31	07:40:00	18:04:00	07:13:00	18:30:00	00:05:12	10:24:00	11:17:00	0.83	0.77	###################	####################
CFDS/C-1	W-2015	2015/07/30	8	15:37:10	15:37:12	07:40:00	18:04:00	07:13:00	18:30:00	00:00:02	10:24:00	11:17:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/07/30	9	16:41:10	17:25:46	07:40:00	18:04:00	07:13:00	18:30:00	00:44:36	10:24:00	11:17:00	7.15	6.59	###################	####################
CFDS/C-1	W-2015	2015/07/30	10	17:59:30	17:59:32	07:40:00	18:04:00	07:13:00	18:30:00	00:00:02	10:24:00	11:17:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/07/31	1	08:07:08	08:28:54	07:39:00	18:05:00	07:12:00	18:31:00	00:21:46	10:26:00	11:19:00	3.48	3.21	###################	####################
CFDS/C-1	W-2015	2015/07/31	2	09:10:06	09:10:08	07:39:00	18:05:00	07:12:00	18:31:00	00:00:02	10:26:00	11:19:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/07/31	3	10:17:12	10:26:27	07:39:00	18:05:00	07:12:00	18:31:00	00:09:15	10:26:00	11:19:00	1.48	1.36	###################	####################
CFDS/C-1	W-2015	2015/07/31	4	11:05:53	11:07:34	07:39:00	18:05:00	07:12:00	18:31:00	00:01:41	10:26:00	11:19:00	0.27	0.25	###################	####################
CFDS/C-1	W-2015	2015/07/31	5	12:14:25	12:21:51	07:39:00	18:05:00	07:12:00	18:31:00	00:07:26	10:26:00	11:19:00	1.19	1.09	###################	####################
CFDS/C-1	W-2015	2015/07/31	6	13:36:51	13:38:33	07:39:00	18:05:00	07:12:00	18:31:00	00:01:42	10:26:00	11:19:00	0.27	0.25	###################	####################
CFDS/C-1	W-2015	2015/07/31	7	13:48:59	13:49:01	07:39:00	18:05:00	07:12:00	18:31:00	00:00:02	10:26:00	11:19:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/07/31	8	15:33:07	15:33:07	07:39:00	18:05:00	07:12:00	18:31:00	00:00:00	10:26:00	11:19:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/07/31	9	15:44:35	16:01:55	07:39:00	18:05:00	07:12:00	18:31:00	00:17:20	10:26:00	11:19:00	2.77	2.55	###################	####################
CFDS/C-1	W-2015	2015/07/31	10	16:33:04	16:41:30	07:39:00	18:05:00	07:12:00	18:31:00	00:08:26	10:26:00	11:19:00	1.35	1.24	###################	####################
CFDS/C-1	W-2015	2015/07/31	11	16:55:20	16:55:21	07:39:00	18:05:00	07:12:00	18:31:00	00:00:01	10:26:00	11:19:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/07/31	12	17:07:05	17:10:30	07:39:00	18:05:00	07:12:00	18:31:00	00:03:25	10:26:00	11:19:00	0.55	0.50	###################	####################
CFDS/C-1	W-2015	2015/07/31	13	17:25:46	17:25:48	07:39:00	18:05:00	07:12:00	18:31:00	00:00:02	10:26:00	11:19:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/01	1	10:01:02	10:01:04	07:38:00	18:05:00	07:12:00	18:32:00	00:00:02	10:27:00	11:20:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/01	2	10:35:04	10:35:06	07:38:00	18:05:00	07:12:00	18:32:00	00:00:02	10:27:00	11:20:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/01	3	12:38:07	12:38:09	07:38:00	18:05:00	07:12:00	18:32:00	00:00:02	10:27:00	11:20:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/01	4	12:48:32	12:48:34	07:38:00	18:05:00	07:12:00	18:32:00	00:00:02	10:27:00	11:20:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/01	5	13:12:23	13:42:54	07:38:00	18:05:00	07:12:00	18:32:00	00:30:31	10:27:00	11:20:00	4.87	4.49	###################	####################
CFDS/C-1	W-2015	2015/08/01	6	14:04:16	14:08:06	07:38:00	18:05:00	07:12:00	18:32:00	00:03:50	10:27:00	11:20:00	0.61	0.56	###################	####################
CFDS/C-1	W-2015	2015/08/01	7	14:41:15	14:46:25	07:38:00	18:05:00	07:12:00	18:32:00	00:05:10	10:27:00	11:20:00	0.82	0.76	###################	####################
CFDS/C-1	W-2015	2015/08/01	8	15:30:11	15:46:51	07:38:00	18:05:00	07:12:00	18:32:00	00:16:40	10:27:00	11:20:00	2.66	2.45	###################	####################
CFDS/C-1	W-2015	2015/08/01	9	17:02:43	17:05:10	07:38:00	18:05:00	07:12:00	18:32:00	00:02:27	10:27:00	11:20:00	0.39	0.36	###################	####################
CFDS/C-1	W-2015	2015/08/01	10	17:18:45	17:21:16	07:38:00	18:05:00	07:12:00	18:32:00	00:02:31	10:27:00	11:20:00	0.4	0.37	###################	####################
CFDS/C-1	W-2015	2015/08/02	1	11:31:17	11:34:38	07:37:00	18:06:00	07:11:00	18:32:00	00:03:21	10:29:00	11:21:00	0.53	0.49	###################	####################
CFDS/C-1	W-2015	2015/08/02	2	11:46:48	12:13:13	07:37:00	18:06:00	07:11:00	18:32:00	00:26:25	10:29:00	11:21:00	4.2	3.88	###################	####################
CFDS/C-1	W-2015	2015/08/02	3	12:31:38	12:50:18	07:37:00	18:06:00	07:11:00	18:32:00	00:18:40	10:29:00	11:21:00	2.97	2.74	###################	####################
CFDS/C-1	W-2015	2015/08/02	4	13:00:23	13:55:41	07:37:00	18:06:00	07:11:00	18:32:00	00:55:18	10:29:00	11:21:00	8.79	8.12	###################	####################
CFDS/C-1	W-2015	2015/08/02	5	15:19:03	15:19:05	07:37:00	18:06:00	07:11:00	18:32:00	00:00:02	10:29:00	11:21:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/02	6	16:05:05	16:06:47	07:37:00	18:06:00	07:11:00	18:32:00	00:01:42	10:29:00	11:21:00	0.27	0.25	###################	####################
CFDS/C-1	W-2015	2015/08/02	7	16:41:19	16:41:21	07:37:00	18:06:00	07:11:00	18:32:00	00:00:02	10:29:00	11:21:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/02	8	17:08:01	17:25:58	07:37:00	18:06:00	07:11:00	18:32:00	00:17:57	10:29:00	11:21:00	2.85	2.64	###################	####################
CFDS/C-1	W-2015	2015/08/02	9	17:39:51	17:58:59	07:37:00	18:06:00	07:11:00	18:32:00	00:19:08	10:29:00	11:21:00	3.04	2.81	###################	####################
CFDS/C-1	W-2015	2015/08/03	1	07:47:29	07:47:30	07:36:00	18:07:00	07:10:00	18:33:00	00:00:01	10:31:00	11:23:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/03	2	08:09:53	08:37:57	07:36:00	18:07:00	07:10:00	18:33:00	00:28:04	10:31:00	11:23:00	4.45	4.11	###################	####################
CFDS/C-1	W-2015	2015/08/03	3	11:31:16	12:28:28	07:36:00	18:07:00	07:10:00	18:33:00	00:57:12	10:31:00	11:23:00	9.06	8.37	###################	####################
CFDS/C-1	W-2015	2015/08/03	4	13:52:57	14:08:02	07:36:00	18:07:00	07:10:00	18:33:00	00:15:05	10:31:00	11:23:00	2.39	2.21	###################	####################
CFDS/C-1	W-2015	2015/08/03	5	14:38:30	14:46:23	07:36:00	18:07:00	07:10:00	18:33:00	00:07:53	10:31:00	11:23:00	1.25	1.15	###################	####################
CFDS/C-1	W-2015	2015/08/03	6	15:23:08	15:52:21	07:36:00	18:07:00	07:10:00	18:33:00	00:29:13	10:31:00	11:23:00	4.63	4.28	###################	####################
CFDS/C-1	W-2015	2015/08/03	7	16:42:58	17:02:58	07:36:00	18:07:00	07:10:00	18:33:00	00:20:00	10:31:00	11:23:00	3.17	2.93	###################	####################
CFDS/C-1	W-2015	2015/08/03	8	18:11:00	18:11:02	07:36:00	18:07:00	07:10:00	18:33:00	00:00:02	10:31:00	11:23:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/04	1	07:46:48	08:03:43	07:35:00	18:07:00	07:09:00	18:34:00	00:16:55	10:32:00	11:25:00	2.68	2.47	###################	####################
CFDS/C-1	W-2015	2015/08/04	2	08:22:51	08:41:24	07:35:00	18:07:00	07:09:00	18:34:00	00:18:33	10:32:00	11:25:00	2.94	2.71	###################	####################
CFDS/C-1	W-2015	2015/08/04	3	10:13:02	10:13:04	07:35:00	18:07:00	07:09:00	18:34:00	00:00:02	10:32:00	11:25:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/04	4	10:36:32	10:55:07	07:35:00	18:07:00	07:09:00	18:34:00	00:18:35	10:32:00	11:25:00	2.94	2.71	###################	####################
CFDS/C-1	W-2015	2015/08/04	5	12:06:17	12:11:31	07:35:00	18:07:00	07:09:00	18:34:00	00:05:14	10:32:00	11:25:00	0.83	0.76	###################	####################
CFDS/C-1	W-2015	2015/08/04	6	12:24:44	13:23:22	07:35:00	18:07:00	07:09:00	18:34:00	00:58:38	10:32:00	11:25:00	9.28	8.56	###################	####################
CFDS/C-1	W-2015	2015/08/04	7	14:18:03	14:18:05	07:35:00	18:07:00	07:09:00	18:34:00	00:00:02	10:32:00	11:25:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/04	8	14:43:39	14:43:41	07:35:00	18:07:00	07:09:00	18:34:00	00:00:02	10:32:00	11:25:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/04	9	15:52:23	16:13:05	07:35:00	18:07:00	07:09:00	18:34:00	00:20:42	10:32:00	11:25:00	3.28	3.02	###################	####################
CFDS/C-1	W-2015	2015/08/04	10	16:57:28	16:57:30	07:35:00	18:07:00	07:09:00	18:34:00	00:00:02	10:32:00	11:25:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/04	11	17:16:27	17:16:29	07:35:00	18:07:00	07:09:00	18:34:00	00:00:02	10:32:00	11:25:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/04	12	18:05:26	18:13:12	07:35:00	18:07:00	07:09:00	18:34:00	00:07:46	10:32:00	11:25:00	1.23	1.13	###################	####################
CFDS/C-1	W-2015	2015/08/05	1	08:41:15	08:41:17	07:35:00	18:08:00	07:08:00	18:34:00	00:00:02	10:33:00	11:26:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/05	2	09:06:43	09:06:45	07:35:00	18:08:00	07:08:00	18:34:00	00:00:02	10:33:00	11:26:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/05	3	09:19:36	09:19:38	07:35:00	18:08:00	07:08:00	18:34:00	00:00:02	10:33:00	11:26:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/05	4	09:53:58	09:55:42	07:35:00	18:08:00	07:08:00	18:34:00	00:01:44	10:33:00	11:26:00	0.27	0.25	###################	####################

CFDS/C-1	W-2015	2015/08/05	5	10:28:19	10:28:31	07:35:00	18:08:00	07:08:00	18:34:00	00:00:12	10:33:00	11:26:00	0.03	0.03	###################	####################
CFDS/C-1	W-2015	2015/08/05	6	11:15:02	11:18:49	07:35:00	18:08:00	07:08:00	18:34:00	00:03:47	10:33:00	11:26:00	0.6	0.55	###################	####################
CFDS/C-1	W-2015	2015/08/05	7	11:39:12	11:50:21	07:35:00	18:08:00	07:08:00	18:34:00	00:11:09	10:33:00	11:26:00	1.76	1.63	###################	####################
CFDS/C-1	W-2015	2015/08/05	8	12:07:28	12:20:59	07:35:00	18:08:00	07:08:00	18:34:00	00:13:31	10:33:00	11:26:00	2.14	1.97	###################	####################
CFDS/C-1	W-2015	2015/08/05	9	13:55:20	14:11:25	07:35:00	18:08:00	07:08:00	18:34:00	00:16:05	10:33:00	11:26:00	2.54	2.34	###################	####################
CFDS/C-1	W-2015	2015/08/05	10	14:33:59	14:34:01	07:35:00	18:08:00	07:08:00	18:34:00	00:00:02	10:33:00	11:26:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/05	11	15:18:55	15:18:57	07:35:00	18:08:00	07:08:00	18:34:00	00:00:02	10:33:00	11:26:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/05	12	16:19:40	16:25:08	07:35:00	18:08:00	07:08:00	18:34:00	00:05:28	10:33:00	11:26:00	0.86	0.80	###################	####################
CFDS/C-1	W-2015	2015/08/05	13	16:58:44	17:02:40	07:35:00	18:08:00	07:08:00	18:34:00	00:03:56	10:33:00	11:26:00	0.62	0.57	###################	####################
CFDS/C-1	W-2015	2015/08/05	14	17:29:34	17:36:27	07:35:00	18:08:00	07:08:00	18:34:00	00:06:53	10:33:00	11:26:00	1.09	1.00	###################	####################
CFDS/C-1	W-2015	2015/08/06	1	08:13:08	08:16:34	07:34:00	18:09:00	07:07:00	18:35:00	00:03:26	10:35:00	11:28:00	0.54	0.50	###################	####################
CFDS/C-1	W-2015	2015/08/06	2	08:45:32	08:47:28	07:34:00	18:09:00	07:07:00	18:35:00	00:01:56	10:35:00	11:28:00	0.3	0.28	###################	####################
CFDS/C-1	W-2015	2015/08/06	3	09:10:03	09:10:05	07:34:00	18:09:00	07:07:00	18:35:00	00:00:02	10:35:00	11:28:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/06	4	10:42:30	10:49:46	07:34:00	18:09:00	07:07:00	18:35:00	00:07:16	10:35:00	11:28:00	1.14	1.06	###################	####################
CFDS/C-1	W-2015	2015/08/06	5	11:00:12	11:00:14	07:34:00	18:09:00	07:07:00	18:35:00	00:00:02	10:35:00	11:28:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/06	6	12:18:28	12:51:49	07:34:00	18:09:00	07:07:00	18:35:00	00:33:21	10:35:00	11:28:00	5.25	4.85	###################	####################
CFDS/C-1	W-2015	2015/08/06	7	14:07:36	14:16:55	07:34:00	18:09:00	07:07:00	18:35:00	00:09:19	10:35:00	11:28:00	1.47	1.35	###################	####################
CFDS/C-1	W-2015	2015/08/06	8	14:34:01	15:02:50	07:34:00	18:09:00	07:07:00	18:35:00	00:28:49	10:35:00	11:28:00	4.54	4.19	###################	####################
CFDS/C-1	W-2015	2015/08/06	9	16:58:22	17:13:05	07:34:00	18:09:00	07:07:00	18:35:00	00:14:43	10:35:00	11:28:00	2.32	2.14	###################	####################
CFDS/C-1	W-2015	2015/08/06	10	17:56:41	18:05:18	07:34:00	18:09:00	07:07:00	18:35:00	00:08:37	10:35:00	11:28:00	1.36	1.25	###################	####################
CFDS/C-1	W-2015	2015/08/07	1	09:13:54	09:19:19	07:33:00	18:09:00	07:07:00	18:36:00	00:05:25	10:36:00	11:29:00	0.85	0.79	###################	####################
CFDS/C-1	W-2015	2015/08/07	2	09:45:34	09:45:36	07:33:00	18:09:00	07:07:00	18:36:00	00:00:02	10:36:00	11:29:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/07	3	09:57:34	10:01:22	07:33:00	18:09:00	07:07:00	18:36:00	00:03:48	10:36:00	11:29:00	0.6	0.55	###################	####################
CFDS/C-1	W-2015	2015/08/07	4	10:12:09	10:12:11	07:33:00	18:09:00	07:07:00	18:36:00	00:00:02	10:36:00	11:29:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/07	5	11:18:00	11:26:44	07:33:00	18:09:00	07:07:00	18:36:00	00:08:44	10:36:00	11:29:00	1.37	1.27	###################	####################
CFDS/C-1	W-2015	2015/08/07	6	12:27:35	12:34:17	07:33:00	18:09:00	07:07:00	18:36:00	00:06:42	10:36:00	11:29:00	1.05	0.97	###################	####################
CFDS/C-1	W-2015	2015/08/07	7	12:58:23	13:05:39	07:33:00	18:09:00	07:07:00	18:36:00	00:07:16	10:36:00	11:29:00	1.14	1.06	###################	####################
CFDS/C-1	W-2015	2015/08/07	8	13:17:44	13:17:46	07:33:00	18:09:00	07:07:00	18:36:00	00:00:02	10:36:00	11:29:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/07	9	13:28:33	13:28:35	07:33:00	18:09:00	07:07:00	18:36:00	00:00:02	10:36:00	11:29:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/07	10	14:05:02	14:05:04	07:33:00	18:09:00	07:07:00	18:36:00	00:00:02	10:36:00	11:29:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/07	11	15:14:05	15:14:07	07:33:00	18:09:00	07:07:00	18:36:00	00:00:02	10:36:00	11:29:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/07	12	15:58:38	16:06:17	07:33:00	18:09:00	07:07:00	18:36:00	00:07:39	10:36:00	11:29:00	1.2	1.11	###################	####################
CFDS/C-1	W-2015	2015/08/07	13	16:18:16	17:37:31	07:33:00	18:09:00	07:07:00	18:36:00	01:19:15	10:36:00	11:29:00	12.46	11.50	###################	####################
CFDS/C-1	W-2015	2015/08/08	1	10:28:48	10:28:50	07:32:00	18:10:00	07:06:00	18:36:00	00:00:02	10:38:00	11:30:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/08	2	11:20:15	11:55:11	07:32:00	18:10:00	07:06:00	18:36:00	00:34:56	10:38:00	11:30:00	5.48	5.06	###################	####################
CFDS/C-1	W-2015	2015/08/08	3	12:09:48	12:12:42	07:32:00	18:10:00	07:06:00	18:36:00	00:02:54	10:38:00	11:30:00	0.45	0.42	###################	####################
CFDS/C-1	W-2015	2015/08/08	4	13:00:31	13:13:37	07:32:00	18:10:00	07:06:00	18:36:00	00:13:06	10:38:00	11:30:00	2.05	1.90	###################	####################
CFDS/C-1	W-2015	2015/08/08	5	13:23:13	13:43:42	07:32:00	18:10:00	07:06:00	18:36:00	00:20:29	10:38:00	11:30:00	3.21	2.97	###################	####################
CFDS/C-1	W-2015	2015/08/08	6	15:12:17	15:16:28	07:32:00	18:10:00	07:06:00	18:36:00	00:04:11	10:38:00	11:30:00	0.66	0.61	###################	####################
CFDS/C-1	W-2015	2015/08/08	7	15:35:27	15:53:45	07:32:00	18:10:00	07:06:00	18:36:00	00:18:18	10:38:00	11:30:00	2.87	2.65	###################	####################
CFDS/C-1	W-2015	2015/08/08	8	16:06:18	16:32:59	07:32:00	18:10:00	07:06:00	18:36:00	00:26:41	10:38:00	11:30:00	4.18	3.87	###################	####################
CFDS/C-1	W-2015	2015/08/08	9	16:49:34	16:49:36	07:32:00	18:10:00	07:06:00	18:36:00	00:00:02	10:38:00	11:30:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/08	10	17:16:18	17:29:21	07:32:00	18:10:00	07:06:00	18:36:00	00:13:03	10:38:00	11:30:00	2.05	1.89	###################	####################
CFDS/C-1	W-2015	2015/08/08	11	17:41:02	17:59:34	07:32:00	18:10:00	07:06:00	18:36:00	00:18:32	10:38:00	11:30:00	2.9	2.69	###################	####################
CFDS/C-1	W-2015	2015/08/09	1	09:02:54	09:02:56	07:31:00	18:11:00	07:05:00	18:37:00	00:00:02	10:40:00	11:32:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/09	2	10:41:43	10:41:45	07:31:00	18:11:00	07:05:00	18:37:00	00:00:02	10:40:00	11:32:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/09	3	11:00:34	11:00:36	07:31:00	18:11:00	07:05:00	18:37:00	00:00:02	10:40:00	11:32:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/09	4	11:39:42	11:39:43	07:31:00	18:11:00	07:05:00	18:37:00	00:00:01	10:40:00	11:32:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/09	5	11:56:44	11:59:55	07:31:00	18:11:00	07:05:00	18:37:00	00:03:11	10:40:00	11:32:00	0.5	0.46	###################	####################
CFDS/C-1	W-2015	2015/08/09	6	13:02:22	13:07:42	07:31:00	18:11:00	07:05:00	18:37:00	00:05:20	10:40:00	11:32:00	0.83	0.77	###################	####################
CFDS/C-1	W-2015	2015/08/09	7	16:37:56	16:37:58	07:31:00	18:11:00	07:05:00	18:37:00	00:00:02	10:40:00	11:32:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/09	8	17:02:26	17:02:27	07:31:00	18:11:00	07:05:00	18:37:00	00:00:01	10:40:00	11:32:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/09	9	17:28:38	17:28:40	07:31:00	18:11:00	07:05:00	18:37:00	00:00:02	10:40:00	11:32:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/09	10	18:11:16	18:11:18	07:31:00	18:11:00	07:05:00	18:37:00	00:00:02	10:40:00	11:32:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/10	1	08:10:39	08:16:42	07:30:00	18:12:00	07:04:00	18:38:00	00:06:03	10:42:00	11:34:00	0.94	0.87	###################	####################
CFDS/C-1	W-2015	2015/08/10	2	09:28:12	09:28:14	07:30:00	18:12:00	07:04:00	18:38:00	00:00:02	10:42:00	11:34:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/10	3	10:11:43	10:17:03	07:30:00	18:12:00	07:04:00	18:38:00	00:05:20	10:42:00	11:34:00	0.83	0.77	###################	####################
CFDS/C-1	W-2015	2015/08/10	4	10:55:46	10:55:48	07:30:00	18:12:00	07:04:00	18:38:00	00:00:02	10:42:00	11:34:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/10	5	11:26:04	11:32:31	07:30:00	18:12:00	07:04:00	18:38:00	00:06:27	10:42:00	11:34:00	1	0.93	###################	####################
CFDS/C-1	W-2015	2015/08/10	6	11:42:37	11:42:39	07:30:00	18:12:00	07:04:00	18:38:00	00:00:02	10:42:00	11:34:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/10	7	12:00:05	12:00:07	07:30:00	18:12:00	07:04:00	18:38:00	00:00:02	10:42:00	11:34:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/10	8	12:14:24	12:14:26	07:30:00	18:12:00	07:04:00	18:38:00	00:00:02	10:42:00	11:34:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/10	9	14:28:07	14:29:49	07:30:00	18:12:00	07:04:00	18:38:00	00:01:42	10:42:00	11:34:00	0.26	0.24	###################	####################

CFDS/C-1	W-2015	2015/08/10	10	15:25:37	15:25:39	07:30:00	18:12:00	07:04:00	18:38:00	00:00:02	10:42:00	11:34:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/10	11	15:45:15	15:45:17	07:30:00	18:12:00	07:04:00	18:38:00	00:00:02	10:42:00	11:34:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/10	12	16:09:40	16:15:44	07:30:00	18:12:00	07:04:00	18:38:00	00:06:04	10:42:00	11:34:00	0.94	0.87	###################	####################
CFDS/C-1	W-2015	2015/08/10	13	17:16:53	17:16:55	07:30:00	18:12:00	07:04:00	18:38:00	00:00:02	10:42:00	11:34:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/11	1	09:09:51	09:14:29	07:29:00	18:12:00	07:03:00	18:38:00	00:04:38	10:43:00	11:35:00	0.72	0.67	###################	####################
CFDS/C-1	W-2015	2015/08/11	2	10:13:56	10:13:58	07:29:00	18:12:00	07:03:00	18:38:00	00:00:02	10:43:00	11:35:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/11	3	13:40:46	13:40:48	07:29:00	18:12:00	07:03:00	18:38:00	00:00:02	10:43:00	11:35:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/11	4	14:04:30	14:06:53	07:29:00	18:12:00	07:03:00	18:38:00	00:02:23	10:43:00	11:35:00	0.37	0.34	###################	####################
CFDS/C-1	W-2015	2015/08/11	5	14:19:15	14:25:24	07:29:00	18:12:00	07:03:00	18:38:00	00:06:09	10:43:00	11:35:00	0.96	0.88	###################	####################
CFDS/C-1	W-2015	2015/08/11	6	16:47:27	16:47:29	07:29:00	18:12:00	07:03:00	18:38:00	00:00:02	10:43:00	11:35:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/11	7	17:44:52	17:47:24	07:29:00	18:12:00	07:03:00	18:38:00	00:02:32	10:43:00	11:35:00	0.39	0.36	###################	####################
CFDS/C-1	W-2015	2015/08/12	1	08:33:40	08:33:42	07:28:00	18:13:00	07:02:00	18:39:00	00:00:02	10:45:00	11:37:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/12	2	10:01:58	10:07:46	07:28:00	18:13:00	07:02:00	18:39:00	00:05:48	10:45:00	11:37:00	0.9	0.83	###################	####################
CFDS/C-1	W-2015	2015/08/12	3	10:43:18	10:45:00	07:28:00	18:13:00	07:02:00	18:39:00	00:01:42	10:45:00	11:37:00	0.26	0.24	###################	####################
CFDS/C-1	W-2015	2015/08/12	4	13:23:01	13:23:03	07:28:00	18:13:00	07:02:00	18:39:00	00:00:02	10:45:00	11:37:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/12	5	14:04:27	14:04:29	07:28:00	18:13:00	07:02:00	18:39:00	00:00:02	10:45:00	11:37:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/12	6	14:29:59	14:30:01	07:28:00	18:13:00	07:02:00	18:39:00	00:00:02	10:45:00	11:37:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/12	7	16:04:34	16:04:36	07:28:00	18:13:00	07:02:00	18:39:00	00:00:02	10:45:00	11:37:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/12	8	16:34:29	16:34:31	07:28:00	18:13:00	07:02:00	18:39:00	00:00:02	10:45:00	11:37:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/12	9	17:31:39	17:36:05	07:28:00	18:13:00	07:02:00	18:39:00	00:04:26	10:45:00	11:37:00	0.69	0.64	###################	####################
CFDS/C-1	W-2015	2015/08/12	10	18:11:08	18:14:00	07:28:00	18:13:00	07:02:00	18:39:00	00:02:52	10:45:00	11:37:00	0.44	0.41	###################	####################
CFDS/C-1	W-2015	2015/08/13	1	10:27:32	10:27:34	07:27:00	18:14:00	07:01:00	18:40:00	00:00:02	10:47:00	11:39:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/13	2	11:56:39	11:56:41	07:27:00	18:14:00	07:01:00	18:40:00	00:00:02	10:47:00	11:39:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/13	3	13:20:22	13:20:24	07:27:00	18:14:00	07:01:00	18:40:00	00:00:02	10:47:00	11:39:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/14	1	07:25:10	07:31:23	07:26:00	18:14:00	07:00:00	18:40:00	00:06:13	10:48:00	11:40:00	0.96	0.89	###################	####################
CFDS/C-1	W-2015	2015/08/14	2	13:24:24	13:24:25	07:26:00	18:14:00	07:00:00	18:40:00	00:00:01	10:48:00	11:40:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/15	1	08:10:40	08:10:42	07:25:00	18:15:00	06:59:00	18:41:00	00:00:02	10:50:00	11:42:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/15	2	11:08:23	11:08:25	07:25:00	18:15:00	06:59:00	18:41:00	00:00:02	10:50:00	11:42:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/15	3	12:12:27	12:12:29	07:25:00	18:15:00	06:59:00	18:41:00	00:00:02	10:50:00	11:42:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/15	4	13:15:10	13:15:12	07:25:00	18:15:00	06:59:00	18:41:00	00:00:02	10:50:00	11:42:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/15	5	13:53:04	13:53:05	07:25:00	18:15:00	06:59:00	18:41:00	00:00:01	10:50:00	11:42:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/15	6	14:56:09	14:56:10	07:25:00	18:15:00	06:59:00	18:41:00	00:00:01	10:50:00	11:42:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/16	1	09:12:46	09:30:47	07:24:00	18:16:00	06:58:00	18:42:00	00:18:01	10:52:00	11:44:00	2.76	2.56	###################	####################
CFDS/C-1	W-2015	2015/08/16	2	10:22:29	10:22:31	07:24:00	18:16:00	06:58:00	18:42:00	00:00:02	10:52:00	11:44:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/16	3	10:31:13	10:31:15	07:24:00	18:16:00	06:58:00	18:42:00	00:00:02	10:52:00	11:44:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/16	4	10:38:32	10:45:15	07:24:00	18:16:00	06:58:00	18:42:00	00:06:43	10:52:00	11:44:00	1.03	0.95	###################	####################
CFDS/C-1	W-2015	2015/08/17	1	13:43:40	13:45:23	07:22:00	18:17:00	06:57:00	18:42:00	00:01:43	10:55:00	11:45:00	0.26	0.24	###################	####################
CFDS/C-1	W-2015	2015/08/17	2	14:54:22	14:54:24	07:22:00	18:17:00	06:57:00	18:42:00	00:00:02	10:55:00	11:45:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/17	3	15:47:01	15:47:03	07:22:00	18:17:00	06:57:00	18:42:00	00:00:02	10:55:00	11:45:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/17	4	16:55:25	16:55:27	07:22:00	18:17:00	06:57:00	18:42:00	00:00:02	10:55:00	11:45:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/17	5	17:21:18	17:21:19	07:22:00	18:17:00	06:57:00	18:42:00	00:00:01	10:55:00	11:45:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/17	6	17:57:11	18:11:39	07:22:00	18:17:00	06:57:00	18:42:00	00:14:28	10:55:00	11:45:00	2.21	2.05	###################	####################
CFDS/C-1	W-2015	2015/08/18	1	11:34:21	11:34:23	07:21:00	18:17:00	06:56:00	18:43:00	00:00:02	10:56:00	11:47:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/18	2	12:28:07	12:29:52	07:21:00	18:17:00	06:56:00	18:43:00	00:01:45	10:56:00	11:47:00	0.27	0.25	###################	####################
CFDS/C-1	W-2015	2015/08/18	3	13:30:54	13:30:56	07:21:00	18:17:00	06:56:00	18:43:00	00:00:02	10:56:00	11:47:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/18	4	14:19:18	14:19:20	07:21:00	18:17:00	06:56:00	18:43:00	00:00:02	10:56:00	11:47:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/18	5	15:44:29	15:46:24	07:21:00	18:17:00	06:56:00	18:43:00	00:01:55	10:56:00	11:47:00	0.29	0.27	###################	####################
CFDS/C-1	W-2015	2015/08/18	6	16:43:43	16:45:27	07:21:00	18:17:00	06:56:00	18:43:00	00:01:44	10:56:00	11:47:00	0.26	0.24	###################	####################
CFDS/C-1	W-2015	2015/08/19	1	08:54:21	08:54:23	07:20:00	18:18:00	06:55:00	18:44:00	00:00:02	10:58:00	11:49:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/19	2	13:40:16	13:47:30	07:20:00	18:18:00	06:55:00	18:44:00	00:07:14	10:58:00	11:49:00	1.1	1.02	###################	####################
CFDS/C-1	W-2015	2015/08/19	3	15:18:51	15:20:33	07:20:00	18:18:00	06:55:00	18:44:00	00:01:42	10:58:00	11:49:00	0.26	0.24	###################	####################
CFDS/C-1	W-2015	2015/08/19	4	15:31:51	15:31:53	07:20:00	18:18:00	06:55:00	18:44:00	00:00:02	10:58:00	11:49:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/19	5	16:25:16	16:28:40	07:20:00	18:18:00	06:55:00	18:44:00	00:03:24	10:58:00	11:49:00	0.52	0.48	###################	####################
CFDS/C-1	W-2015	2015/08/20	1	09:10:30	09:13:54	07:19:00	18:19:00	06:53:00	18:44:00	00:03:24	11:00:00	11:51:00	0.52	0.48	###################	####################
CFDS/C-1	W-2015	2015/08/20	2	10:35:32	10:37:24	07:19:00	18:19:00	06:53:00	18:44:00	00:01:52	11:00:00	11:51:00	0.28	0.26	###################	####################
CFDS/C-1	W-2015	2015/08/20	3	14:22:04	14:25:30	07:19:00	18:19:00	06:53:00	18:44:00	00:03:26	11:00:00	11:51:00	0.52	0.48	###################	####################
CFDS/C-1	W-2015	2015/08/21	1	10:06:12	10:08:12	07:18:00	18:19:00	06:50:00	18:45:00	00:02:00	11:01:00	11:55:00	0.3	0.28	###################	####################
CFDS/C-1	W-2015	2015/08/21	2	10:39:55	10:39:57	07:18:00	18:19:00	06:50:00	18:45:00	00:00:02	11:01:00	11:55:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/21	3	14:02:40	14:12:31	07:18:00	18:19:00	06:50:00	18:45:00	00:09:51	11:01:00	11:55:00	1.49	1.38	###################	####################
CFDS/C-1	W-2015	2015/08/22	1	11:23:35	11:23:37	07:17:00	18:20:00	06:51:00	18:45:00	00:00:02	11:03:00	11:54:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/22	2	11:50:53	11:56:19	07:17:00	18:20:00	06:51:00	18:45:00	00:05:26	11:03:00	11:54:00	0.82	0.76	###################	####################
CFDS/C-1	W-2015	2015/08/22	3	13:53:45	13:53:47	07:17:00	18:20:00	06:51:00	18:45:00	00:00:02	11:03:00	11:54:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/22	4	14:05:21	14:05:23	07:17:00	18:20:00	06:51:00	18:45:00	00:00:02	11:03:00	11:54:00	0.01	0.00	###################	####################

CFDS/C-1	W-2015	2015/08/22	5	14:49:15	14:49:17	07:17:00	18:20:00	06:51:00	18:45:00	00:00:02	11:03:00	11:54:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/22	6	15:36:59	15:37:01	07:17:00	18:20:00	06:51:00	18:45:00	00:00:02	11:03:00	11:54:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/22	7	16:02:32	16:09:27	07:17:00	18:20:00	06:51:00	18:45:00	00:06:55	11:03:00	11:54:00	1.04	0.97	###################	####################
CFDS/C-1	W-2015	2015/08/22	8	17:08:48	17:08:50	07:17:00	18:20:00	06:51:00	18:45:00	00:00:02	11:03:00	11:54:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/23	1	13:00:44	13:00:45	07:15:00	18:21:00	06:50:00	18:46:00	00:00:01	11:06:00	11:56:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/23	2	14:14:52	14:18:20	07:15:00	18:21:00	06:50:00	18:46:00	00:03:28	11:06:00	11:56:00	0.52	0.48	###################	####################
CFDS/C-1	W-2015	2015/08/23	3	16:53:38	16:53:40	07:15:00	18:21:00	06:50:00	18:46:00	00:00:02	11:06:00	11:56:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/23	4	17:19:47	17:19:49	07:15:00	18:21:00	06:50:00	18:46:00	00:00:02	11:06:00	11:56:00	0.01	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/24	1	08:59:49	09:02:00	07:14:00	18:21:00	06:49:00	18:47:00	00:02:11	11:07:00	11:58:00	0.33	0.30	###################	####################
CFDS/C-1	W-2015	2015/08/24	2	10:21:10	10:22:56	07:14:00	18:21:00	06:49:00	18:47:00	00:01:46	11:07:00	11:58:00	0.26	0.25	###################	####################
CFDS/C-1	W-2015	2015/08/24	3	12:07:58	12:14:38	07:14:00	18:21:00	06:49:00	18:47:00	00:06:40	11:07:00	11:58:00	1	0.93	###################	####################
CFDS/C-1	W-2015	2015/08/24	4	14:06:44	14:10:08	07:14:00	18:21:00	06:49:00	18:47:00	00:03:24	11:07:00	11:58:00	0.51	0.47	###################	####################
CFDS/C-1	W-2015	2015/08/24	5	14:31:13	14:31:15	07:14:00	18:21:00	06:49:00	18:47:00	00:00:02	11:07:00	11:58:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/24	6	16:04:02	16:16:18	07:14:00	18:21:00	06:49:00	18:47:00	00:12:16	11:07:00	11:58:00	1.84	1.71	###################	####################
CFDS/C-1	W-2015	2015/08/24	7	16:39:48	16:41:32	07:14:00	18:21:00	06:49:00	18:47:00	00:01:44	11:07:00	11:58:00	0.26	0.24	###################	####################
CFDS/C-1	W-2015	2015/08/24	8	16:53:47	16:55:30	07:14:00	18:21:00	06:49:00	18:47:00	00:01:43	11:07:00	11:58:00	0.26	0.24	###################	####################
CFDS/C-1	W-2015	2015/08/25	1	11:48:09	11:53:19	07:13:00	18:22:00	06:48:00	18:47:00	00:05:10	11:09:00	11:59:00	0.77	0.72	###################	####################
CFDS/C-1	W-2015	2015/08/25	2	14:09:13	14:16:15	07:13:00	18:22:00	06:48:00	18:47:00	00:07:02	11:09:00	11:59:00	1.05	0.98	###################	####################
CFDS/C-1	W-2015	2015/08/25	3	15:43:09	15:43:11	07:13:00	18:22:00	06:48:00	18:47:00	00:00:02	11:09:00	11:59:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/25	4	16:00:14	16:00:16	07:13:00	18:22:00	06:48:00	18:47:00	00:00:02	11:09:00	11:59:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/25	5	18:16:18	18:16:19	07:13:00	18:22:00	06:48:00	18:47:00	00:00:01	11:09:00	11:59:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/26	1	10:36:27	10:36:29	07:12:00	18:23:00	06:46:00	18:48:00	00:00:02	11:11:00	12:02:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/26	2	12:12:38	12:14:21	07:12:00	18:23:00	06:46:00	18:48:00	00:01:43	11:11:00	12:02:00	0.26	0.24	###################	####################
CFDS/C-1	W-2015	2015/08/26	3	15:41:42	15:52:14	07:12:00	18:23:00	06:46:00	18:48:00	00:10:32	11:11:00	12:02:00	1.57	1.46	###################	####################
CFDS/C-1	W-2015	2015/08/26	4	16:04:20	16:09:57	07:12:00	18:23:00	06:46:00	18:48:00	00:05:37	11:11:00	12:02:00	0.84	0.78	###################	####################
CFDS/C-1	W-2015	2015/08/26	5	16:51:38	16:51:39	07:12:00	18:23:00	06:46:00	18:48:00	00:00:01	11:11:00	12:02:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/27	1	12:39:55	12:45:38	07:10:00	18:23:00	06:45:00	18:49:00	00:05:43	11:13:00	12:04:00	0.85	0.79	###################	####################
CFDS/C-1	W-2015	2015/08/27	2	12:59:28	13:07:48	07:10:00	18:23:00	06:45:00	18:49:00	00:08:20	11:13:00	12:04:00	1.24	1.15	###################	####################
CFDS/C-1	W-2015	2015/08/27	3	15:44:49	15:48:40	07:10:00	18:23:00	06:45:00	18:49:00	00:03:51	11:13:00	12:04:00	0.57	0.53	###################	####################
CFDS/C-1	W-2015	2015/08/27	4	17:05:37	17:09:10	07:10:00	18:23:00	06:45:00	18:49:00	00:03:33	11:13:00	12:04:00	0.53	0.49	###################	####################
CFDS/C-1	W-2015	2015/08/27	5	17:56:17	17:58:06	07:10:00	18:23:00	06:45:00	18:49:00	00:01:49	11:13:00	12:04:00	0.27	0.25	###################	####################
CFDS/C-1	W-2015	2015/08/28	1	07:42:33	07:42:35	07:09:00	18:24:00	06:44:00	18:49:00	00:00:02	11:15:00	12:05:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/28	2	08:48:08	08:55:22	07:09:00	18:24:00	06:44:00	18:49:00	00:07:14	11:15:00	12:05:00	1.07	1.00	###################	####################
CFDS/C-1	W-2015	2015/08/28	3	13:18:42	13:18:44	07:09:00	18:24:00	06:44:00	18:49:00	00:00:02	11:15:00	12:05:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/28	4	14:08:48	14:08:50	07:09:00	18:24:00	06:44:00	18:49:00	00:00:02	11:15:00	12:05:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/28	5	14:58:03	14:58:05	07:09:00	18:24:00	06:44:00	18:49:00	00:00:02	11:15:00	12:05:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/29	1	10:31:19	10:31:21	07:08:00	18:25:00	06:43:00	18:50:00	00:00:02	11:17:00	12:07:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/29	2	11:55:06	12:00:54	07:08:00	18:25:00	06:43:00	18:50:00	00:05:48	11:17:00	12:07:00	0.86	0.80	###################	####################
CFDS/C-1	W-2015	2015/08/29	3	13:50:34	13:50:36	07:08:00	18:25:00	06:43:00	18:50:00	00:00:02	11:17:00	12:07:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/29	4	14:57:49	14:57:51	07:08:00	18:25:00	06:43:00	18:50:00	00:00:02	11:17:00	12:07:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/30	1	10:49:31	10:51:50	07:07:00	18:26:00	06:41:00	18:51:00	00:02:19	11:19:00	12:10:00	0.34	0.32	###################	####################
CFDS/C-1	W-2015	2015/08/31	1	07:16:00	07:17:50	07:05:00	18:26:00	06:40:00	18:51:00	00:01:50	11:21:00	12:11:00	0.27	0.25	###################	####################
CFDS/C-1	W-2015	2015/08/31	2	09:58:11	10:03:45	07:05:00	18:26:00	06:40:00	18:51:00	00:05:34	11:21:00	12:11:00	0.82	0.76	###################	####################
CFDS/C-1	W-2015	2015/08/31	3	13:17:17	13:17:19	07:05:00	18:26:00	06:40:00	18:51:00	00:00:02	11:21:00	12:11:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/31	4	13:41:17	13:41:19	07:05:00	18:26:00	06:40:00	18:51:00	00:00:02	11:21:00	12:11:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/31	5	13:57:26	13:57:28	07:05:00	18:26:00	06:40:00	18:51:00	00:00:02	11:21:00	12:11:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/31	6	15:35:50	16:05:08	07:05:00	18:26:00	06:40:00	18:51:00	00:29:18	11:21:00	12:11:00	4.3	4.01	###################	####################
CFDS/C-1	W-2015	2015/08/31	7	16:17:11	16:17:13	07:05:00	18:26:00	06:40:00	18:51:00	00:00:02	11:21:00	12:11:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/31	8	16:31:11	16:31:13	07:05:00	18:26:00	06:40:00	18:51:00	00:00:02	11:21:00	12:11:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/08/31	9	17:05:16	17:15:39	07:05:00	18:26:00	06:40:00	18:51:00	00:10:23	11:21:00	12:11:00	1.52	1.42	###################	####################
CFDS/C-1	W-2015	2015/09/01	1	08:03:25	08:07:15	07:04:00	18:27:00	06:39:00	18:52:00	00:03:50	11:23:00	12:13:00	0.56	0.52	###################	####################
CFDS/C-1	W-2015	2015/09/01	2	09:46:55	09:55:21	07:04:00	18:27:00	06:39:00	18:52:00	00:08:26	11:23:00	12:13:00	1.23	1.15	###################	####################
CFDS/C-1	W-2015	2015/09/01	3	11:34:56	11:34:58	07:04:00	18:27:00	06:39:00	18:52:00	00:00:02	11:23:00	12:13:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/09/01	4	14:47:17	14:47:19	07:04:00	18:27:00	06:39:00	18:52:00	00:00:02	11:23:00	12:13:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/09/01	5	15:38:17	15:38:19	07:04:00	18:27:00	06:39:00	18:52:00	00:00:02	11:23:00	12:13:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/09/01	6	15:54:19	15:56:14	07:04:00	18:27:00	06:39:00	18:52:00	00:01:55	11:23:00	12:13:00	0.28	0.26	###################	####################
CFDS/C-1	W-2015	2015/09/01	7	17:51:10	17:51:12	07:04:00	18:27:00	06:39:00	18:52:00	00:00:02	11:23:00	12:13:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/09/02	1	10:11:04	10:18:08	07:03:00	18:28:00	06:38:00	18:53:00	00:07:04	11:25:00	12:15:00	1.03	0.96	###################	####################
CFDS/C-1	W-2015	2015/09/02	2	12:01:22	12:01:24	07:03:00	18:28:00	06:38:00	18:53:00	00:00:02	11:25:00	12:15:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/09/02	3	12:45:48	12:47:41	07:03:00	18:28:00	06:38:00	18:53:00	00:01:53	11:25:00	12:15:00	0.27	0.26	###################	####################
CFDS/C-1	W-2015	2015/09/02	4	16:32:16	16:46:20	07:03:00	18:28:00	06:38:00	18:53:00	00:14:04	11:25:00	12:15:00	2.05	1.91	###################	####################
CFDS/C-1	W-2015	2015/09/02	5	17:01:58	17:12:34	07:03:00	18:28:00	06:38:00	18:53:00	00:10:36	11:25:00	12:15:00	1.55	1.44	###################	####################
CFDS/C-1	W-2015	2015/09/02	6	18:18:29	18:25:43	07:03:00	18:28:00	06:38:00	18:53:00	00:07:14	11:25:00	12:15:00	1.06	0.98	###################	####################

CFDS/C-1	W-2015	2015/09/03	1	08:46:17	08:50:07	07:01:00	18:28:00	06:36:00	18:53:00	00:03:50	11:27:00	12:17:00	0.56	0.52	###################	####################
CFDS/C-1	W-2015	2015/09/03	2	09:47:03	09:53:43	07:01:00	18:28:00	06:36:00	18:53:00	00:06:40	11:27:00	12:17:00	0.97	0.91	###################	####################
CFDS/C-1	W-2015	2015/09/03	3	10:13:14	10:16:53	07:01:00	18:28:00	06:36:00	18:53:00	00:03:39	11:27:00	12:17:00	0.53	0.50	###################	####################
CFDS/C-1	W-2015	2015/09/03	4	13:04:56	13:04:58	07:01:00	18:28:00	06:36:00	18:53:00	00:00:02	11:27:00	12:17:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/09/03	5	13:24:26	13:26:09	07:01:00	18:28:00	06:36:00	18:53:00	00:01:43	11:27:00	12:17:00	0.25	0.23	###################	####################
CFDS/C-1	W-2015	2015/09/03	6	15:04:04	15:27:47	07:01:00	18:28:00	06:36:00	18:53:00	00:23:43	11:27:00	12:17:00	3.45	3.22	###################	####################
CFDS/C-1	W-2015	2015/09/04	1	14:30:19	14:37:13	07:00:00	18:29:00	06:35:00	18:54:00	00:06:54	11:29:00	12:19:00	1	0.93	###################	####################
CFDS/C-1	W-2015	2015/09/04	2	14:51:14	14:51:16	07:00:00	18:29:00	06:35:00	18:54:00	00:00:02	11:29:00	12:19:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/09/04	3	15:17:49	15:22:57	07:00:00	18:29:00	06:35:00	18:54:00	00:05:08	11:29:00	12:19:00	0.75	0.69	###################	####################
CFDS/C-1	W-2015	2015/09/04	4	16:11:53	16:23:38	07:00:00	18:29:00	06:35:00	18:54:00	00:11:45	11:29:00	12:19:00	1.71	1.59	###################	####################
CFDS/C-1	W-2015	2015/09/04	5	16:40:14	17:18:52	07:00:00	18:29:00	06:35:00	18:54:00	00:38:38	11:29:00	12:19:00	5.61	5.23	###################	####################
CFDS/C-1	W-2015	2015/09/05	1	07:10:06	07:22:11	06:59:00	18:30:00	06:34:00	18:55:00	00:12:05	11:31:00	12:21:00	1.75	1.63	###################	####################
CFDS/C-1	W-2015	2015/09/05	2	07:34:06	07:34:08	06:59:00	18:30:00	06:34:00	18:55:00	00:00:02	11:31:00	12:21:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/09/05	3	09:39:56	09:43:16	06:59:00	18:30:00	06:34:00	18:55:00	00:03:20	11:31:00	12:21:00	0.48	0.45	###################	####################
CFDS/C-1	W-2015	2015/09/05	4	10:02:48	10:15:16	06:59:00	18:30:00	06:34:00	18:55:00	00:12:28	11:31:00	12:21:00	1.8	1.68	###################	####################
CFDS/C-1	W-2015	2015/09/05	5	11:03:58	11:08:56	06:59:00	18:30:00	06:34:00	18:55:00	00:04:58	11:31:00	12:21:00	0.72	0.67	###################	####################
CFDS/C-1	W-2015	2015/09/05	6	12:19:57	12:30:03	06:59:00	18:30:00	06:34:00	18:55:00	00:10:06	11:31:00	12:21:00	1.46	1.36	###################	####################
CFDS/C-1	W-2015	2015/09/05	7	12:50:00	12:50:02	06:59:00	18:30:00	06:34:00	18:55:00	00:00:02	11:31:00	12:21:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/09/05	8	13:58:43	14:00:23	06:59:00	18:30:00	06:34:00	18:55:00	00:01:40	11:31:00	12:21:00	0.24	0.23	###################	####################
CFDS/C-1	W-2015	2015/09/05	9	14:16:59	14:22:06	06:59:00	18:30:00	06:34:00	18:55:00	00:05:07	11:31:00	12:21:00	0.74	0.69	###################	####################
CFDS/C-1	W-2015	2015/09/05	10	16:23:19	16:36:45	06:59:00	18:30:00	06:34:00	18:55:00	00:13:26	11:31:00	12:21:00	1.94	1.81	###################	####################
CFDS/C-1	W-2015	2015/09/05	11	17:55:42	17:59:03	06:59:00	18:30:00	06:34:00	18:55:00	00:03:21	11:31:00	12:21:00	0.48	0.45	###################	####################
CFDS/C-1	W-2015	2015/09/06	1	08:29:01	08:30:42	06:57:00	18:30:00	06:32:00	18:55:00	00:01:41	11:33:00	12:23:00	0.24	0.23	###################	####################
CFDS/C-1	W-2015	2015/09/06	2	10:13:12	10:28:46	06:57:00	18:30:00	06:32:00	18:55:00	00:15:34	11:33:00	12:23:00	2.25	2.10	###################	####################
CFDS/C-1	W-2015	2015/09/06	3	11:03:13	11:03:15	06:57:00	18:30:00	06:32:00	18:55:00	00:00:02	11:33:00	12:23:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/09/06	4	11:43:51	11:54:29	06:57:00	18:30:00	06:32:00	18:55:00	00:10:38	11:33:00	12:23:00	1.53	1.43	###################	####################
CFDS/C-1	W-2015	2015/09/06	5	14:34:11	14:36:02	06:57:00	18:30:00	06:32:00	18:55:00	00:01:51	11:33:00	12:23:00	0.27	0.25	###################	####################
CFDS/C-1	W-2015	2015/09/06	6	15:08:26	15:10:18	06:57:00	18:30:00	06:32:00	18:55:00	00:01:52	11:33:00	12:23:00	0.27	0.25	###################	####################
CFDS/C-1	W-2015	2015/09/06	7	15:23:47	15:48:45	06:57:00	18:30:00	06:32:00	18:55:00	00:24:58	11:33:00	12:23:00	3.6	3.36	###################	####################
CFDS/C-1	W-2015	2015/09/06	8	17:57:00	18:06:37	06:57:00	18:30:00	06:32:00	18:55:00	00:09:37	11:33:00	12:23:00	1.39	1.29	###################	####################
CFDS/C-1	W-2015	2015/09/07	1	09:56:13	09:56:15	06:56:00	18:31:00	06:31:00	18:56:00	00:00:02	11:35:00	12:25:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/09/07	2	10:36:41	10:47:11	06:56:00	18:31:00	06:31:00	18:56:00	00:10:30	11:35:00	12:25:00	1.51	1.41	###################	####################
CFDS/C-1	W-2015	2015/09/07	3	12:17:25	12:25:17	06:56:00	18:31:00	06:31:00	18:56:00	00:07:52	11:35:00	12:25:00	1.13	1.06	###################	####################
CFDS/C-1	W-2015	2015/09/07	4	13:42:57	13:42:59	06:56:00	18:31:00	06:31:00	18:56:00	00:00:02	11:35:00	12:25:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/09/07	5	14:26:46	14:45:34	06:56:00	18:31:00	06:31:00	18:56:00	00:18:48	11:35:00	12:25:00	2.71	2.52	###################	####################
CFDS/C-1	W-2015	2015/09/07	6	15:03:59	15:22:09	06:56:00	18:31:00	06:31:00	18:56:00	00:18:10	11:35:00	12:25:00	2.61	2.44	###################	####################
CFDS/C-1	W-2015	2015/09/07	7	16:11:40	16:13:22	06:56:00	18:31:00	06:31:00	18:56:00	00:01:42	11:35:00	12:25:00	0.24	0.23	###################	####################
CFDS/C-1	W-2015	2015/09/07	8	16:32:26	16:32:28	06:56:00	18:31:00	06:31:00	18:56:00	00:00:02	11:35:00	12:25:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/09/07	9	16:56:55	16:56:57	06:56:00	18:31:00	06:31:00	18:56:00	00:00:02	11:35:00	12:25:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/09/07	10	17:08:44	17:20:04	06:56:00	18:31:00	06:31:00	18:56:00	00:11:20	11:35:00	12:25:00	1.63	1.52	###################	####################
CFDS/C-1	W-2015	2015/09/07	11	18:25:00	18:25:01	06:56:00	18:31:00	06:31:00	18:56:00	00:00:01	11:35:00	12:25:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/09/08	1	10:20:18	10:25:17	06:55:00	18:32:00	06:30:00	18:57:00	00:04:59	11:37:00	12:27:00	0.71	0.67	###################	####################
CFDS/C-1	W-2015	2015/09/08	2	10:53:30	10:53:32	06:55:00	18:32:00	06:30:00	18:57:00	00:00:02	11:37:00	12:27:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/09/08	3	12:53:27	12:56:29	06:55:00	18:32:00	06:30:00	18:57:00	00:03:02	11:37:00	12:27:00	0.44	0.41	###################	####################
CFDS/C-1	W-2015	2015/09/08	4	13:09:09	13:13:46	06:55:00	18:32:00	06:30:00	18:57:00	00:04:37	11:37:00	12:27:00	0.66	0.62	###################	####################
CFDS/C-1	W-2015	2015/09/08	5	14:37:55	14:37:57	06:55:00	18:32:00	06:30:00	18:57:00	00:00:02	11:37:00	12:27:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/09/08	6	16:30:01	16:30:03	06:55:00	18:32:00	06:30:00	18:57:00	00:00:02	11:37:00	12:27:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/09/08	7	17:49:39	17:51:33	06:55:00	18:32:00	06:30:00	18:57:00	00:01:54	11:37:00	12:27:00	0.27	0.25	###################	####################
CFDS/C-1	W-2015	2015/09/09	1	12:42:05	12:42:07	06:53:00	18:32:00	06:28:00	18:57:00	00:00:02	11:39:00	12:29:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/09/09	2	14:12:34	14:12:36	06:53:00	18:32:00	06:28:00	18:57:00	00:00:02	11:39:00	12:29:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/09/09	3	14:31:16	14:31:18	06:53:00	18:32:00	06:28:00	18:57:00	00:00:02	11:39:00	12:29:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/09/09	4	16:16:10	16:16:12	06:53:00	18:32:00	06:28:00	18:57:00	00:00:02	11:39:00	12:29:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/09/09	5	17:37:58	17:38:00	06:53:00	18:32:00	06:28:00	18:57:00	00:00:02	11:39:00	12:29:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/09/10	1	10:29:02	10:29:04	06:52:00	18:33:00	06:27:00	18:58:00	00:00:02	11:41:00	12:31:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/09/10	2	17:46:46	17:46:48	06:52:00	18:33:00	06:27:00	18:58:00	00:00:02	11:41:00	12:31:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/09/11	1	08:17:59	08:18:01	06:51:00	18:34:00	06:26:00	18:59:00	00:00:02	11:43:00	12:33:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/09/11	2	16:13:08	16:13:10	06:51:00	18:34:00	06:26:00	18:59:00	00:00:02	11:43:00	12:33:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/09/11	3	17:51:55	17:51:57	06:51:00	18:34:00	06:26:00	18:59:00	00:00:02	11:43:00	12:33:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/09/12	1	09:06:37	09:06:39	06:49:00	18:34:00	06:24:00	18:59:00	00:00:02	11:45:00	12:35:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/09/12	2	09:53:47	09:53:49	06:49:00	18:34:00	06:24:00	18:59:00	00:00:02	11:45:00	12:35:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/09/12	3	10:45:54	10:45:56	06:49:00	18:34:00	06:24:00	18:59:00	00:00:02	11:45:00	12:35:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/09/12	4	12:18:08	12:18:10	06:49:00	18:34:00	06:24:00	18:59:00	00:00:02	11:45:00	12:35:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/09/12	5	17:03:41	17:03:43	06:49:00	18:34:00	06:24:00	18:59:00	00:00:02	11:45:00	12:35:00	0	0.00	###################	####################

CFDS/C-1	W-2015	2015/09/12	6	17:23:45	17:25:45	06:49:00	18:34:00	06:24:00	18:59:00	00:02:00	11:45:00	12:35:00	0.28	0.26	###################	####################
CFDS/C-1	W-2015	2015/09/13	1	09:50:34	09:50:36	06:48:00	18:35:00	06:23:00	19:00:00	00:00:02	11:47:00	12:37:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/09/13	2	12:22:38	12:22:39	06:48:00	18:35:00	06:23:00	19:00:00	00:00:01	11:47:00	12:37:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/09/14	1	07:15:45	07:17:26	06:46:00	18:36:00	06:22:00	19:01:00	00:01:41	11:50:00	12:39:00	0.24	0.22	###################	####################
CFDS/C-1	W-2015	2015/09/14	2	08:51:49	08:51:51	06:46:00	18:36:00	06:22:00	19:01:00	00:00:02	11:50:00	12:39:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/09/14	3	10:33:14	10:33:16	06:46:00	18:36:00	06:22:00	19:01:00	00:00:02	11:50:00	12:39:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/09/15	1	11:23:47	11:23:49	06:45:00	18:36:00	06:20:00	19:01:00	00:00:02	11:51:00	12:41:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/09/15	2	13:15:26	13:17:44	06:45:00	18:36:00	06:20:00	19:01:00	00:02:18	11:51:00	12:41:00	0.32	0.30	###################	####################
CFDS/C-1	W-2015	2015/09/15	3	14:56:46	14:58:28	06:45:00	18:36:00	06:20:00	19:01:00	00:01:42	11:51:00	12:41:00	0.24	0.22	###################	####################
CFDS/C-1	W-2015	2015/09/16	1	08:19:00	08:23:26	06:44:00	18:37:00	06:19:00	19:02:00	00:04:26	11:53:00	12:43:00	0.62	0.58	###################	####################
CFDS/C-1	W-2015	2015/09/16	2	08:28:45	08:28:47	06:44:00	18:37:00	06:19:00	19:02:00	00:00:02	11:53:00	12:43:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/09/16	3	08:53:46	09:05:08	06:44:00	18:37:00	06:19:00	19:02:00	00:11:22	11:53:00	12:43:00	1.59	1.49	###################	####################
CFDS/C-1	W-2015	2015/09/16	4	09:22:04	09:22:06	06:44:00	18:37:00	06:19:00	19:02:00	00:00:02	11:53:00	12:43:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/09/16	5	15:24:39	15:27:10	06:44:00	18:37:00	06:19:00	19:02:00	00:02:31	11:53:00	12:43:00	0.35	0.33	###################	####################
CFDS/C-1	W-2015	2015/09/17	0	00:00:00	00:00:00	06:44:00	18:37:00	06:17:00	19:03:00	00:00:00	11:53:00	12:46:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/09/18	2	08:30:15	08:31:56	06:41:00	18:38:00	06:16:00	19:03:00	00:01:41	11:57:00	12:47:00	0.23	0.22	###################	####################
CFDS/C-1	W-2015	2015/09/18	3	10:22:08	10:24:09	06:41:00	18:38:00	06:16:00	19:03:00	00:02:01	11:57:00	12:47:00	0.28	0.26	###################	####################
CFDS/C-1	W-2015	2015/09/18	4	15:56:25	15:56:27	06:41:00	18:38:00	06:16:00	19:03:00	00:00:02	11:57:00	12:47:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/09/18	5	17:54:14	17:56:05	06:41:00	18:38:00	06:16:00	19:03:00	00:01:51	11:57:00	12:47:00	0.26	0.24	###################	####################
CFDS/C-1	W-2015	2015/09/18	6	18:07:25	18:14:47	06:41:00	18:38:00	06:16:00	19:03:00	00:07:22	11:57:00	12:47:00	1.03	0.96	###################	####################
CFDS/C-1	W-2015	2015/09/19	1	09:53:57	09:53:59	06:39:00	18:39:00	06:15:00	19:04:00	00:00:02	12:00:00	12:49:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/09/19	2	15:08:38	15:10:31	06:39:00	18:39:00	06:15:00	19:04:00	00:01:53	12:00:00	12:49:00	0.26	0.24	###################	####################
CFDS/C-1	W-2015	2015/09/19	3	16:24:31	16:26:55	06:39:00	18:39:00	06:15:00	19:04:00	00:02:24	12:00:00	12:49:00	0.33	0.31	###################	####################
CFDS/C-1	W-2015	2015/09/20	1	14:34:35	14:36:21	06:38:00	18:40:00	06:13:00	19:05:00	00:01:46	12:02:00	12:52:00	0.24	0.23	###################	####################
CFDS/C-1	W-2015	2015/09/20	2	15:07:42	15:35:24	06:38:00	18:40:00	06:13:00	19:05:00	00:27:42	12:02:00	12:52:00	3.84	3.59	###################	####################
CFDS/C-1	W-2015	2015/09/20	3	17:07:13	17:16:50	06:38:00	18:40:00	06:13:00	19:05:00	00:09:37	12:02:00	12:52:00	1.33	1.25	###################	####################
CFDS/C-1	W-2015	2015/09/21	1	08:14:18	08:22:51	06:37:00	18:41:00	06:12:00	19:05:00	00:08:33	12:04:00	12:53:00	1.18	1.11	###################	####################
CFDS/C-1	W-2015	2015/09/21	2	08:33:52	08:33:54	06:37:00	18:41:00	06:12:00	19:05:00	00:00:02	12:04:00	12:53:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/09/21	3	10:14:25	10:16:50	06:37:00	18:41:00	06:12:00	19:05:00	00:02:25	12:04:00	12:53:00	0.33	0.31	###################	####################
CFDS/C-1	W-2015	2015/09/21	4	14:11:32	14:16:04	06:37:00	18:41:00	06:12:00	19:05:00	00:04:32	12:04:00	12:53:00	0.63	0.59	###################	####################
CFDS/C-1	W-2015	2015/09/21	5	15:24:34	15:35:44	06:37:00	18:41:00	06:12:00	19:05:00	00:11:10	12:04:00	12:53:00	1.54	1.45	###################	####################
CFDS/C-1	W-2015	2015/09/21	6	16:35:01	16:44:21	06:37:00	18:41:00	06:12:00	19:05:00	00:09:20	12:04:00	12:53:00	1.29	1.21	###################	####################
CFDS/C-1	W-2015	2015/09/21	7	16:58:39	16:58:42	06:37:00	18:41:00	06:12:00	19:05:00	00:00:03	12:04:00	12:53:00	0.01	0.01	###################	####################
CFDS/C-1	W-2015	2015/09/21	8	17:26:39	17:38:51	06:37:00	18:41:00	06:12:00	19:05:00	00:12:12	12:04:00	12:53:00	1.69	1.58	###################	####################
CFDS/C-1	W-2015	2015/09/22	1	09:58:37	09:58:39	06:35:00	18:41:00	06:10:00	19:06:00	00:00:02	12:06:00	12:56:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/09/22	2	11:42:06	11:42:08	06:35:00	18:41:00	06:10:00	19:06:00	00:00:02	12:06:00	12:56:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/09/22	3	16:33:13	16:47:35	06:35:00	18:41:00	06:10:00	19:06:00	00:14:22	12:06:00	12:56:00	1.98	1.85	###################	####################
CFDS/C-1	W-2015	2015/09/23	1	11:22:41	11:22:43	06:34:00	18:42:00	06:09:00	19:07:00	00:00:02	12:08:00	12:58:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/09/23	2	12:28:21	12:28:23	06:34:00	18:42:00	06:09:00	19:07:00	00:00:02	12:08:00	12:58:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/09/23	3	13:23:33	13:31:42	06:34:00	18:42:00	06:09:00	19:07:00	00:08:09	12:08:00	12:58:00	1.12	1.05	###################	####################
CFDS/C-1	W-2015	2015/09/23	4	15:39:35	15:45:50	06:34:00	18:42:00	06:09:00	19:07:00	00:06:15	12:08:00	12:58:00	0.86	0.80	###################	####################
CFDS/C-1	W-2015	2015/09/24	1	07:21:56	07:23:38	06:32:00	18:43:00	06:08:00	19:08:00	00:01:42	12:11:00	13:00:00	0.23	0.22	###################	####################
CFDS/C-1	W-2015	2015/09/24	2	09:40:39	09:40:41	06:32:00	18:43:00	06:08:00	19:08:00	00:00:02	12:11:00	13:00:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/09/24	3	09:54:46	09:56:27	06:32:00	18:43:00	06:08:00	19:08:00	00:01:41	12:11:00	13:00:00	0.23	0.22	###################	####################
CFDS/C-1	W-2015	2015/09/24	4	10:38:53	10:44:20	06:32:00	18:43:00	06:08:00	19:08:00	00:05:27	12:11:00	13:00:00	0.75	0.70	###################	####################
CFDS/C-1	W-2015	2015/09/25	1	12:52:40	12:52:42	06:31:00	18:43:00	06:06:00	19:08:00	00:00:02	12:12:00	13:02:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/09/25	2	13:32:58	13:32:59	06:31:00	18:43:00	06:06:00	19:08:00	00:00:01	12:12:00	13:02:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/09/26	1	08:15:24	08:15:26	06:30:00	18:44:00	06:05:00	19:09:00	00:00:02	12:14:00	13:04:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/09/26	2	14:03:46	14:03:48	06:30:00	18:44:00	06:05:00	19:09:00	00:00:02	12:14:00	13:04:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/09/26	3	14:45:44	14:50:51	06:30:00	18:44:00	06:05:00	19:09:00	00:05:07	12:14:00	13:04:00	0.7	0.65	###################	####################
CFDS/C-1	W-2015	2015/09/26	4	15:05:31	15:11:09	06:30:00	18:44:00	06:05:00	19:09:00	00:05:38	12:14:00	13:04:00	0.77	0.72	###################	####################
CFDS/C-1	W-2015	2015/09/27	1	08:10:27	08:10:29	06:28:00	18:45:00	06:03:00	19:10:00	00:00:02	12:17:00	13:07:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/09/27	2	15:21:44	15:26:29	06:28:00	18:45:00	06:03:00	19:10:00	00:04:45	12:17:00	13:07:00	0.64	0.60	###################	####################
CFDS/C-1	W-2015	2015/09/27	3	17:13:44	17:13:46	06:28:00	18:45:00	06:03:00	19:10:00	00:00:02	12:17:00	13:07:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/09/28	1	11:48:39	11:52:37	06:27:00	18:45:00	06:02:00	19:10:00	00:03:58	12:18:00	13:08:00	0.54	0.50	###################	####################
CFDS/C-1	W-2015	2015/09/28	2	14:08:20	14:08:22	06:27:00	18:45:00	06:02:00	19:10:00	00:00:02	12:18:00	13:08:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/09/28	3	15:22:08	15:22:10	06:27:00	18:45:00	06:02:00	19:10:00	00:00:02	12:18:00	13:08:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/09/29	1	11:05:03	11:16:49	06:25:00	18:46:00	06:00:00	19:11:00	00:11:46	12:21:00	13:11:00	1.59	1.49	###################	####################
CFDS/C-1	W-2015	2015/09/29	2	12:05:02	12:10:16	06:25:00	18:46:00	06:00:00	19:11:00	00:05:14	12:21:00	13:11:00	0.71	0.66	###################	####################
CFDS/C-1	W-2015	2015/09/29	3	12:24:00	12:27:33	06:25:00	18:46:00	06:00:00	19:11:00	00:03:33	12:21:00	13:11:00	0.48	0.45	###################	####################
CFDS/C-1	W-2015	2015/09/29	4	15:27:49	15:27:51	06:25:00	18:46:00	06:00:00	19:11:00	00:00:02	12:21:00	13:11:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/09/29	5	15:41:12	15:41:14	06:25:00	18:46:00	06:00:00	19:11:00	00:00:02	12:21:00	13:11:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/09/29	6	17:24:45	17:24:47	06:25:00	18:46:00	06:00:00	19:11:00	00:00:02	12:21:00	13:11:00	0	0.00	###################	####################

CFDS/C-1	W-2015	2015/09/29	7	17:52:40	17:58:21	06:25:00	18:46:00	06:00:00	19:11:00	00:05:41	12:21:00	13:11:00	0.77	0.72	###################	####################
CFDS/C-1	W-2015	2015/09/30	1	09:54:07	09:54:09	06:24:00	18:47:00	05:59:00	19:12:00	00:00:02	12:23:00	13:13:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/09/30	2	10:11:26	10:13:20	06:24:00	18:47:00	05:59:00	19:12:00	00:01:54	12:23:00	13:13:00	0.26	0.24	###################	####################
CFDS/C-1	W-2015	2015/09/30	3	14:53:18	15:06:05	06:24:00	18:47:00	05:59:00	19:12:00	00:12:47	12:23:00	13:13:00	1.72	1.61	###################	####################
CFDS/C-1	W-2015	2015/09/30	4	16:19:35	16:19:37	06:24:00	18:47:00	05:59:00	19:12:00	00:00:02	12:23:00	13:13:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/10/01	1	08:43:21	09:23:34	06:23:00	18:48:00	05:58:00	19:13:00	00:40:13	12:25:00	13:15:00	5.4	5.06	###################	####################
CFDS/C-1	W-2015	2015/10/01	2	09:56:36	10:12:20	06:23:00	18:48:00	05:58:00	19:13:00	00:15:44	12:25:00	13:15:00	2.11	1.98	###################	####################
CFDS/C-1	W-2015	2015/10/01	3	15:38:00	15:39:43	06:23:00	18:48:00	05:58:00	19:13:00	00:01:43	12:25:00	13:15:00	0.23	0.22	###################	####################
CFDS/C-1	W-2015	2015/10/01	4	15:41:20	16:03:55	06:23:00	18:48:00	05:58:00	19:13:00	00:22:35	12:25:00	13:15:00	3.03	2.84	###################	####################
CFDS/C-1	W-2015	2015/10/02	1	08:52:29	08:54:11	06:21:00	18:48:00	05:56:00	19:13:00	00:01:42	12:27:00	13:17:00	0.23	0.21	###################	####################
CFDS/C-1	W-2015	2015/10/02	2	09:32:38	09:32:40	06:21:00	18:48:00	05:56:00	19:13:00	00:00:02	12:27:00	13:17:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/10/02	3	12:39:12	12:47:50	06:21:00	18:48:00	05:56:00	19:13:00	00:08:38	12:27:00	13:17:00	1.16	1.08	###################	####################
CFDS/C-1	W-2015	2015/10/02	4	16:12:28	16:35:46	06:21:00	18:48:00	05:56:00	19:13:00	00:23:18	12:27:00	13:17:00	3.12	2.92	###################	####################
CFDS/C-1	W-2015	2015/10/02	5	18:44:00	18:44:02	06:21:00	18:48:00	05:56:00	19:13:00	00:00:02	12:27:00	13:17:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/10/03	1	07:34:35	08:24:00	06:20:00	18:49:00	05:55:00	19:14:00	00:49:25	12:29:00	13:19:00	6.6	6.19	###################	####################
CFDS/C-1	W-2015	2015/10/03	2	09:05:08	09:19:48	06:20:00	18:49:00	05:55:00	19:14:00	00:14:40	12:29:00	13:19:00	1.96	1.84	###################	####################
CFDS/C-1	W-2015	2015/10/03	3	13:06:48	13:48:41	06:20:00	18:49:00	05:55:00	19:14:00	00:41:53	12:29:00	13:19:00	5.59	5.24	###################	####################
CFDS/C-1	W-2015	2015/10/03	4	15:39:51	15:39:53	06:20:00	18:49:00	05:55:00	19:14:00	00:00:02	12:29:00	13:19:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/10/03	5	17:07:17	17:07:19	06:20:00	18:49:00	05:55:00	19:14:00	00:00:02	12:29:00	13:19:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/10/03	6	17:20:49	17:24:12	06:20:00	18:49:00	05:55:00	19:14:00	00:03:23	12:29:00	13:19:00	0.45	0.42	###################	####################
CFDS/C-1	W-2015	2015/10/04	1	06:51:10	07:01:28	06:19:00	18:50:00	05:54:00	19:15:00	00:10:18	12:31:00	13:21:00	1.37	1.29	###################	####################
CFDS/C-1	W-2015	2015/10/04	2	08:05:33	08:16:27	06:19:00	18:50:00	05:54:00	19:15:00	00:10:54	12:31:00	13:21:00	1.45	1.36	###################	####################
CFDS/C-1	W-2015	2015/10/04	3	14:23:42	14:30:52	06:19:00	18:50:00	05:54:00	19:15:00	00:07:10	12:31:00	13:21:00	0.95	0.90	###################	####################
CFDS/C-1	W-2015	2015/10/04	4	14:54:04	15:45:34	06:19:00	18:50:00	05:54:00	19:15:00	00:51:30	12:31:00	13:21:00	6.86	6.43	###################	####################
CFDS/C-1	W-2015	2015/10/05	1	06:20:09	06:27:34	06:16:00	18:51:00	05:52:00	19:16:00	00:07:25	12:35:00	13:24:00	0.98	0.92	###################	####################
CFDS/C-1	W-2015	2015/10/05	2	10:35:12	10:35:14	06:16:00	18:51:00	05:52:00	19:16:00	00:00:02	12:35:00	13:24:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/10/06	0	00:00:00	00:00:00	06:16:00	18:51:00	05:51:00	19:17:00	00:00:00	12:35:00	13:26:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/10/07	0	00:00:00	00:00:00	06:15:00	18:52:00	05:49:00	19:17:00	00:00:00	12:37:00	13:28:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/10/08	0	00:00:00	00:00:00	06:13:00	18:53:00	05:48:00	19:18:00	00:00:00	12:40:00	13:30:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/10/09	0	00:00:00	00:00:00	06:12:00	18:54:00	05:47:00	19:19:00	00:00:00	12:42:00	13:32:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/10/10	0	00:00:00	00:00:00	06:11:00	18:55:00	05:45:00	19:20:00	00:00:00	12:41:00	13:35:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/10/11	0	00:00:00	00:00:00	06:09:00	18:55:00	05:44:00	19:21:00	00:00:00	12:46:00	13:37:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/10/12	0	00:00:00	00:00:00	06:08:00	18:56:00	05:43:00	19:21:00	00:00:00	12:48:00	13:38:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/10/13	0	00:00:00	00:00:00	06:07:00	18:57:00	05:51:00	19:22:00	00:00:00	12:50:00	13:31:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/10/14	0	00:00:00	00:00:00	06:05:00	18:58:00	05:40:00	19:23:00	00:00:00	12:53:00	13:43:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/10/15	0	00:00:00	00:00:00	06:04:00	18:59:00	05:39:00	19:24:00	00:00:00	12:51:00	13:45:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/10/16	0	00:00:00	00:00:00	06:03:00	18:59:00	05:37:00	19:25:00	00:00:00	12:56:00	13:48:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/10/17	0	00:00:00	00:00:00	06:02:00	19:00:00	05:36:00	19:26:00	00:00:00	12:58:00	13:50:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/10/18	0	00:00:00	00:00:00	06:00:00	19:01:00	05:35:00	19:26:00	00:00:00	13:01:00	13:51:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/10/19	0	00:00:00	00:00:00	05:59:00	19:02:00	05:33:00	19:27:00	00:00:00	13:03:00	13:54:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/10/20	0	00:00:00	00:00:00	05:58:00	19:02:00	05:32:00	19:28:00	00:00:00	13:04:00	13:56:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/10/21	0	00:00:00	00:00:00	05:57:00	19:03:00	05:31:00	19:29:00	00:00:00	13:06:00	13:58:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/10/22	0	00:00:00	00:00:00	05:56:00	19:04:00	05:30:00	19:30:00	00:00:00	13:08:00	14:00:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/10/23	0	00:00:00	00:00:00	05:54:00	19:05:00	05:29:00	19:31:00	00:00:00	13:11:00	14:02:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/10/24	0	00:00:00	00:00:00	05:53:00	19:06:00	05:27:00	19:32:00	00:00:00	13:13:00	14:05:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/10/25	0	00:00:00	00:00:00	05:52:00	19:07:00	05:26:00	19:33:00	00:00:00	13:15:00	14:07:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/10/26	0	00:00:00	00:00:00	05:51:00	19:08:00	05:25:00	19:34:00	00:00:00	13:17:00	14:09:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/10/27	0	00:00:00	00:00:00	05:50:00	19:08:00	05:24:00	19:35:00	00:00:00	13:18:00	14:11:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/10/28	0	00:00:00	00:00:00	05:49:00	19:09:00	05:23:00	19:36:00	00:00:00	13:20:00	14:13:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/10/29	0	00:00:00	00:00:00	05:48:00	19:10:00	05:22:00	19:37:00	00:00:00	13:22:00	14:15:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/10/30	0	00:00:00	00:00:00	05:47:00	19:11:00	05:21:00	19:38:00	00:00:00	13:24:00	14:17:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/10/31	0	00:00:00	00:00:00	05:46:00	19:12:00	05:19:00	19:39:00	00:00:00	13:26:00	14:20:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/11/01	0	00:00:00	00:00:00	05:45:00	19:13:00	05:18:00	19:40:00	00:00:00	13:28:00	14:22:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/11/02	1	17:48:16	17:48:17	05:44:00	19:14:00	05:17:00	19:41:00	00:00:01	13:30:00	14:24:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/11/03	0	00:00:00	00:00:00	05:43:00	19:15:00	05:16:00	19:42:00	00:00:00	13:32:00	14:26:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/11/04	0	00:00:00	00:00:00	05:42:00	19:16:00	05:15:00	19:43:00	00:00:00	13:34:00	14:28:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/11/05	1	11:36:17	11:36:19	05:41:00	19:17:00	05:14:00	19:44:00	00:00:02	13:36:00	14:30:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/11/06	0	00:00:00	00:00:00	05:40:00	19:18:00	05:13:00	19:45:00	00:00:00	13:38:00	14:32:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/11/07	0	00:00:00	00:00:00	05:39:00	19:19:00	05:12:00	19:46:00	00:00:00	13:40:00	14:34:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/11/08	0	00:00:00	00:00:00	05:39:00	19:20:00	05:12:00	19:47:00	00:00:00	13:41:00	14:35:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/11/09	1	12:55:54	12:55:56	05:38:00	19:20:00	05:11:00	19:48:00	00:00:02	13:42:00	14:37:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/11/10	0	00:00:00	00:00:00	05:37:00	19:21:00	05:10:00	19:49:00	00:00:00	13:44:00	14:39:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/11/11	0	00:00:00	00:00:00	05:36:00	19:22:00	05:09:00	19:50:00	00:00:00	13:46:00	14:41:00	0	0.00	###################	####################

CFDS/C-1	W-2015	2015/11/12	0	00:00:00	00:00:00	05:35:00	19:23:00	05:08:00	19:51:00	00:00:00	13:48:00	14:43:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/11/13	1	10:41:21	10:41:23	05:35:00	19:24:00	05:07:00	19:52:00	00:00:02	13:49:00	14:45:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/11/14	0	00:00:00	00:00:00	05:34:00	19:25:00	05:07:00	19:53:00	00:00:00	13:51:00	14:46:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/11/15	0	00:00:00	00:00:00	05:33:00	19:26:00	05:06:00	19:54:00	00:00:00	13:53:00	14:48:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/11/16	0	00:00:00	00:00:00	05:33:00	19:27:00	05:05:00	19:55:00	00:00:00	13:54:00	14:50:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/11/17	0	00:00:00	00:00:00	05:32:00	19:28:00	05:05:00	19:56:00	00:00:00	13:56:00	14:51:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/11/18	0	00:00:00	00:00:00	05:32:00	19:29:00	05:04:00	19:57:00	00:00:00	13:57:00	14:53:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/11/19	0	00:00:00	00:00:00	05:31:00	19:30:00	05:03:00	19:58:00	00:00:00	13:59:00	14:55:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/11/20	1	08:29:36	08:29:38	05:31:00	19:31:00	05:03:00	19:59:00	00:00:02	14:00:00	14:56:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/11/20	2	16:41:01	16:41:02	05:31:00	19:31:00	05:03:00	19:59:00	00:00:01	14:00:00	14:56:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/11/21	0	00:00:00	00:00:00	05:30:00	19:32:00	05:02:00	20:00:00	00:00:00	14:02:00	14:58:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/11/22	0	00:00:00	00:00:00	05:30:00	19:33:00	05:02:00	20:01:00	00:00:00	14:03:00	14:59:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/11/23	1	06:35:10	06:35:12	05:29:00	19:34:00	05:02:00	20:02:00	00:00:02	14:05:00	15:00:00	0	0.00	###################	####################
CFDS/C-1	W-2015	2015/11/24	0	00:00:00	00:00:00	05:29:00	19:35:00	05:01:00	20:03:00	00:00:00	14:06:00	15:02:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/07/06	1	12:22:43	12:24:04	07:51:00	17:49:00	07:23:00	18:17:00	00:01:21	09:58:00	10:54:00	0.23	0.21	###################	####################
CFDS/C-2	W-2015	2015/07/07	1	15:23:51	15:23:52	07:51:00	17:49:00	07:23:00	18:17:00	00:00:01	09:58:00	10:54:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/07/08	1	07:55:06	08:28:53	07:50:00	17:50:00	07:23:00	18:17:00	00:33:47	10:00:00	10:54:00	5.63	5.17	###################	####################
CFDS/C-2	W-2015	2015/07/08	2	11:23:38	11:43:12	07:50:00	17:50:00	07:23:00	18:17:00	00:19:34	10:00:00	10:54:00	3.26	2.99	###################	####################
CFDS/C-2	W-2015	2015/07/08	3	12:02:25	12:27:36	07:50:00	17:50:00	07:23:00	18:17:00	00:25:11	10:00:00	10:54:00	4.2	3.85	###################	####################
CFDS/C-2	W-2015	2015/07/08	4	16:42:30	17:04:55	07:50:00	17:50:00	07:23:00	18:17:00	00:22:25	10:00:00	10:54:00	3.74	3.43	###################	####################
CFDS/C-2	W-2015	2015/07/09	1	12:12:32	12:17:08	07:50:00	17:51:00	07:23:00	18:18:00	00:04:36	10:01:00	10:55:00	0.77	0.70	###################	####################
CFDS/C-2	W-2015	2015/07/09	2	12:45:17	13:09:57	07:50:00	17:51:00	07:23:00	18:18:00	00:24:40	10:01:00	10:55:00	4.1	3.77	###################	####################
CFDS/C-2	W-2015	2015/07/09	3	13:50:59	14:35:05	07:50:00	17:51:00	07:23:00	18:18:00	00:44:06	10:01:00	10:55:00	7.34	6.73	###################	####################
CFDS/C-2	W-2015	2015/07/09	4	15:36:53	15:36:55	07:50:00	17:51:00	07:23:00	18:18:00	00:00:02	10:01:00	10:55:00	0.01	0.00	###################	####################
CFDS/C-2	W-2015	2015/07/09	5	17:08:00	17:22:55	07:50:00	17:51:00	07:23:00	18:18:00	00:14:55	10:01:00	10:55:00	2.48	2.28	###################	####################
CFDS/C-2	W-2015	2015/07/09	6	17:47:42	18:02:38	07:50:00	17:51:00	07:23:00	18:18:00	00:14:56	10:01:00	10:55:00	2.48	2.28	###################	####################
CFDS/C-2	W-2015	2015/07/10	1	07:43:42	07:59:45	07:50:00	17:51:00	07:23:00	18:18:00	00:16:03	10:01:00	10:55:00	2.67	2.45	###################	####################
CFDS/C-2	W-2015	2015/07/10	2	08:14:14	08:19:03	07:50:00	17:51:00	07:23:00	18:18:00	00:04:49	10:01:00	10:55:00	0.8	0.74	###################	####################
CFDS/C-2	W-2015	2015/07/10	3	11:42:01	11:51:15	07:50:00	17:51:00	07:23:00	18:18:00	00:09:14	10:01:00	10:55:00	1.54	1.41	###################	####################
CFDS/C-2	W-2015	2015/07/10	4	12:26:27	12:52:17	07:50:00	17:51:00	07:23:00	18:18:00	00:25:50	10:01:00	10:55:00	4.3	3.94	###################	####################
CFDS/C-2	W-2015	2015/07/10	5	14:56:59	17:04:57	07:50:00	17:51:00	07:23:00	18:18:00	02:07:58	10:01:00	10:55:00	21.29	19.54	###################	####################
CFDS/C-2	W-2015	2015/07/10	6	17:21:47	17:57:37	07:50:00	17:51:00	07:23:00	18:18:00	00:35:50	10:01:00	10:55:00	5.96	5.47	###################	####################
CFDS/C-2	W-2015	2015/07/11	1	07:41:36	08:15:04	07:50:00	17:52:00	07:22:00	18:19:00	00:33:28	10:02:00	10:57:00	5.56	5.09	###################	####################
CFDS/C-2	W-2015	2015/07/11	2	11:40:17	12:22:50	07:50:00	17:52:00	07:22:00	18:19:00	00:42:33	10:02:00	10:57:00	7.07	6.48	###################	####################
CFDS/C-2	W-2015	2015/07/11	3	12:49:58	13:07:08	07:50:00	17:52:00	07:22:00	18:19:00	00:17:10	10:02:00	10:57:00	2.85	2.61	###################	####################
CFDS/C-2	W-2015	2015/07/11	4	14:01:21	15:58:18	07:50:00	17:52:00	07:22:00	18:19:00	01:56:57	10:02:00	10:57:00	19.43	17.80	###################	####################
CFDS/C-2	W-2015	2015/07/11	5	16:21:03	16:54:11	07:50:00	17:52:00	07:22:00	18:19:00	00:33:08	10:02:00	10:57:00	5.5	5.04	###################	####################
CFDS/C-2	W-2015	2015/07/11	6	17:14:02	17:16:23	07:50:00	17:52:00	07:22:00	18:19:00	00:02:21	10:02:00	10:57:00	0.39	0.36	###################	####################
CFDS/C-2	W-2015	2015/07/11	7	17:30:15	17:37:49	07:50:00	17:52:00	07:22:00	18:19:00	00:07:34	10:02:00	10:57:00	1.26	1.15	###################	####################
CFDS/C-2	W-2015	2015/07/12	1	07:36:00	08:06:34	07:49:00	17:52:00	07:22:00	18:20:00	00:30:34	10:03:00	10:58:00	5.07	4.65	###################	####################
CFDS/C-2	W-2015	2015/07/12	2	11:23:42	11:23:44	07:49:00	17:52:00	07:22:00	18:20:00	00:00:02	10:03:00	10:58:00	0.01	0.00	###################	####################
CFDS/C-2	W-2015	2015/07/12	3	12:16:13	12:59:28	07:49:00	17:52:00	07:22:00	18:20:00	00:43:15	10:03:00	10:58:00	7.17	6.57	###################	####################
CFDS/C-2	W-2015	2015/07/12	4	14:13:50	14:24:02	07:49:00	17:52:00	07:22:00	18:20:00	00:10:12	10:03:00	10:58:00	1.69	1.55	###################	####################
CFDS/C-2	W-2015	2015/07/12	5	15:22:53	15:34:03	07:49:00	17:52:00	07:22:00	18:20:00	00:11:10	10:03:00	10:58:00	1.85	1.70	###################	####################
CFDS/C-2	W-2015	2015/07/12	6	16:19:38	16:19:39	07:49:00	17:52:00	07:22:00	18:20:00	00:00:01	10:03:00	10:58:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/07/12	7	16:31:43	17:41:03	07:49:00	17:52:00	07:22:00	18:20:00	01:09:20	10:03:00	10:58:00	11.5	10.54	###################	####################
CFDS/C-2	W-2015	2015/07/12	8	17:57:52	18:00:09	07:49:00	17:52:00	07:22:00	18:20:00	00:02:17	10:03:00	10:58:00	0.38	0.35	###################	####################
CFDS/C-2	W-2015	2015/07/13	1	08:14:13	08:37:24	07:49:00	17:53:00	07:22:00	18:20:00	00:23:11	10:04:00	10:58:00	3.84	3.52	###################	####################
CFDS/C-2	W-2015	2015/07/13	2	08:57:36	09:02:11	07:49:00	17:53:00	07:22:00	18:20:00	00:04:35	10:04:00	10:58:00	0.76	0.70	###################	####################
CFDS/C-2	W-2015	2015/07/13	3	09:39:17	10:33:49	07:49:00	17:53:00	07:22:00	18:20:00	00:54:32	10:04:00	10:58:00	9.03	8.29	###################	####################
CFDS/C-2	W-2015	2015/07/13	4	12:32:56	12:47:37	07:49:00	17:53:00	07:22:00	18:20:00	00:14:41	10:04:00	10:58:00	2.43	2.23	###################	####################
CFDS/C-2	W-2015	2015/07/13	5	13:14:12	13:31:22	07:49:00	17:53:00	07:22:00	18:20:00	00:17:10	10:04:00	10:58:00	2.84	2.61	###################	####################
CFDS/C-2	W-2015	2015/07/13	6	13:42:41	13:57:26	07:49:00	17:53:00	07:22:00	18:20:00	00:14:45	10:04:00	10:58:00	2.44	2.24	###################	####################
CFDS/C-2	W-2015	2015/07/13	7	14:14:11	14:16:27	07:49:00	17:53:00	07:22:00	18:20:00	00:02:16	10:04:00	10:58:00	0.38	0.34	###################	####################
CFDS/C-2	W-2015	2015/07/13	8	14:34:52	14:50:52	07:49:00	17:53:00	07:22:00	18:20:00	00:16:00	10:04:00	10:58:00	2.65	2.43	###################	####################
CFDS/C-2	W-2015	2015/07/13	9	15:36:59	16:19:30	07:49:00	17:53:00	07:22:00	18:20:00	00:42:31	10:04:00	10:58:00	7.04	6.46	###################	####################
CFDS/C-2	W-2015	2015/07/13	10	16:30:21	16:32:42	07:49:00	17:53:00	07:22:00	18:20:00	00:02:21	10:04:00	10:58:00	0.39	0.36	###################	####################
CFDS/C-2	W-2015	2015/07/13	11	17:03:30	17:28:09	07:49:00	17:53:00	07:22:00	18:20:00	00:24:39	10:04:00	10:58:00	4.08	3.75	###################	####################
CFDS/C-2	W-2015	2015/07/13	12	17:40:29	17:55:07	07:49:00	17:53:00	07:22:00	18:20:00	00:14:38	10:04:00	10:58:00	2.42	2.22	###################	####################
CFDS/C-2	W-2015	2015/07/14	1	07:45:03	07:55:11	07:49:00	17:53:00	07:21:00	18:21:00	00:10:08	10:04:00	11:00:00	1.68	1.53	###################	####################
CFDS/C-2	W-2015	2015/07/14	2	09:27:52	09:34:39	07:49:00	17:53:00	07:21:00	18:21:00	00:06:47	10:04:00	11:00:00	1.12	1.03	###################	####################
CFDS/C-2	W-2015	2015/07/14	3	10:28:06	10:32:38	07:49:00	17:53:00	07:21:00	18:21:00	00:04:32	10:04:00	11:00:00	0.75	0.69	###################	####################
CFDS/C-2	W-2015	2015/07/14	4	11:18:07	11:44:01	07:49:00	17:53:00	07:21:00	18:21:00	00:25:54	10:04:00	11:00:00	4.29	3.92	###################	####################

CFDS/C-2	W-2015	2015/07/14	5	11:54:49	12:11:15	07:49:00	17:53:00	07:21:00	18:21:00	00:16:26	10:04:00	11:00:00	2.72	2.49	###################	####################
CFDS/C-2	W-2015	2015/07/14	6	12:26:58	13:09:01	07:49:00	17:53:00	07:21:00	18:21:00	00:42:03	10:04:00	11:00:00	6.96	6.37	###################	####################
CFDS/C-2	W-2015	2015/07/14	7	14:40:37	15:28:27	07:49:00	17:53:00	07:21:00	18:21:00	00:47:50	10:04:00	11:00:00	7.92	7.25	###################	####################
CFDS/C-2	W-2015	2015/07/14	8	15:41:40	15:56:37	07:49:00	17:53:00	07:21:00	18:21:00	00:14:57	10:04:00	11:00:00	2.48	2.27	###################	####################
CFDS/C-2	W-2015	2015/07/14	9	16:16:46	16:56:56	07:49:00	17:53:00	07:21:00	18:21:00	00:40:10	10:04:00	11:00:00	6.65	6.09	###################	####################
CFDS/C-2	W-2015	2015/07/14	10	17:10:41	17:23:22	07:49:00	17:53:00	07:21:00	18:21:00	00:12:41	10:04:00	11:00:00	2.1	1.92	###################	####################
CFDS/C-2	W-2015	2015/07/14	11	17:42:54	17:46:13	07:49:00	17:53:00	07:21:00	18:21:00	00:03:19	10:04:00	11:00:00	0.55	0.50	###################	####################
CFDS/C-2	W-2015	2015/07/15	1	08:14:23	08:14:25	07:48:00	17:54:00	07:21:00	18:21:00	00:00:02	10:06:00	11:00:00	0.01	0.00	###################	####################
CFDS/C-2	W-2015	2015/07/15	2	08:25:31	08:36:14	07:48:00	17:54:00	07:21:00	18:21:00	00:10:43	10:06:00	11:00:00	1.77	1.62	###################	####################
CFDS/C-2	W-2015	2015/07/15	3	09:44:01	10:29:07	07:48:00	17:54:00	07:21:00	18:21:00	00:45:06	10:06:00	11:00:00	7.44	6.83	###################	####################
CFDS/C-2	W-2015	2015/07/15	4	10:57:49	11:35:17	07:48:00	17:54:00	07:21:00	18:21:00	00:37:28	10:06:00	11:00:00	6.18	5.68	###################	####################
CFDS/C-2	W-2015	2015/07/15	5	12:14:16	12:57:03	07:48:00	17:54:00	07:21:00	18:21:00	00:42:47	10:06:00	11:00:00	7.06	6.48	###################	####################
CFDS/C-2	W-2015	2015/07/15	6	13:56:13	14:26:06	07:48:00	17:54:00	07:21:00	18:21:00	00:29:53	10:06:00	11:00:00	4.93	4.53	###################	####################
CFDS/C-2	W-2015	2015/07/15	7	14:54:31	15:00:06	07:48:00	17:54:00	07:21:00	18:21:00	00:05:35	10:06:00	11:00:00	0.92	0.85	###################	####################
CFDS/C-2	W-2015	2015/07/15	8	15:11:33	15:59:28	07:48:00	17:54:00	07:21:00	18:21:00	00:47:55	10:06:00	11:00:00	7.91	7.26	###################	####################
CFDS/C-2	W-2015	2015/07/15	9	16:51:19	17:26:12	07:48:00	17:54:00	07:21:00	18:21:00	00:34:53	10:06:00	11:00:00	5.76	5.28	###################	####################
CFDS/C-2	W-2015	2015/07/15	10	17:44:44	17:49:28	07:48:00	17:54:00	07:21:00	18:21:00	00:04:44	10:06:00	11:00:00	0.78	0.72	###################	####################
CFDS/C-2	W-2015	2015/07/16	1	07:58:07	08:08:22	07:48:00	17:55:00	07:21:00	18:22:00	00:10:15	10:07:00	11:01:00	1.69	1.55	###################	####################
CFDS/C-2	W-2015	2015/07/16	2	09:30:54	09:43:41	07:48:00	17:55:00	07:21:00	18:22:00	00:12:47	10:07:00	11:01:00	2.11	1.93	###################	####################
CFDS/C-2	W-2015	2015/07/16	3	09:57:31	09:58:40	07:48:00	17:55:00	07:21:00	18:22:00	00:01:09	10:07:00	11:01:00	0.19	0.17	###################	####################
CFDS/C-2	W-2015	2015/07/16	4	11:10:20	11:35:17	07:48:00	17:55:00	07:21:00	18:22:00	00:24:57	10:07:00	11:01:00	4.11	3.77	###################	####################
CFDS/C-2	W-2015	2015/07/16	5	12:03:27	12:19:22	07:48:00	17:55:00	07:21:00	18:22:00	00:15:55	10:07:00	11:01:00	2.62	2.41	###################	####################
CFDS/C-2	W-2015	2015/07/16	6	12:32:52	12:35:09	07:48:00	17:55:00	07:21:00	18:22:00	00:02:17	10:07:00	11:01:00	0.38	0.34	###################	####################
CFDS/C-2	W-2015	2015/07/16	7	12:45:30	12:50:01	07:48:00	17:55:00	07:21:00	18:22:00	00:04:31	10:07:00	11:01:00	0.74	0.68	###################	####################
CFDS/C-2	W-2015	2015/07/16	8	13:18:08	13:35:51	07:48:00	17:55:00	07:21:00	18:22:00	00:17:43	10:07:00	11:01:00	2.92	2.68	###################	####################
CFDS/C-2	W-2015	2015/07/16	9	14:41:07	14:56:09	07:48:00	17:55:00	07:21:00	18:22:00	00:15:02	10:07:00	11:01:00	2.48	2.27	###################	####################
CFDS/C-2	W-2015	2015/07/16	10	15:32:42	16:43:23	07:48:00	17:55:00	07:21:00	18:22:00	01:10:41	10:07:00	11:01:00	11.64	10.69	###################	####################
CFDS/C-2	W-2015	2015/07/16	11	16:58:29	16:58:30	07:48:00	17:55:00	07:21:00	18:22:00	00:00:01	10:07:00	11:01:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/07/16	12	17:34:35	17:52:13	07:48:00	17:55:00	07:21:00	18:22:00	00:17:38	10:07:00	11:01:00	2.9	2.67	###################	####################
CFDS/C-2	W-2015	2015/07/16	13	18:03:23	18:07:46	07:48:00	17:55:00	07:21:00	18:22:00	00:04:23	10:07:00	11:01:00	0.72	0.66	###################	####################
CFDS/C-2	W-2015	2015/07/17	1	08:00:28	08:00:30	07:48:00	17:55:00	07:20:00	18:22:00	00:00:02	10:07:00	11:02:00	0.01	0.00	###################	####################
CFDS/C-2	W-2015	2015/07/17	2	08:17:13	08:52:50	07:48:00	17:55:00	07:20:00	18:22:00	00:35:37	10:07:00	11:02:00	5.87	5.38	###################	####################
CFDS/C-2	W-2015	2015/07/17	3	09:21:28	09:36:13	07:48:00	17:55:00	07:20:00	18:22:00	00:14:45	10:07:00	11:02:00	2.43	2.23	###################	####################
CFDS/C-2	W-2015	2015/07/17	4	10:13:46	10:29:34	07:48:00	17:55:00	07:20:00	18:22:00	00:15:48	10:07:00	11:02:00	2.6	2.39	###################	####################
CFDS/C-2	W-2015	2015/07/17	5	11:24:37	11:39:48	07:48:00	17:55:00	07:20:00	18:22:00	00:15:11	10:07:00	11:02:00	2.5	2.29	###################	####################
CFDS/C-2	W-2015	2015/07/17	6	12:09:29	12:09:30	07:48:00	17:55:00	07:20:00	18:22:00	00:00:01	10:07:00	11:02:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/07/17	7	12:27:19	12:41:17	07:48:00	17:55:00	07:20:00	18:22:00	00:13:58	10:07:00	11:02:00	2.3	2.11	###################	####################
CFDS/C-2	W-2015	2015/07/17	8	12:54:14	13:01:07	07:48:00	17:55:00	07:20:00	18:22:00	00:06:53	10:07:00	11:02:00	1.13	1.04	###################	####################
CFDS/C-2	W-2015	2015/07/17	9	13:25:17	13:26:26	07:48:00	17:55:00	07:20:00	18:22:00	00:01:09	10:07:00	11:02:00	0.19	0.17	###################	####################
CFDS/C-2	W-2015	2015/07/17	10	13:31:37	13:57:29	07:48:00	17:55:00	07:20:00	18:22:00	00:25:52	10:07:00	11:02:00	4.26	3.91	###################	####################
CFDS/C-2	W-2015	2015/07/17	11	14:15:28	14:15:29	07:48:00	17:55:00	07:20:00	18:22:00	00:00:01	10:07:00	11:02:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/07/17	12	14:25:29	14:34:14	07:48:00	17:55:00	07:20:00	18:22:00	00:08:45	10:07:00	11:02:00	1.44	1.32	###################	####################
CFDS/C-2	W-2015	2015/07/17	13	15:07:53	15:40:30	07:48:00	17:55:00	07:20:00	18:22:00	00:32:37	10:07:00	11:02:00	5.37	4.93	###################	####################
CFDS/C-2	W-2015	2015/07/17	14	17:27:16	17:30:43	07:48:00	17:55:00	07:20:00	18:22:00	00:03:27	10:07:00	11:02:00	0.57	0.52	###################	####################
CFDS/C-2	W-2015	2015/07/17	15	17:44:47	17:44:48	07:48:00	17:55:00	07:20:00	18:22:00	00:00:01	10:07:00	11:02:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/07/18	1	09:52:24	09:53:32	07:47:00	17:56:00	07:20:00	18:23:00	00:01:08	10:09:00	11:03:00	0.19	0.17	###################	####################
CFDS/C-2	W-2015	2015/07/18	2	10:17:21	10:19:52	07:47:00	17:56:00	07:20:00	18:23:00	00:02:31	10:09:00	11:03:00	0.41	0.38	###################	####################
CFDS/C-2	W-2015	2015/07/18	3	12:22:07	12:24:07	07:47:00	17:56:00	07:20:00	18:23:00	00:02:00	10:09:00	11:03:00	0.33	0.30	###################	####################
CFDS/C-2	W-2015	2015/07/18	4	13:44:43	13:51:35	07:47:00	17:56:00	07:20:00	18:23:00	00:06:52	10:09:00	11:03:00	1.13	1.04	###################	####################
CFDS/C-2	W-2015	2015/07/18	5	14:03:38	14:03:39	07:47:00	17:56:00	07:20:00	18:23:00	00:00:01	10:09:00	11:03:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/07/18	6	15:15:02	15:33:27	07:47:00	17:56:00	07:20:00	18:23:00	00:18:25	10:09:00	11:03:00	3.02	2.78	###################	####################
CFDS/C-2	W-2015	2015/07/18	7	15:45:33	18:00:20	07:47:00	17:56:00	07:20:00	18:23:00	02:14:47	10:09:00	11:03:00	22.13	20.33	###################	####################
CFDS/C-2	W-2015	2015/07/19	1	12:05:29	12:18:44	07:47:00	17:56:00	07:19:00	18:24:00	00:13:15	10:09:00	11:05:00	2.18	1.99	###################	####################
CFDS/C-2	W-2015	2015/07/19	2	13:46:00	13:46:01	07:47:00	17:56:00	07:19:00	18:24:00	00:00:01	10:09:00	11:05:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/07/19	3	14:00:07	14:02:35	07:47:00	17:56:00	07:19:00	18:24:00	00:02:28	10:09:00	11:05:00	0.41	0.37	###################	####################
CFDS/C-2	W-2015	2015/07/19	4	15:07:55	15:10:22	07:47:00	17:56:00	07:19:00	18:24:00	00:02:27	10:09:00	11:05:00	0.4	0.37	###################	####################
CFDS/C-2	W-2015	2015/07/19	5	15:54:56	16:31:34	07:47:00	17:56:00	07:19:00	18:24:00	00:36:38	10:09:00	11:05:00	6.02	5.51	###################	####################
CFDS/C-2	W-2015	2015/07/19	6	16:45:00	16:45:02	07:47:00	17:56:00	07:19:00	18:24:00	00:00:02	10:09:00	11:05:00	0.01	0.00	###################	####################
CFDS/C-2	W-2015	2015/07/19	7	17:02:34	17:15:26	07:47:00	17:56:00	07:19:00	18:24:00	00:12:52	10:09:00	11:05:00	2.11	1.94	###################	####################
CFDS/C-2	W-2015	2015/07/20	1	08:19:10	08:24:53	07:46:00	17:57:00	07:19:00	18:24:00	00:05:43	10:11:00	11:05:00	0.94	0.86	###################	####################
CFDS/C-2	W-2015	2015/07/20	2	08:40:03	08:40:05	07:46:00	17:57:00	07:19:00	18:24:00	00:00:02	10:11:00	11:05:00	0.01	0.00	###################	####################
CFDS/C-2	W-2015	2015/07/20	3	08:50:11	08:57:12	07:46:00	17:57:00	07:19:00	18:24:00	00:07:01	10:11:00	11:05:00	1.15	1.06	###################	####################
CFDS/C-2	W-2015	2015/07/20	4	11:03:02	11:03:03	07:46:00	17:57:00	07:19:00	18:24:00	00:00:01	10:11:00	11:05:00	0	0.00	###################	####################

CFDS/C-2	W-2015	2015/07/20	5	11:14:50	11:14:52	07:46:00	17:57:00	07:19:00	18:24:00	00:00:02	10:11:00	11:05:00	0.01	0.00	###################	####################
CFDS/C-2	W-2015	2015/07/20	6	12:23:01	12:27:47	07:46:00	17:57:00	07:19:00	18:24:00	00:04:46	10:11:00	11:05:00	0.78	0.72	###################	####################
CFDS/C-2	W-2015	2015/07/20	7	12:38:51	12:41:10	07:46:00	17:57:00	07:19:00	18:24:00	00:02:19	10:11:00	11:05:00	0.38	0.35	###################	####################
CFDS/C-2	W-2015	2015/07/20	8	13:33:02	13:40:26	07:46:00	17:57:00	07:19:00	18:24:00	00:07:24	10:11:00	11:05:00	1.21	1.11	###################	####################
CFDS/C-2	W-2015	2015/07/20	9	14:13:06	14:29:02	07:46:00	17:57:00	07:19:00	18:24:00	00:15:56	10:11:00	11:05:00	2.61	2.40	###################	####################
CFDS/C-2	W-2015	2015/07/20	10	14:47:20	14:49:50	07:46:00	17:57:00	07:19:00	18:24:00	00:02:30	10:11:00	11:05:00	0.41	0.38	###################	####################
CFDS/C-2	W-2015	2015/07/20	11	15:17:45	15:17:47	07:46:00	17:57:00	07:19:00	18:24:00	00:00:02	10:11:00	11:05:00	0.01	0.00	###################	####################
CFDS/C-2	W-2015	2015/07/20	12	15:31:07	15:44:14	07:46:00	17:57:00	07:19:00	18:24:00	00:13:07	10:11:00	11:05:00	2.15	1.97	###################	####################
CFDS/C-2	W-2015	2015/07/20	13	16:28:39	16:51:52	07:46:00	17:57:00	07:19:00	18:24:00	00:23:13	10:11:00	11:05:00	3.8	3.49	###################	####################
CFDS/C-2	W-2015	2015/07/21	1	09:19:42	09:20:52	07:46:00	17:58:00	07:19:00	18:25:00	00:01:10	10:12:00	11:06:00	0.19	0.18	###################	####################
CFDS/C-2	W-2015	2015/07/21	2	10:43:14	10:44:26	07:46:00	17:58:00	07:19:00	18:25:00	00:01:12	10:12:00	11:06:00	0.2	0.18	###################	####################
CFDS/C-2	W-2015	2015/07/21	3	11:41:01	11:46:44	07:46:00	17:58:00	07:19:00	18:25:00	00:05:43	10:12:00	11:06:00	0.93	0.86	###################	####################
CFDS/C-2	W-2015	2015/07/21	4	12:13:05	12:37:06	07:46:00	17:58:00	07:19:00	18:25:00	00:24:01	10:12:00	11:06:00	3.92	3.61	###################	####################
CFDS/C-2	W-2015	2015/07/21	5	13:03:16	13:09:01	07:46:00	17:58:00	07:19:00	18:25:00	00:05:45	10:12:00	11:06:00	0.94	0.86	###################	####################
CFDS/C-2	W-2015	2015/07/21	6	15:22:29	15:22:31	07:46:00	17:58:00	07:19:00	18:25:00	00:00:02	10:12:00	11:06:00	0.01	0.00	###################	####################
CFDS/C-2	W-2015	2015/07/21	7	15:49:45	16:12:15	07:46:00	17:58:00	07:19:00	18:25:00	00:22:30	10:12:00	11:06:00	3.68	3.38	###################	####################
CFDS/C-2	W-2015	2015/07/21	8	16:28:13	17:14:40	07:46:00	17:58:00	07:19:00	18:25:00	00:46:27	10:12:00	11:06:00	7.59	6.97	###################	####################
CFDS/C-2	W-2015	2015/07/22	1	09:03:02	09:08:40	07:45:00	17:58:00	07:18:00	18:25:00	00:05:38	10:13:00	11:07:00	0.92	0.84	###################	####################
CFDS/C-2	W-2015	2015/07/22	2	09:44:34	09:49:10	07:45:00	17:58:00	07:18:00	18:25:00	00:04:36	10:13:00	11:07:00	0.75	0.69	###################	####################
CFDS/C-2	W-2015	2015/07/22	3	10:36:06	10:57:13	07:45:00	17:58:00	07:18:00	18:25:00	00:21:07	10:13:00	11:07:00	3.44	3.17	###################	####################
CFDS/C-2	W-2015	2015/07/22	4	11:12:32	11:17:39	07:45:00	17:58:00	07:18:00	18:25:00	00:05:07	10:13:00	11:07:00	0.83	0.77	###################	####################
CFDS/C-2	W-2015	2015/07/22	5	11:35:46	11:36:55	07:45:00	17:58:00	07:18:00	18:25:00	00:01:09	10:13:00	11:07:00	0.19	0.17	###################	####################
CFDS/C-2	W-2015	2015/07/22	6	11:49:48	11:56:38	07:45:00	17:58:00	07:18:00	18:25:00	00:06:50	10:13:00	11:07:00	1.11	1.02	###################	####################
CFDS/C-2	W-2015	2015/07/22	7	14:19:57	14:25:15	07:45:00	17:58:00	07:18:00	18:25:00	00:05:18	10:13:00	11:07:00	0.86	0.79	###################	####################
CFDS/C-2	W-2015	2015/07/22	8	14:47:23	14:57:30	07:45:00	17:58:00	07:18:00	18:25:00	00:10:07	10:13:00	11:07:00	1.65	1.52	###################	####################
CFDS/C-2	W-2015	2015/07/22	9	15:07:51	15:10:15	07:45:00	17:58:00	07:18:00	18:25:00	00:02:24	10:13:00	11:07:00	0.39	0.36	###################	####################
CFDS/C-2	W-2015	2015/07/22	10	15:29:02	16:30:07	07:45:00	17:58:00	07:18:00	18:25:00	01:01:05	10:13:00	11:07:00	9.96	9.16	###################	####################
CFDS/C-2	W-2015	2015/07/22	11	16:48:56	17:19:20	07:45:00	17:58:00	07:18:00	18:25:00	00:30:24	10:13:00	11:07:00	4.96	4.56	###################	####################
CFDS/C-2	W-2015	2015/07/22	12	17:32:07	17:57:42	07:45:00	17:58:00	07:18:00	18:25:00	00:25:35	10:13:00	11:07:00	4.17	3.84	###################	####################
CFDS/C-2	W-2015	2015/07/23	1	13:48:38	13:55:26	07:44:00	17:59:00	07:17:00	18:26:00	00:06:48	10:15:00	11:09:00	1.11	1.02	###################	####################
CFDS/C-2	W-2015	2015/07/23	2	14:40:08	15:02:53	07:44:00	17:59:00	07:17:00	18:26:00	00:22:45	10:15:00	11:09:00	3.7	3.40	###################	####################
CFDS/C-2	W-2015	2015/07/23	3	15:19:15	15:48:47	07:44:00	17:59:00	07:17:00	18:26:00	00:29:32	10:15:00	11:09:00	4.8	4.41	###################	####################
CFDS/C-2	W-2015	2015/07/23	4	16:05:37	16:41:36	07:44:00	17:59:00	07:17:00	18:26:00	00:35:59	10:15:00	11:09:00	5.85	5.38	###################	####################
CFDS/C-2	W-2015	2015/07/24	1	08:24:00	08:37:31	07:44:00	18:00:00	07:17:00	18:27:00	00:13:31	10:16:00	11:10:00	2.19	2.02	###################	####################
CFDS/C-2	W-2015	2015/07/24	2	10:01:41	10:05:07	07:44:00	18:00:00	07:17:00	18:27:00	00:03:26	10:16:00	11:10:00	0.56	0.51	###################	####################
CFDS/C-2	W-2015	2015/07/24	3	13:11:18	13:22:43	07:44:00	18:00:00	07:17:00	18:27:00	00:11:25	10:16:00	11:10:00	1.85	1.70	###################	####################
CFDS/C-2	W-2015	2015/07/24	4	14:12:35	14:20:40	07:44:00	18:00:00	07:17:00	18:27:00	00:08:05	10:16:00	11:10:00	1.31	1.21	###################	####################
CFDS/C-2	W-2015	2015/07/24	5	14:35:20	14:53:24	07:44:00	18:00:00	07:17:00	18:27:00	00:18:04	10:16:00	11:10:00	2.93	2.70	###################	####################
CFDS/C-2	W-2015	2015/07/24	6	15:17:10	15:52:34	07:44:00	18:00:00	07:17:00	18:27:00	00:35:24	10:16:00	11:10:00	5.75	5.28	###################	####################
CFDS/C-2	W-2015	2015/07/24	7	16:13:32	16:13:34	07:44:00	18:00:00	07:17:00	18:27:00	00:00:02	10:16:00	11:10:00	0.01	0.00	###################	####################
CFDS/C-2	W-2015	2015/07/24	8	17:41:27	17:41:29	07:44:00	18:00:00	07:17:00	18:27:00	00:00:02	10:16:00	11:10:00	0.01	0.00	###################	####################
CFDS/C-2	W-2015	2015/07/25	1	10:41:29	10:52:49	07:43:00	18:00:00	07:16:00	18:27:00	00:11:20	10:17:00	11:11:00	1.84	1.69	###################	####################
CFDS/C-2	W-2015	2015/07/25	2	11:09:22	11:11:40	07:43:00	18:00:00	07:16:00	18:27:00	00:02:18	10:17:00	11:11:00	0.37	0.34	###################	####################
CFDS/C-2	W-2015	2015/07/25	3	11:58:17	12:17:41	07:43:00	18:00:00	07:16:00	18:27:00	00:19:24	10:17:00	11:11:00	3.14	2.89	###################	####################
CFDS/C-2	W-2015	2015/07/25	4	13:09:05	13:30:43	07:43:00	18:00:00	07:16:00	18:27:00	00:21:38	10:17:00	11:11:00	3.51	3.22	###################	####################
CFDS/C-2	W-2015	2015/07/25	5	15:06:32	15:11:25	07:43:00	18:00:00	07:16:00	18:27:00	00:04:53	10:17:00	11:11:00	0.79	0.73	###################	####################
CFDS/C-2	W-2015	2015/07/25	6	15:34:19	16:00:32	07:43:00	18:00:00	07:16:00	18:27:00	00:26:13	10:17:00	11:11:00	4.25	3.91	###################	####################
CFDS/C-2	W-2015	2015/07/25	7	16:25:25	16:50:55	07:43:00	18:00:00	07:16:00	18:27:00	00:25:30	10:17:00	11:11:00	4.13	3.80	###################	####################
CFDS/C-2	W-2015	2015/07/25	8	17:12:00	17:12:01	07:43:00	18:00:00	07:16:00	18:27:00	00:00:01	10:17:00	11:11:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/07/25	9	17:40:14	17:44:45	07:43:00	18:00:00	07:16:00	18:27:00	00:04:31	10:17:00	11:11:00	0.73	0.67	###################	####################
CFDS/C-2	W-2015	2015/07/26	1	09:40:13	09:47:05	07:42:00	18:01:00	07:16:00	18:28:00	00:06:52	10:19:00	11:12:00	1.11	1.02	###################	####################
CFDS/C-2	W-2015	2015/07/26	2	10:10:43	10:17:47	07:42:00	18:01:00	07:16:00	18:28:00	00:07:04	10:19:00	11:12:00	1.14	1.05	###################	####################
CFDS/C-2	W-2015	2015/07/26	3	11:51:03	12:11:24	07:42:00	18:01:00	07:16:00	18:28:00	00:20:21	10:19:00	11:12:00	3.29	3.03	###################	####################
CFDS/C-2	W-2015	2015/07/26	4	12:55:27	12:57:44	07:42:00	18:01:00	07:16:00	18:28:00	00:02:17	10:19:00	11:12:00	0.37	0.34	###################	####################
CFDS/C-2	W-2015	2015/07/26	5	14:44:44	15:02:55	07:42:00	18:01:00	07:16:00	18:28:00	00:18:11	10:19:00	11:12:00	2.94	2.71	###################	####################
CFDS/C-2	W-2015	2015/07/26	6	15:19:31	15:36:16	07:42:00	18:01:00	07:16:00	18:28:00	00:16:45	10:19:00	11:12:00	2.71	2.49	###################	####################
CFDS/C-2	W-2015	2015/07/26	7	15:53:00	15:54:10	07:42:00	18:01:00	07:16:00	18:28:00	00:01:10	10:19:00	11:12:00	0.19	0.17	###################	####################
CFDS/C-2	W-2015	2015/07/26	8	16:41:39	17:03:13	07:42:00	18:01:00	07:16:00	18:28:00	00:21:34	10:19:00	11:12:00	3.48	3.21	###################	####################
CFDS/C-2	W-2015	2015/07/26	9	17:20:38	17:25:32	07:42:00	18:01:00	07:16:00	18:28:00	00:04:54	10:19:00	11:12:00	0.79	0.73	###################	####################
CFDS/C-2	W-2015	2015/07/26	10	17:47:38	17:53:17	07:42:00	18:01:00	07:16:00	18:28:00	00:05:39	10:19:00	11:12:00	0.91	0.84	###################	####################
CFDS/C-2	W-2015	2015/07/27	1	08:21:14	08:21:16	07:42:00	18:02:00	07:15:00	18:28:00	00:00:02	10:20:00	11:13:00	0.01	0.00	###################	####################
CFDS/C-2	W-2015	2015/07/27	2	08:56:00	08:58:20	07:42:00	18:02:00	07:15:00	18:28:00	00:02:20	10:20:00	11:13:00	0.38	0.35	###################	####################
CFDS/C-2	W-2015	2015/07/27	3	10:11:51	10:14:07	07:42:00	18:02:00	07:15:00	18:28:00	00:02:16	10:20:00	11:13:00	0.37	0.34	###################	####################

CFDS/C-2	W-2015	2015/07/27	4	12:07:34	12:14:05	07:42:00	18:02:00	07:15:00	18:28:00	00:06:31	10:20:00	11:13:00	1.05	0.97	###################	####################
CFDS/C-2	W-2015	2015/07/27	5	12:47:24	13:04:14	07:42:00	18:02:00	07:15:00	18:28:00	00:16:50	10:20:00	11:13:00	2.72	2.50	###################	####################
CFDS/C-2	W-2015	2015/07/27	6	13:16:51	13:34:58	07:42:00	18:02:00	07:15:00	18:28:00	00:18:07	10:20:00	11:13:00	2.92	2.69	###################	####################
CFDS/C-2	W-2015	2015/07/27	7	16:03:04	16:34:10	07:42:00	18:02:00	07:15:00	18:28:00	00:31:06	10:20:00	11:13:00	5.02	4.62	###################	####################
CFDS/C-2	W-2015	2015/07/27	8	16:45:12	16:46:32	07:42:00	18:02:00	07:15:00	18:28:00	00:01:20	10:20:00	11:13:00	0.22	0.20	###################	####################
CFDS/C-2	W-2015	2015/07/27	9	17:11:11	17:11:13	07:42:00	18:02:00	07:15:00	18:28:00	00:00:02	10:20:00	11:13:00	0.01	0.00	###################	####################
CFDS/C-2	W-2015	2015/07/27	10	17:25:53	17:34:15	07:42:00	18:02:00	07:15:00	18:28:00	00:08:22	10:20:00	11:13:00	1.35	1.24	###################	####################
CFDS/C-2	W-2015	2015/07/28	1	08:09:02	08:09:04	07:41:00	18:02:00	07:14:00	18:29:00	00:00:02	10:21:00	11:15:00	0.01	0.00	###################	####################
CFDS/C-2	W-2015	2015/07/28	2	08:55:35	08:55:37	07:41:00	18:02:00	07:14:00	18:29:00	00:00:02	10:21:00	11:15:00	0.01	0.00	###################	####################
CFDS/C-2	W-2015	2015/07/28	3	13:30:47	13:33:46	07:41:00	18:02:00	07:14:00	18:29:00	00:02:59	10:21:00	11:15:00	0.48	0.44	###################	####################
CFDS/C-2	W-2015	2015/07/28	4	14:27:03	14:27:05	07:41:00	18:02:00	07:14:00	18:29:00	00:00:02	10:21:00	11:15:00	0.01	0.00	###################	####################
CFDS/C-2	W-2015	2015/07/28	5	16:59:46	17:22:21	07:41:00	18:02:00	07:14:00	18:29:00	00:22:35	10:21:00	11:15:00	3.64	3.35	###################	####################
CFDS/C-2	W-2015	2015/07/28	6	17:36:54	17:49:28	07:41:00	18:02:00	07:14:00	18:29:00	00:12:34	10:21:00	11:15:00	2.02	1.86	###################	####################
CFDS/C-2	W-2015	2015/07/28	7	19:35:32	19:35:33	07:41:00	18:02:00	07:14:00	18:29:00	00:00:01	10:21:00	11:15:00	0	0.00	###################	01:06:33
CFDS/C-2	W-2015	2015/07/29	1	10:02:01	10:02:02	07:40:00	18:03:00	07:14:00	18:30:00	00:00:01	10:23:00	11:16:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/07/29	2	12:50:02	12:50:04	07:40:00	18:03:00	07:14:00	18:30:00	00:00:02	10:23:00	11:16:00	0.01	0.00	###################	####################
CFDS/C-2	W-2015	2015/07/29	3	13:44:07	13:44:08	07:40:00	18:03:00	07:14:00	18:30:00	00:00:01	10:23:00	11:16:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/07/29	4	16:32:37	16:38:24	07:40:00	18:03:00	07:14:00	18:30:00	00:05:47	10:23:00	11:16:00	0.93	0.86	###################	####################
CFDS/C-2	W-2015	2015/07/29	5	17:38:24	17:53:14	07:40:00	18:03:00	07:14:00	18:30:00	00:14:50	10:23:00	11:16:00	2.38	2.19	###################	####################
CFDS/C-2	W-2015	2015/07/29	6	18:07:24	18:12:35	07:40:00	18:03:00	07:14:00	18:30:00	00:05:11	10:23:00	11:16:00	0.83	0.77	###################	####################
CFDS/C-2	W-2015	2015/07/30	1	09:39:30	09:39:33	07:40:00	18:04:00	07:13:00	18:30:00	00:00:03	10:24:00	11:17:00	0.01	0.01	###################	####################
CFDS/C-2	W-2015	2015/07/30	2	10:50:31	10:50:32	07:40:00	18:04:00	07:13:00	18:30:00	00:00:01	10:24:00	11:17:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/07/30	3	13:25:22	13:25:23	07:40:00	18:04:00	07:13:00	18:30:00	00:00:01	10:24:00	11:17:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/07/30	4	14:11:19	14:11:20	07:40:00	18:04:00	07:13:00	18:30:00	00:00:01	10:24:00	11:17:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/07/30	5	14:42:51	14:53:12	07:40:00	18:04:00	07:13:00	18:30:00	00:10:21	10:24:00	11:17:00	1.66	1.53	###################	####################
CFDS/C-2	W-2015	2015/07/30	6	17:25:37	17:25:38	07:40:00	18:04:00	07:13:00	18:30:00	00:00:01	10:24:00	11:17:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/07/31	1	17:42:00	17:42:02	07:39:00	18:05:00	07:12:00	18:31:00	00:00:02	10:26:00	11:19:00	0.01	0.00	###################	####################
CFDS/C-2	W-2015	2015/08/01	1	11:04:21	11:08:22	07:38:00	18:05:00	07:12:00	18:32:00	00:04:01	10:27:00	11:20:00	0.64	0.59	###################	####################
CFDS/C-2	W-2015	2015/08/01	2	13:22:56	13:27:52	07:38:00	18:05:00	07:12:00	18:32:00	00:04:56	10:27:00	11:20:00	0.79	0.73	###################	####################
CFDS/C-2	W-2015	2015/08/01	3	15:02:00	15:02:01	07:38:00	18:05:00	07:12:00	18:32:00	00:00:01	10:27:00	11:20:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/08/01	4	17:21:53	17:21:54	07:38:00	18:05:00	07:12:00	18:32:00	00:00:01	10:27:00	11:20:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/08/01	5	17:33:09	17:33:11	07:38:00	18:05:00	07:12:00	18:32:00	00:00:02	10:27:00	11:20:00	0.01	0.00	###################	####################
CFDS/C-2	W-2015	2015/08/02	1	11:30:38	11:44:12	07:37:00	18:06:00	07:11:00	18:32:00	00:13:34	10:29:00	11:21:00	2.16	1.99	###################	####################
CFDS/C-2	W-2015	2015/08/02	2	12:11:04	12:13:52	07:37:00	18:06:00	07:11:00	18:32:00	00:02:48	10:29:00	11:21:00	0.45	0.41	###################	####################
CFDS/C-2	W-2015	2015/08/02	3	13:15:44	13:17:24	07:37:00	18:06:00	07:11:00	18:32:00	00:01:40	10:29:00	11:21:00	0.26	0.25	###################	####################
CFDS/C-2	W-2015	2015/08/02	4	13:36:00	13:38:24	07:37:00	18:06:00	07:11:00	18:32:00	00:02:24	10:29:00	11:21:00	0.38	0.35	###################	####################
CFDS/C-2	W-2015	2015/08/02	5	13:50:31	14:00:09	07:37:00	18:06:00	07:11:00	18:32:00	00:09:38	10:29:00	11:21:00	1.53	1.41	###################	####################
CFDS/C-2	W-2015	2015/08/02	6	15:10:01	15:21:39	07:37:00	18:06:00	07:11:00	18:32:00	00:11:38	10:29:00	11:21:00	1.85	1.71	###################	####################
CFDS/C-2	W-2015	2015/08/02	7	15:33:34	15:33:36	07:37:00	18:06:00	07:11:00	18:32:00	00:00:02	10:29:00	11:21:00	0.01	0.00	###################	####################
CFDS/C-2	W-2015	2015/08/02	8	15:49:37	16:05:33	07:37:00	18:06:00	07:11:00	18:32:00	00:15:56	10:29:00	11:21:00	2.53	2.34	###################	####################
CFDS/C-2	W-2015	2015/08/02	9	16:50:56	16:50:57	07:37:00	18:06:00	07:11:00	18:32:00	00:00:01	10:29:00	11:21:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/08/02	10	17:12:59	17:13:00	07:37:00	18:06:00	07:11:00	18:32:00	00:00:01	10:29:00	11:21:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/08/02	11	17:27:42	17:27:44	07:37:00	18:06:00	07:11:00	18:32:00	00:00:02	10:29:00	11:21:00	0.01	0.00	###################	####################
CFDS/C-2	W-2015	2015/08/02	12	18:06:07	18:12:40	07:37:00	18:06:00	07:11:00	18:32:00	00:06:33	10:29:00	11:21:00	1.04	0.96	###################	####################
CFDS/C-2	W-2015	2015/08/03	1	10:32:38	10:40:15	07:36:00	18:07:00	07:10:00	18:33:00	00:07:37	10:31:00	11:23:00	1.21	1.12	###################	####################
CFDS/C-2	W-2015	2015/08/03	2	15:34:18	15:34:20	07:36:00	18:07:00	07:10:00	18:33:00	00:00:02	10:31:00	11:23:00	0.01	0.00	###################	####################
CFDS/C-2	W-2015	2015/08/03	3	17:11:39	17:11:41	07:36:00	18:07:00	07:10:00	18:33:00	00:00:02	10:31:00	11:23:00	0.01	0.00	###################	####################
CFDS/C-2	W-2015	2015/08/04	1	09:19:17	09:19:19	07:35:00	18:07:00	07:09:00	18:34:00	00:00:02	10:32:00	11:25:00	0.01	0.00	###################	####################
CFDS/C-2	W-2015	2015/08/04	2	10:40:31	10:40:33	07:35:00	18:07:00	07:09:00	18:34:00	00:00:02	10:32:00	11:25:00	0.01	0.00	###################	####################
CFDS/C-2	W-2015	2015/08/04	3	12:05:35	12:11:03	07:35:00	18:07:00	07:09:00	18:34:00	00:05:28	10:32:00	11:25:00	0.86	0.80	###################	####################
CFDS/C-2	W-2015	2015/08/04	4	15:03:38	15:03:40	07:35:00	18:07:00	07:09:00	18:34:00	00:00:02	10:32:00	11:25:00	0.01	0.00	###################	####################
CFDS/C-2	W-2015	2015/08/04	5	16:49:08	16:49:09	07:35:00	18:07:00	07:09:00	18:34:00	00:00:01	10:32:00	11:25:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/08/04	6	18:09:21	18:11:15	07:35:00	18:07:00	07:09:00	18:34:00	00:01:54	10:32:00	11:25:00	0.3	0.28	###################	####################
CFDS/C-2	W-2015	2015/08/05	1	08:09:56	08:10:00	07:35:00	18:08:00	07:08:00	18:34:00	00:00:04	10:33:00	11:26:00	0.01	0.01	###################	####################
CFDS/C-2	W-2015	2015/08/05	2	08:23:32	08:23:33	07:35:00	18:08:00	07:08:00	18:34:00	00:00:01	10:33:00	11:26:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/08/05	3	08:47:41	08:54:35	07:35:00	18:08:00	07:08:00	18:34:00	00:06:54	10:33:00	11:26:00	1.09	1.01	###################	####################
CFDS/C-2	W-2015	2015/08/05	4	10:25:47	10:33:40	07:35:00	18:08:00	07:08:00	18:34:00	00:07:53	10:33:00	11:26:00	1.25	1.15	###################	####################
CFDS/C-2	W-2015	2015/08/05	5	10:43:57	10:43:59	07:35:00	18:08:00	07:08:00	18:34:00	00:00:02	10:33:00	11:26:00	0.01	0.00	###################	####################
CFDS/C-2	W-2015	2015/08/05	6	11:44:11	11:44:13	07:35:00	18:08:00	07:08:00	18:34:00	00:00:02	10:33:00	11:26:00	0.01	0.00	###################	####################
CFDS/C-2	W-2015	2015/08/05	7	12:05:23	12:12:50	07:35:00	18:08:00	07:08:00	18:34:00	00:07:27	10:33:00	11:26:00	1.18	1.09	###################	####################
CFDS/C-2	W-2015	2015/08/05	8	13:58:35	13:58:36	07:35:00	18:08:00	07:08:00	18:34:00	00:00:01	10:33:00	11:26:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/08/05	9	14:44:25	14:44:27	07:35:00	18:08:00	07:08:00	18:34:00	00:00:02	10:33:00	11:26:00	0.01	0.00	###################	####################
CFDS/C-2	W-2015	2015/08/05	10	15:31:28	15:31:29	07:35:00	18:08:00	07:08:00	18:34:00	00:00:01	10:33:00	11:26:00	0	0.00	###################	####################

CFDS/C-2	W-2015	2015/08/05	11	17:10:22	17:10:24	07:35:00	18:08:00	07:08:00	18:34:00	00:00:02	10:33:00	11:26:00	0.01	0.00	###################	####################
CFDS/C-2	W-2015	2015/08/05	12	17:23:38	17:23:39	07:35:00	18:08:00	07:08:00	18:34:00	00:00:01	10:33:00	11:26:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/08/06	1	09:03:45	09:03:47	07:34:00	18:09:00	07:07:00	18:35:00	00:00:02	10:35:00	11:28:00	0.01	0.00	###################	####################
CFDS/C-2	W-2015	2015/08/06	2	10:19:14	10:19:16	07:34:00	18:09:00	07:07:00	18:35:00	00:00:02	10:35:00	11:28:00	0.01	0.00	###################	####################
CFDS/C-2	W-2015	2015/08/06	3	10:32:11	10:32:12	07:34:00	18:09:00	07:07:00	18:35:00	00:00:01	10:35:00	11:28:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/08/06	4	11:12:04	11:24:00	07:34:00	18:09:00	07:07:00	18:35:00	00:11:56	10:35:00	11:28:00	1.88	1.73	###################	####################
CFDS/C-2	W-2015	2015/08/06	5	13:01:00	13:01:02	07:34:00	18:09:00	07:07:00	18:35:00	00:00:02	10:35:00	11:28:00	0.01	0.00	###################	####################
CFDS/C-2	W-2015	2015/08/06	6	14:11:31	14:11:33	07:34:00	18:09:00	07:07:00	18:35:00	00:00:02	10:35:00	11:28:00	0.01	0.00	###################	####################
CFDS/C-2	W-2015	2015/08/07	1	10:01:43	10:06:21	07:33:00	18:09:00	07:07:00	18:36:00	00:04:38	10:36:00	11:29:00	0.73	0.67	###################	####################
CFDS/C-2	W-2015	2015/08/07	2	12:27:59	12:35:00	07:33:00	18:09:00	07:07:00	18:36:00	00:07:01	10:36:00	11:29:00	1.1	1.02	###################	####################
CFDS/C-2	W-2015	2015/08/07	3	12:54:38	12:57:27	07:33:00	18:09:00	07:07:00	18:36:00	00:02:49	10:36:00	11:29:00	0.44	0.41	###################	####################
CFDS/C-2	W-2015	2015/08/07	4	13:19:35	13:21:54	07:33:00	18:09:00	07:07:00	18:36:00	00:02:19	10:36:00	11:29:00	0.36	0.34	###################	####################
CFDS/C-2	W-2015	2015/08/07	5	13:47:23	13:47:25	07:33:00	18:09:00	07:07:00	18:36:00	00:00:02	10:36:00	11:29:00	0.01	0.00	###################	####################
CFDS/C-2	W-2015	2015/08/07	6	14:06:26	14:07:35	07:33:00	18:09:00	07:07:00	18:36:00	00:01:09	10:36:00	11:29:00	0.18	0.17	###################	####################
CFDS/C-2	W-2015	2015/08/07	7	15:53:50	15:56:22	07:33:00	18:09:00	07:07:00	18:36:00	00:02:32	10:36:00	11:29:00	0.4	0.37	###################	####################
CFDS/C-2	W-2015	2015/08/07	8	16:16:06	16:16:07	07:33:00	18:09:00	07:07:00	18:36:00	00:00:01	10:36:00	11:29:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/08/08	1	10:28:16	10:38:43	07:32:00	18:10:00	07:06:00	18:36:00	00:10:27	10:38:00	11:30:00	1.64	1.51	###################	####################
CFDS/C-2	W-2015	2015/08/08	2	11:13:24	11:15:40	07:32:00	18:10:00	07:06:00	18:36:00	00:02:16	10:38:00	11:30:00	0.36	0.33	###################	####################
CFDS/C-2	W-2015	2015/08/08	3	13:19:39	13:28:05	07:32:00	18:10:00	07:06:00	18:36:00	00:08:26	10:38:00	11:30:00	1.32	1.22	###################	####################
CFDS/C-2	W-2015	2015/08/08	4	13:44:40	13:46:28	07:32:00	18:10:00	07:06:00	18:36:00	00:01:48	10:38:00	11:30:00	0.28	0.26	###################	####################
CFDS/C-2	W-2015	2015/08/08	5	14:05:06	14:05:07	07:32:00	18:10:00	07:06:00	18:36:00	00:00:01	10:38:00	11:30:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/08/08	6	15:28:41	16:46:45	07:32:00	18:10:00	07:06:00	18:36:00	01:18:04	10:38:00	11:30:00	12.24	11.31	###################	####################
CFDS/C-2	W-2015	2015/08/08	7	17:49:42	17:56:32	07:32:00	18:10:00	07:06:00	18:36:00	00:06:50	10:38:00	11:30:00	1.07	0.99	###################	####################
CFDS/C-2	W-2015	2015/08/09	1	10:49:01	10:56:56	07:31:00	18:11:00	07:05:00	18:37:00	00:07:55	10:40:00	11:32:00	1.24	1.14	###################	####################
CFDS/C-2	W-2015	2015/08/09	2	11:17:32	11:24:18	07:31:00	18:11:00	07:05:00	18:37:00	00:06:46	10:40:00	11:32:00	1.06	0.98	###################	####################
CFDS/C-2	W-2015	2015/08/09	3	11:40:25	11:44:54	07:31:00	18:11:00	07:05:00	18:37:00	00:04:29	10:40:00	11:32:00	0.7	0.65	###################	####################
CFDS/C-2	W-2015	2015/08/09	4	12:01:07	12:10:07	07:31:00	18:11:00	07:05:00	18:37:00	00:09:00	10:40:00	11:32:00	1.41	1.30	###################	####################
CFDS/C-2	W-2015	2015/08/09	5	12:49:07	13:00:38	07:31:00	18:11:00	07:05:00	18:37:00	00:11:31	10:40:00	11:32:00	1.8	1.66	###################	####################
CFDS/C-2	W-2015	2015/08/09	6	13:24:14	13:37:45	07:31:00	18:11:00	07:05:00	18:37:00	00:13:31	10:40:00	11:32:00	2.11	1.95	###################	####################
CFDS/C-2	W-2015	2015/08/09	7	14:18:45	14:22:10	07:31:00	18:11:00	07:05:00	18:37:00	00:03:25	10:40:00	11:32:00	0.53	0.49	###################	####################
CFDS/C-2	W-2015	2015/08/09	8	16:00:23	16:12:10	07:31:00	18:11:00	07:05:00	18:37:00	00:11:47	10:40:00	11:32:00	1.84	1.70	###################	####################
CFDS/C-2	W-2015	2015/08/09	9	16:23:36	16:45:34	07:31:00	18:11:00	07:05:00	18:37:00	00:21:58	10:40:00	11:32:00	3.43	3.17	###################	####################
CFDS/C-2	W-2015	2015/08/09	10	17:05:44	17:14:47	07:31:00	18:11:00	07:05:00	18:37:00	00:09:03	10:40:00	11:32:00	1.41	1.31	###################	####################
CFDS/C-2	W-2015	2015/08/10	1	09:31:32	09:31:33	07:30:00	18:12:00	07:04:00	18:38:00	00:00:01	10:42:00	11:34:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/08/10	2	09:40:36	10:03:00	07:30:00	18:12:00	07:04:00	18:38:00	00:22:24	10:42:00	11:34:00	3.49	3.23	###################	####################
CFDS/C-2	W-2015	2015/08/10	3	11:25:36	11:31:14	07:30:00	18:12:00	07:04:00	18:38:00	00:05:38	10:42:00	11:34:00	0.88	0.81	###################	####################
CFDS/C-2	W-2015	2015/08/10	4	12:06:31	12:24:48	07:30:00	18:12:00	07:04:00	18:38:00	00:18:17	10:42:00	11:34:00	2.85	2.63	###################	####################
CFDS/C-2	W-2015	2015/08/10	5	13:04:41	13:09:23	07:30:00	18:12:00	07:04:00	18:38:00	00:04:42	10:42:00	11:34:00	0.73	0.68	###################	####################
CFDS/C-2	W-2015	2015/08/10	6	14:18:21	14:26:21	07:30:00	18:12:00	07:04:00	18:38:00	00:08:00	10:42:00	11:34:00	1.25	1.15	###################	####################
CFDS/C-2	W-2015	2015/08/10	7	14:49:32	15:17:02	07:30:00	18:12:00	07:04:00	18:38:00	00:27:30	10:42:00	11:34:00	4.28	3.96	###################	####################
CFDS/C-2	W-2015	2015/08/10	8	16:14:43	16:14:45	07:30:00	18:12:00	07:04:00	18:38:00	00:00:02	10:42:00	11:34:00	0.01	0.00	###################	####################
CFDS/C-2	W-2015	2015/08/10	9	16:28:44	16:39:32	07:30:00	18:12:00	07:04:00	18:38:00	00:10:48	10:42:00	11:34:00	1.68	1.56	###################	####################
CFDS/C-2	W-2015	2015/08/10	10	16:54:24	17:05:51	07:30:00	18:12:00	07:04:00	18:38:00	00:11:27	10:42:00	11:34:00	1.78	1.65	###################	####################
CFDS/C-2	W-2015	2015/08/11	1	08:49:36	09:04:21	07:29:00	18:12:00	07:03:00	18:38:00	00:14:45	10:43:00	11:35:00	2.29	2.12	###################	####################
CFDS/C-2	W-2015	2015/08/11	2	09:20:57	09:22:06	07:29:00	18:12:00	07:03:00	18:38:00	00:01:09	10:43:00	11:35:00	0.18	0.17	###################	####################
CFDS/C-2	W-2015	2015/08/11	3	13:44:24	13:56:46	07:29:00	18:12:00	07:03:00	18:38:00	00:12:22	10:43:00	11:35:00	1.92	1.78	###################	####################
CFDS/C-2	W-2015	2015/08/11	4	14:12:14	14:17:53	07:29:00	18:12:00	07:03:00	18:38:00	00:05:39	10:43:00	11:35:00	0.88	0.81	###################	####################
CFDS/C-2	W-2015	2015/08/11	5	14:30:13	14:32:29	07:29:00	18:12:00	07:03:00	18:38:00	00:02:16	10:43:00	11:35:00	0.35	0.33	###################	####################
CFDS/C-2	W-2015	2015/08/11	6	15:40:36	16:00:03	07:29:00	18:12:00	07:03:00	18:38:00	00:19:27	10:43:00	11:35:00	3.02	2.80	###################	####################
CFDS/C-2	W-2015	2015/08/11	7	16:56:34	18:11:38	07:29:00	18:12:00	07:03:00	18:38:00	01:15:04	10:43:00	11:35:00	11.67	10.80	###################	####################
CFDS/C-2	W-2015	2015/08/12	1	07:44:44	08:00:00	07:28:00	18:13:00	07:02:00	18:39:00	00:15:16	10:45:00	11:37:00	2.37	2.19	###################	####################
CFDS/C-2	W-2015	2015/08/12	2	08:17:40	08:23:20	07:28:00	18:13:00	07:02:00	18:39:00	00:05:40	10:45:00	11:37:00	0.88	0.81	###################	####################
CFDS/C-2	W-2015	2015/08/12	3	08:37:40	08:43:38	07:28:00	18:13:00	07:02:00	18:39:00	00:05:58	10:45:00	11:37:00	0.93	0.86	###################	####################
CFDS/C-2	W-2015	2015/08/12	4	09:44:15	09:55:43	07:28:00	18:13:00	07:02:00	18:39:00	00:11:28	10:45:00	11:37:00	1.78	1.65	###################	####################
CFDS/C-2	W-2015	2015/08/12	5	10:37:50	11:04:21	07:28:00	18:13:00	07:02:00	18:39:00	00:26:31	10:45:00	11:37:00	4.11	3.80	###################	####################
CFDS/C-2	W-2015	2015/08/12	6	13:03:36	13:12:35	07:28:00	18:13:00	07:02:00	18:39:00	00:08:59	10:45:00	11:37:00	1.39	1.29	###################	####################
CFDS/C-2	W-2015	2015/08/12	7	13:30:22	13:38:13	07:28:00	18:13:00	07:02:00	18:39:00	00:07:51	10:45:00	11:37:00	1.22	1.13	###################	####################
CFDS/C-2	W-2015	2015/08/12	8	13:51:49	14:22:41	07:28:00	18:13:00	07:02:00	18:39:00	00:30:52	10:45:00	11:37:00	4.79	4.43	###################	####################
CFDS/C-2	W-2015	2015/08/12	9	15:01:03	15:49:09	07:28:00	18:13:00	07:02:00	18:39:00	00:48:06	10:45:00	11:37:00	7.46	6.90	###################	####################
CFDS/C-2	W-2015	2015/08/12	10	16:08:14	16:34:32	07:28:00	18:13:00	07:02:00	18:39:00	00:26:18	10:45:00	11:37:00	4.08	3.77	###################	####################
CFDS/C-2	W-2015	2015/08/12	11	16:52:54	17:01:55	07:28:00	18:13:00	07:02:00	18:39:00	00:09:01	10:45:00	11:37:00	1.4	1.29	###################	####################
CFDS/C-2	W-2015	2015/08/12	12	17:13:42	17:27:17	07:28:00	18:13:00	07:02:00	18:39:00	00:13:35	10:45:00	11:37:00	2.11	1.95	###################	####################
CFDS/C-2	W-2015	2015/08/12	13	17:42:04	17:51:11	07:28:00	18:13:00	07:02:00	18:39:00	00:09:07	10:45:00	11:37:00	1.41	1.31	###################	####################

CFDS/C-2	W-2015	2015/08/13	1	07:53:34	07:55:51	07:27:00	18:14:00	07:01:00	18:40:00	00:02:17	10:47:00	11:39:00	0.35	0.33	###################	####################
CFDS/C-2	W-2015	2015/08/13	2	08:01:47	08:06:21	07:27:00	18:14:00	07:01:00	18:40:00	00:04:34	10:47:00	11:39:00	0.71	0.65	###################	####################
CFDS/C-2	W-2015	2015/08/13	3	09:48:04	10:10:30	07:27:00	18:14:00	07:01:00	18:40:00	00:22:26	10:47:00	11:39:00	3.47	3.21	###################	####################
CFDS/C-2	W-2015	2015/08/13	4	11:40:37	11:51:02	07:27:00	18:14:00	07:01:00	18:40:00	00:10:25	10:47:00	11:39:00	1.61	1.49	###################	####################
CFDS/C-2	W-2015	2015/08/13	5	12:21:52	12:35:38	07:27:00	18:14:00	07:01:00	18:40:00	00:13:46	10:47:00	11:39:00	2.13	1.97	###################	####################
CFDS/C-2	W-2015	2015/08/13	6	12:59:07	13:08:27	07:27:00	18:14:00	07:01:00	18:40:00	00:09:20	10:47:00	11:39:00	1.44	1.33	###################	####################
CFDS/C-2	W-2015	2015/08/13	7	13:58:01	14:03:45	07:27:00	18:14:00	07:01:00	18:40:00	00:05:44	10:47:00	11:39:00	0.89	0.82	###################	####################
CFDS/C-2	W-2015	2015/08/13	8	14:43:00	15:07:19	07:27:00	18:14:00	07:01:00	18:40:00	00:24:19	10:47:00	11:39:00	3.76	3.48	###################	####################
CFDS/C-2	W-2015	2015/08/13	9	15:55:57	16:00:22	07:27:00	18:14:00	07:01:00	18:40:00	00:04:25	10:47:00	11:39:00	0.68	0.63	###################	####################
CFDS/C-2	W-2015	2015/08/13	10	16:42:15	16:52:02	07:27:00	18:14:00	07:01:00	18:40:00	00:09:47	10:47:00	11:39:00	1.51	1.40	###################	####################
CFDS/C-2	W-2015	2015/08/13	11	17:20:09	17:21:43	07:27:00	18:14:00	07:01:00	18:40:00	00:01:34	10:47:00	11:39:00	0.24	0.22	###################	####################
CFDS/C-2	W-2015	2015/08/13	12	17:37:13	17:37:15	07:27:00	18:14:00	07:01:00	18:40:00	00:00:02	10:47:00	11:39:00	0.01	0.00	###################	####################
CFDS/C-2	W-2015	2015/08/14	1	07:28:20	07:29:29	07:26:00	18:14:00	07:00:00	18:40:00	00:01:09	10:48:00	11:40:00	0.18	0.16	###################	####################
CFDS/C-2	W-2015	2015/08/14	2	07:53:24	08:02:28	07:26:00	18:14:00	07:00:00	18:40:00	00:09:04	10:48:00	11:40:00	1.4	1.30	###################	####################
CFDS/C-2	W-2015	2015/08/14	3	09:17:15	09:25:20	07:26:00	18:14:00	07:00:00	18:40:00	00:08:05	10:48:00	11:40:00	1.25	1.15	###################	####################
CFDS/C-2	W-2015	2015/08/14	4	09:46:02	09:51:55	07:26:00	18:14:00	07:00:00	18:40:00	00:05:53	10:48:00	11:40:00	0.91	0.84	###################	####################
CFDS/C-2	W-2015	2015/08/14	5	10:05:08	10:11:29	07:26:00	18:14:00	07:00:00	18:40:00	00:06:21	10:48:00	11:40:00	0.98	0.91	###################	####################
CFDS/C-2	W-2015	2015/08/14	6	10:44:50	11:11:28	07:26:00	18:14:00	07:00:00	18:40:00	00:26:38	10:48:00	11:40:00	4.11	3.80	###################	####################
CFDS/C-2	W-2015	2015/08/14	7	12:04:52	12:11:48	07:26:00	18:14:00	07:00:00	18:40:00	00:06:56	10:48:00	11:40:00	1.07	0.99	###################	####################
CFDS/C-2	W-2015	2015/08/14	8	12:50:25	13:00:18	07:26:00	18:14:00	07:00:00	18:40:00	00:09:53	10:48:00	11:40:00	1.53	1.41	###################	####################
CFDS/C-2	W-2015	2015/08/14	9	13:12:51	13:32:59	07:26:00	18:14:00	07:00:00	18:40:00	00:20:08	10:48:00	11:40:00	3.11	2.88	###################	####################
CFDS/C-2	W-2015	2015/08/14	10	13:43:36	14:09:47	07:26:00	18:14:00	07:00:00	18:40:00	00:26:11	10:48:00	11:40:00	4.04	3.74	###################	####################
CFDS/C-2	W-2015	2015/08/14	11	14:28:21	14:32:58	07:26:00	18:14:00	07:00:00	18:40:00	00:04:37	10:48:00	11:40:00	0.71	0.66	###################	####################
CFDS/C-2	W-2015	2015/08/14	12	14:55:39	15:04:26	07:26:00	18:14:00	07:00:00	18:40:00	00:08:47	10:48:00	11:40:00	1.36	1.25	###################	####################
CFDS/C-2	W-2015	2015/08/14	13	15:18:55	15:37:20	07:26:00	18:14:00	07:00:00	18:40:00	00:18:25	10:48:00	11:40:00	2.84	2.63	###################	####################
CFDS/C-2	W-2015	2015/08/14	14	15:54:01	16:03:38	07:26:00	18:14:00	07:00:00	18:40:00	00:09:37	10:48:00	11:40:00	1.48	1.37	###################	####################
CFDS/C-2	W-2015	2015/08/14	15	16:45:50	16:45:51	07:26:00	18:14:00	07:00:00	18:40:00	00:00:01	10:48:00	11:40:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/08/14	16	17:00:41	17:33:16	07:26:00	18:14:00	07:00:00	18:40:00	00:32:35	10:48:00	11:40:00	5.03	4.65	###################	####################
CFDS/C-2	W-2015	2015/08/14	17	17:46:09	17:54:38	07:26:00	18:14:00	07:00:00	18:40:00	00:08:29	10:48:00	11:40:00	1.31	1.21	###################	####################
CFDS/C-2	W-2015	2015/08/14	18	18:05:17	18:08:33	07:26:00	18:14:00	07:00:00	18:40:00	00:03:16	10:48:00	11:40:00	0.5	0.47	###################	####################
CFDS/C-2	W-2015	2015/08/15	1	07:24:03	08:07:26	07:25:00	18:15:00	06:59:00	18:41:00	00:43:23	10:50:00	11:42:00	6.67	6.18	###################	####################
CFDS/C-2	W-2015	2015/08/15	2	10:49:33	11:00:12	07:25:00	18:15:00	06:59:00	18:41:00	00:10:39	10:50:00	11:42:00	1.64	1.52	###################	####################
CFDS/C-2	W-2015	2015/08/15	3	11:17:37	11:52:45	07:25:00	18:15:00	06:59:00	18:41:00	00:35:08	10:50:00	11:42:00	5.41	5.00	###################	####################
CFDS/C-2	W-2015	2015/08/15	4	12:15:43	12:31:14	07:25:00	18:15:00	06:59:00	18:41:00	00:15:31	10:50:00	11:42:00	2.39	2.21	###################	####################
CFDS/C-2	W-2015	2015/08/15	5	12:52:34	13:22:45	07:25:00	18:15:00	06:59:00	18:41:00	00:30:11	10:50:00	11:42:00	4.64	4.30	###################	####################
CFDS/C-2	W-2015	2015/08/15	6	13:34:34	14:00:52	07:25:00	18:15:00	06:59:00	18:41:00	00:26:18	10:50:00	11:42:00	4.05	3.75	###################	####################
CFDS/C-2	W-2015	2015/08/15	7	14:18:52	14:32:51	07:25:00	18:15:00	06:59:00	18:41:00	00:13:59	10:50:00	11:42:00	2.15	1.99	###################	####################
CFDS/C-2	W-2015	2015/08/15	8	14:49:30	15:05:27	07:25:00	18:15:00	06:59:00	18:41:00	00:15:57	10:50:00	11:42:00	2.45	2.27	###################	####################
CFDS/C-2	W-2015	2015/08/15	9	15:16:17	15:17:33	07:25:00	18:15:00	06:59:00	18:41:00	00:01:16	10:50:00	11:42:00	0.19	0.18	###################	####################
CFDS/C-2	W-2015	2015/08/15	10	15:32:48	15:35:06	07:25:00	18:15:00	06:59:00	18:41:00	00:02:18	10:50:00	11:42:00	0.35	0.33	###################	####################
CFDS/C-2	W-2015	2015/08/15	11	16:01:55	16:04:59	07:25:00	18:15:00	06:59:00	18:41:00	00:03:04	10:50:00	11:42:00	0.47	0.44	###################	####################
CFDS/C-2	W-2015	2015/08/15	12	16:23:39	17:40:00	07:25:00	18:15:00	06:59:00	18:41:00	01:16:21	10:50:00	11:42:00	11.75	10.88	###################	####################
CFDS/C-2	W-2015	2015/08/15	13	17:55:27	18:00:06	07:25:00	18:15:00	06:59:00	18:41:00	00:04:39	10:50:00	11:42:00	0.72	0.66	###################	####################
CFDS/C-2	W-2015	2015/08/16	1	08:23:56	08:27:28	07:24:00	18:16:00	06:58:00	18:42:00	00:03:32	10:52:00	11:44:00	0.54	0.50	###################	####################
CFDS/C-2	W-2015	2015/08/16	2	10:02:59	10:37:42	07:24:00	18:16:00	06:58:00	18:42:00	00:34:43	10:52:00	11:44:00	5.32	4.93	###################	####################
CFDS/C-2	W-2015	2015/08/16	3	11:24:51	11:42:13	07:24:00	18:16:00	06:58:00	18:42:00	00:17:22	10:52:00	11:44:00	2.66	2.47	###################	####################
CFDS/C-2	W-2015	2015/08/16	4	12:29:34	12:33:23	07:24:00	18:16:00	06:58:00	18:42:00	00:03:49	10:52:00	11:44:00	0.59	0.54	###################	####################
CFDS/C-2	W-2015	2015/08/16	5	13:43:20	13:45:54	07:24:00	18:16:00	06:58:00	18:42:00	00:02:34	10:52:00	11:44:00	0.39	0.37	###################	####################
CFDS/C-2	W-2015	2015/08/16	6	15:13:02	15:30:24	07:24:00	18:16:00	06:58:00	18:42:00	00:17:22	10:52:00	11:44:00	2.66	2.47	###################	####################
CFDS/C-2	W-2015	2015/08/16	7	16:16:13	16:39:24	07:24:00	18:16:00	06:58:00	18:42:00	00:23:11	10:52:00	11:44:00	3.56	3.29	###################	####################
CFDS/C-2	W-2015	2015/08/16	8	16:53:18	16:53:19	07:24:00	18:16:00	06:58:00	18:42:00	00:00:01	10:52:00	11:44:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/08/16	9	17:15:24	18:01:13	07:24:00	18:16:00	06:58:00	18:42:00	00:45:49	10:52:00	11:44:00	7.03	6.51	###################	####################
CFDS/C-2	W-2015	2015/08/17	1	10:04:39	10:09:47	07:22:00	18:17:00	06:57:00	18:42:00	00:05:08	10:55:00	11:45:00	0.78	0.73	###################	####################
CFDS/C-2	W-2015	2015/08/17	2	12:15:36	12:16:45	07:22:00	18:17:00	06:57:00	18:42:00	00:01:09	10:55:00	11:45:00	0.18	0.16	###################	####################
CFDS/C-2	W-2015	2015/08/17	3	12:30:28	12:44:03	07:22:00	18:17:00	06:57:00	18:42:00	00:13:35	10:55:00	11:45:00	2.07	1.93	###################	####################
CFDS/C-2	W-2015	2015/08/17	4	12:54:04	13:01:59	07:22:00	18:17:00	06:57:00	18:42:00	00:07:55	10:55:00	11:45:00	1.21	1.12	###################	####################
CFDS/C-2	W-2015	2015/08/17	5	13:59:43	14:00:51	07:22:00	18:17:00	06:57:00	18:42:00	00:01:08	10:55:00	11:45:00	0.17	0.16	###################	####################
CFDS/C-2	W-2015	2015/08/17	6	15:08:27	15:15:53	07:22:00	18:17:00	06:57:00	18:42:00	00:07:26	10:55:00	11:45:00	1.13	1.05	###################	####################
CFDS/C-2	W-2015	2015/08/17	7	15:30:44	16:14:56	07:22:00	18:17:00	06:57:00	18:42:00	00:44:12	10:55:00	11:45:00	6.75	6.27	###################	####################
CFDS/C-2	W-2015	2015/08/17	8	16:27:49	16:32:37	07:22:00	18:17:00	06:57:00	18:42:00	00:04:48	10:55:00	11:45:00	0.73	0.68	###################	####################
CFDS/C-2	W-2015	2015/08/17	9	17:21:24	17:22:47	07:22:00	18:17:00	06:57:00	18:42:00	00:01:23	10:55:00	11:45:00	0.21	0.20	###################	####################
CFDS/C-2	W-2015	2015/08/17	10	17:32:51	18:47:05	07:22:00	18:17:00	06:57:00	18:42:00	01:14:14	10:55:00	11:45:00	11.33	10.53	###################	00:05:05
CFDS/C-2	W-2015	2015/08/18	1	07:31:31	08:07:52	07:21:00	18:17:00	06:56:00	18:43:00	00:36:21	10:56:00	11:47:00	5.54	5.14	###################	####################

CFDS/C-2	W-2015	2015/08/18	2	08:18:21	08:54:13	07:21:00	18:17:00	06:56:00	18:43:00	00:35:52	10:56:00	11:47:00	5.47	5.07	###################	####################
CFDS/C-2	W-2015	2015/08/18	3	09:37:02	09:46:05	07:21:00	18:17:00	06:56:00	18:43:00	00:09:03	10:56:00	11:47:00	1.38	1.28	###################	####################
CFDS/C-2	W-2015	2015/08/18	4	10:13:10	10:14:53	07:21:00	18:17:00	06:56:00	18:43:00	00:01:43	10:56:00	11:47:00	0.26	0.24	###################	####################
CFDS/C-2	W-2015	2015/08/18	5	10:25:48	10:31:26	07:21:00	18:17:00	06:56:00	18:43:00	00:05:38	10:56:00	11:47:00	0.86	0.80	###################	####################
CFDS/C-2	W-2015	2015/08/18	6	11:19:04	11:49:19	07:21:00	18:17:00	06:56:00	18:43:00	00:30:15	10:56:00	11:47:00	4.61	4.28	###################	####################
CFDS/C-2	W-2015	2015/08/18	7	12:33:38	12:48:48	07:21:00	18:17:00	06:56:00	18:43:00	00:15:10	10:56:00	11:47:00	2.31	2.15	###################	####################
CFDS/C-2	W-2015	2015/08/18	8	13:04:10	13:09:49	07:21:00	18:17:00	06:56:00	18:43:00	00:05:39	10:56:00	11:47:00	0.86	0.80	###################	####################
CFDS/C-2	W-2015	2015/08/18	9	13:22:44	13:35:41	07:21:00	18:17:00	06:56:00	18:43:00	00:12:57	10:56:00	11:47:00	1.97	1.83	###################	####################
CFDS/C-2	W-2015	2015/08/18	10	14:15:26	14:43:11	07:21:00	18:17:00	06:56:00	18:43:00	00:27:45	10:56:00	11:47:00	4.23	3.93	###################	####################
CFDS/C-2	W-2015	2015/08/18	11	14:59:07	15:15:33	07:21:00	18:17:00	06:56:00	18:43:00	00:16:26	10:56:00	11:47:00	2.51	2.32	###################	####################
CFDS/C-2	W-2015	2015/08/18	12	15:35:42	15:59:19	07:21:00	18:17:00	06:56:00	18:43:00	00:23:37	10:56:00	11:47:00	3.6	3.34	###################	####################
CFDS/C-2	W-2015	2015/08/18	13	16:11:53	16:52:28	07:21:00	18:17:00	06:56:00	18:43:00	00:40:35	10:56:00	11:47:00	6.19	5.74	###################	####################
CFDS/C-2	W-2015	2015/08/18	14	17:44:05	18:10:29	07:21:00	18:17:00	06:56:00	18:43:00	00:26:24	10:56:00	11:47:00	4.02	3.73	###################	####################
CFDS/C-2	W-2015	2015/08/19	1	08:58:45	09:04:36	07:20:00	18:18:00	06:55:00	18:44:00	00:05:51	10:58:00	11:49:00	0.89	0.83	###################	####################
CFDS/C-2	W-2015	2015/08/19	2	09:37:15	09:51:22	07:20:00	18:18:00	06:55:00	18:44:00	00:14:07	10:58:00	11:49:00	2.15	1.99	###################	####################
CFDS/C-2	W-2015	2015/08/19	3	11:26:12	11:32:24	07:20:00	18:18:00	06:55:00	18:44:00	00:06:12	10:58:00	11:49:00	0.94	0.87	###################	####################
CFDS/C-2	W-2015	2015/08/19	4	11:48:13	12:04:17	07:20:00	18:18:00	06:55:00	18:44:00	00:16:04	10:58:00	11:49:00	2.44	2.27	###################	####################
CFDS/C-2	W-2015	2015/08/19	5	13:21:37	13:26:11	07:20:00	18:18:00	06:55:00	18:44:00	00:04:34	10:58:00	11:49:00	0.69	0.64	###################	####################
CFDS/C-2	W-2015	2015/08/19	6	14:12:43	14:18:33	07:20:00	18:18:00	06:55:00	18:44:00	00:05:50	10:58:00	11:49:00	0.89	0.82	###################	####################
CFDS/C-2	W-2015	2015/08/19	7	16:20:49	16:33:23	07:20:00	18:18:00	06:55:00	18:44:00	00:12:34	10:58:00	11:49:00	1.91	1.77	###################	####################
CFDS/C-2	W-2015	2015/08/19	8	16:56:37	17:18:11	07:20:00	18:18:00	06:55:00	18:44:00	00:21:34	10:58:00	11:49:00	3.28	3.04	###################	####################
CFDS/C-2	W-2015	2015/08/19	9	17:30:11	17:44:55	07:20:00	18:18:00	06:55:00	18:44:00	00:14:44	10:58:00	11:49:00	2.24	2.08	###################	####################
CFDS/C-2	W-2015	2015/08/19	10	18:27:11	18:51:30	07:20:00	18:18:00	06:55:00	18:44:00	00:24:19	10:58:00	11:49:00	3.7	3.43	###################	00:07:30
CFDS/C-2	W-2015	2015/08/20	1	09:06:21	09:06:22	07:19:00	18:19:00	06:53:00	18:44:00	00:00:01	11:00:00	11:51:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/08/20	2	10:15:19	10:25:45	07:19:00	18:19:00	06:53:00	18:44:00	00:10:26	11:00:00	11:51:00	1.58	1.47	###################	####################
CFDS/C-2	W-2015	2015/08/20	3	10:46:02	11:05:28	07:19:00	18:19:00	06:53:00	18:44:00	00:19:26	11:00:00	11:51:00	2.94	2.73	###################	####################
CFDS/C-2	W-2015	2015/08/20	4	11:30:34	12:09:09	07:19:00	18:19:00	06:53:00	18:44:00	00:38:35	11:00:00	11:51:00	5.85	5.43	###################	####################
CFDS/C-2	W-2015	2015/08/20	5	12:34:20	12:45:26	07:19:00	18:19:00	06:53:00	18:44:00	00:11:06	11:00:00	11:51:00	1.68	1.56	###################	####################
CFDS/C-2	W-2015	2015/08/20	6	13:06:32	13:11:08	07:19:00	18:19:00	06:53:00	18:44:00	00:04:36	11:00:00	11:51:00	0.7	0.65	###################	####################
CFDS/C-2	W-2015	2015/08/20	7	17:29:36	17:44:19	07:19:00	18:19:00	06:53:00	18:44:00	00:14:43	11:00:00	11:51:00	2.23	2.07	###################	####################
CFDS/C-2	W-2015	2015/08/21	1	09:14:12	09:28:46	07:18:00	18:19:00	06:50:00	18:45:00	00:14:34	11:01:00	11:55:00	2.2	2.04	###################	####################
CFDS/C-2	W-2015	2015/08/21	2	09:44:17	09:46:33	07:18:00	18:19:00	06:50:00	18:45:00	00:02:16	11:01:00	11:55:00	0.34	0.32	###################	####################
CFDS/C-2	W-2015	2015/08/21	3	10:33:22	10:36:53	07:18:00	18:19:00	06:50:00	18:45:00	00:03:31	11:01:00	11:55:00	0.53	0.49	###################	####################
CFDS/C-2	W-2015	2015/08/21	4	10:47:14	11:00:33	07:18:00	18:19:00	06:50:00	18:45:00	00:13:19	11:01:00	11:55:00	2.01	1.86	###################	####################
CFDS/C-2	W-2015	2015/08/21	5	13:14:13	13:21:11	07:18:00	18:19:00	06:50:00	18:45:00	00:06:58	11:01:00	11:55:00	1.05	0.97	###################	####################
CFDS/C-2	W-2015	2015/08/21	6	14:24:12	14:36:37	07:18:00	18:19:00	06:50:00	18:45:00	00:12:25	11:01:00	11:55:00	1.88	1.74	###################	####################
CFDS/C-2	W-2015	2015/08/21	7	16:49:40	16:53:20	07:18:00	18:19:00	06:50:00	18:45:00	00:03:40	11:01:00	11:55:00	0.55	0.51	###################	####################
CFDS/C-2	W-2015	2015/08/21	8	17:15:45	17:22:02	07:18:00	18:19:00	06:50:00	18:45:00	00:06:17	11:01:00	11:55:00	0.95	0.88	###################	####################
CFDS/C-2	W-2015	2015/08/21	9	17:35:36	18:04:46	07:18:00	18:19:00	06:50:00	18:45:00	00:29:10	11:01:00	11:55:00	4.41	4.08	###################	####################
CFDS/C-2	W-2015	2015/08/22	1	09:46:13	09:53:06	07:17:00	18:20:00	06:51:00	18:45:00	00:06:53	11:03:00	11:54:00	1.04	0.96	###################	####################
CFDS/C-2	W-2015	2015/08/22	2	10:15:33	10:17:51	07:17:00	18:20:00	06:51:00	18:45:00	00:02:18	11:03:00	11:54:00	0.35	0.32	###################	####################
CFDS/C-2	W-2015	2015/08/22	3	11:19:49	11:22:06	07:17:00	18:20:00	06:51:00	18:45:00	00:02:17	11:03:00	11:54:00	0.34	0.32	###################	####################
CFDS/C-2	W-2015	2015/08/22	4	12:07:13	12:14:34	07:17:00	18:20:00	06:51:00	18:45:00	00:07:21	11:03:00	11:54:00	1.11	1.03	###################	####################
CFDS/C-2	W-2015	2015/08/22	5	13:57:42	14:10:35	07:17:00	18:20:00	06:51:00	18:45:00	00:12:53	11:03:00	11:54:00	1.94	1.80	###################	####################
CFDS/C-2	W-2015	2015/08/22	6	14:38:28	14:48:13	07:17:00	18:20:00	06:51:00	18:45:00	00:09:45	11:03:00	11:54:00	1.47	1.37	###################	####################
CFDS/C-2	W-2015	2015/08/22	7	15:39:20	15:40:37	07:17:00	18:20:00	06:51:00	18:45:00	00:01:17	11:03:00	11:54:00	0.19	0.18	###################	####################
CFDS/C-2	W-2015	2015/08/22	8	16:38:02	16:41:02	07:17:00	18:20:00	06:51:00	18:45:00	00:03:00	11:03:00	11:54:00	0.45	0.42	###################	####################
CFDS/C-2	W-2015	2015/08/22	9	17:14:22	17:33:17	07:17:00	18:20:00	06:51:00	18:45:00	00:18:55	11:03:00	11:54:00	2.85	2.65	###################	####################
CFDS/C-2	W-2015	2015/08/22	10	17:49:52	18:10:08	07:17:00	18:20:00	06:51:00	18:45:00	00:20:16	11:03:00	11:54:00	3.06	2.84	###################	####################
CFDS/C-2	W-2015	2015/08/23	1	08:37:34	08:38:43	07:15:00	18:21:00	06:50:00	18:46:00	00:01:09	11:06:00	11:56:00	0.17	0.16	###################	####################
CFDS/C-2	W-2015	2015/08/23	2	09:58:06	10:10:15	07:15:00	18:21:00	06:50:00	18:46:00	00:12:09	11:06:00	11:56:00	1.82	1.70	###################	####################
CFDS/C-2	W-2015	2015/08/23	3	10:40:06	10:42:47	07:15:00	18:21:00	06:50:00	18:46:00	00:02:41	11:06:00	11:56:00	0.4	0.37	###################	####################
CFDS/C-2	W-2015	2015/08/23	4	11:20:22	11:22:53	07:15:00	18:21:00	06:50:00	18:46:00	00:02:31	11:06:00	11:56:00	0.38	0.35	###################	####################
CFDS/C-2	W-2015	2015/08/23	5	12:04:10	12:27:43	07:15:00	18:21:00	06:50:00	18:46:00	00:23:33	11:06:00	11:56:00	3.54	3.29	###################	####################
CFDS/C-2	W-2015	2015/08/23	6	14:21:27	14:57:06	07:15:00	18:21:00	06:50:00	18:46:00	00:35:39	11:06:00	11:56:00	5.35	4.98	###################	####################
CFDS/C-2	W-2015	2015/08/23	7	15:07:24	15:28:47	07:15:00	18:21:00	06:50:00	18:46:00	00:21:23	11:06:00	11:56:00	3.21	2.99	###################	####################
CFDS/C-2	W-2015	2015/08/23	8	16:40:28	16:42:48	07:15:00	18:21:00	06:50:00	18:46:00	00:02:20	11:06:00	11:56:00	0.35	0.33	###################	####################
CFDS/C-2	W-2015	2015/08/23	9	16:59:16	17:13:04	07:15:00	18:21:00	06:50:00	18:46:00	00:13:48	11:06:00	11:56:00	2.07	1.93	###################	####################
CFDS/C-2	W-2015	2015/08/24	1	09:53:48	10:31:13	07:14:00	18:21:00	06:49:00	18:47:00	00:37:25	11:07:00	11:58:00	5.61	5.21	###################	####################
CFDS/C-2	W-2015	2015/08/24	2	10:41:30	10:47:46	07:14:00	18:21:00	06:49:00	18:47:00	00:06:16	11:07:00	11:58:00	0.94	0.87	###################	####################
CFDS/C-2	W-2015	2015/08/24	3	12:10:38	12:16:55	07:14:00	18:21:00	06:49:00	18:47:00	00:06:17	11:07:00	11:58:00	0.94	0.87	###################	####################
CFDS/C-2	W-2015	2015/08/24	4	12:32:28	12:36:09	07:14:00	18:21:00	06:49:00	18:47:00	00:03:41	11:07:00	11:58:00	0.55	0.51	###################	####################
CFDS/C-2	W-2015	2015/08/24	5	14:06:48	14:57:17	07:14:00	18:21:00	06:49:00	18:47:00	00:50:29	11:07:00	11:58:00	7.57	7.03	###################	####################

CFDS/C-2	W-2015	2015/08/24	6	15:38:14	16:16:53	07:14:00	18:21:00	06:49:00	18:47:00	00:38:39	11:07:00	11:58:00	5.79	5.38	###################	####################
CFDS/C-2	W-2015	2015/08/24	7	16:25:27	17:07:35	07:14:00	18:21:00	06:49:00	18:47:00	00:42:08	11:07:00	11:58:00	6.32	5.87	###################	####################
CFDS/C-2	W-2015	2015/08/24	8	17:23:15	17:51:17	07:14:00	18:21:00	06:49:00	18:47:00	00:28:02	11:07:00	11:58:00	4.2	3.90	###################	####################
CFDS/C-2	W-2015	2015/08/25	1	07:45:36	07:51:52	07:13:00	18:22:00	06:48:00	18:47:00	00:06:16	11:09:00	11:59:00	0.94	0.87	###################	####################
CFDS/C-2	W-2015	2015/08/25	2	10:19:15	10:32:04	07:13:00	18:22:00	06:48:00	18:47:00	00:12:49	11:09:00	11:59:00	1.92	1.78	###################	####################
CFDS/C-2	W-2015	2015/08/25	3	11:09:21	11:33:04	07:13:00	18:22:00	06:48:00	18:47:00	00:23:43	11:09:00	11:59:00	3.55	3.30	###################	####################
CFDS/C-2	W-2015	2015/08/25	4	12:08:25	12:11:35	07:13:00	18:22:00	06:48:00	18:47:00	00:03:10	11:09:00	11:59:00	0.47	0.44	###################	####################
CFDS/C-2	W-2015	2015/08/25	5	13:18:36	13:35:29	07:13:00	18:22:00	06:48:00	18:47:00	00:16:53	11:09:00	11:59:00	2.52	2.35	###################	####################
CFDS/C-2	W-2015	2015/08/25	6	14:17:05	14:19:23	07:13:00	18:22:00	06:48:00	18:47:00	00:02:18	11:09:00	11:59:00	0.34	0.32	###################	####################
CFDS/C-2	W-2015	2015/08/25	7	14:36:09	14:49:00	07:13:00	18:22:00	06:48:00	18:47:00	00:12:51	11:09:00	11:59:00	1.92	1.79	###################	####################
CFDS/C-2	W-2015	2015/08/25	8	15:36:36	15:39:15	07:13:00	18:22:00	06:48:00	18:47:00	00:02:39	11:09:00	11:59:00	0.4	0.37	###################	####################
CFDS/C-2	W-2015	2015/08/25	9	15:59:00	15:59:01	07:13:00	18:22:00	06:48:00	18:47:00	00:00:01	11:09:00	11:59:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/08/25	10	16:52:22	16:54:47	07:13:00	18:22:00	06:48:00	18:47:00	00:02:25	11:09:00	11:59:00	0.36	0.34	###################	####################
CFDS/C-2	W-2015	2015/08/25	11	17:40:00	18:10:08	07:13:00	18:22:00	06:48:00	18:47:00	00:30:08	11:09:00	11:59:00	4.5	4.19	###################	####################
CFDS/C-2	W-2015	2015/08/25	12	18:22:01	18:33:27	07:13:00	18:22:00	06:48:00	18:47:00	00:11:26	11:09:00	11:59:00	1.71	1.59	###################	####################
CFDS/C-2	W-2015	2015/08/26	1	10:12:37	10:37:42	07:12:00	18:23:00	06:46:00	18:48:00	00:25:05	11:11:00	12:02:00	3.74	3.47	###################	####################
CFDS/C-2	W-2015	2015/08/26	2	11:02:44	11:13:10	07:12:00	18:23:00	06:46:00	18:48:00	00:10:26	11:11:00	12:02:00	1.55	1.44	###################	####################
CFDS/C-2	W-2015	2015/08/26	3	11:26:00	11:29:49	07:12:00	18:23:00	06:46:00	18:48:00	00:03:49	11:11:00	12:02:00	0.57	0.53	###################	####################
CFDS/C-2	W-2015	2015/08/26	4	14:16:58	14:19:33	07:12:00	18:23:00	06:46:00	18:48:00	00:02:35	11:11:00	12:02:00	0.38	0.36	###################	####################
CFDS/C-2	W-2015	2015/08/26	5	14:30:16	14:31:25	07:12:00	18:23:00	06:46:00	18:48:00	00:01:09	11:11:00	12:02:00	0.17	0.16	###################	####################
CFDS/C-2	W-2015	2015/08/26	6	15:15:10	15:21:04	07:12:00	18:23:00	06:46:00	18:48:00	00:05:54	11:11:00	12:02:00	0.88	0.82	###################	####################
CFDS/C-2	W-2015	2015/08/26	7	15:53:55	15:58:30	07:12:00	18:23:00	06:46:00	18:48:00	00:04:35	11:11:00	12:02:00	0.68	0.63	###################	####################
CFDS/C-2	W-2015	2015/08/26	8	16:14:04	16:17:55	07:12:00	18:23:00	06:46:00	18:48:00	00:03:51	11:11:00	12:02:00	0.57	0.53	###################	####################
CFDS/C-2	W-2015	2015/08/26	9	16:30:29	16:30:30	07:12:00	18:23:00	06:46:00	18:48:00	00:00:01	11:11:00	12:02:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/08/26	10	16:43:42	17:17:15	07:12:00	18:23:00	06:46:00	18:48:00	00:33:33	11:11:00	12:02:00	5	4.65	###################	####################
CFDS/C-2	W-2015	2015/08/26	11	17:31:42	17:35:43	07:12:00	18:23:00	06:46:00	18:48:00	00:04:01	11:11:00	12:02:00	0.6	0.56	###################	####################
CFDS/C-2	W-2015	2015/08/26	12	17:48:05	17:51:51	07:12:00	18:23:00	06:46:00	18:48:00	00:03:46	11:11:00	12:02:00	0.56	0.52	###################	####################
CFDS/C-2	W-2015	2015/08/26	13	18:11:58	18:29:30	07:12:00	18:23:00	06:46:00	18:48:00	00:17:32	11:11:00	12:02:00	2.61	2.43	###################	####################
CFDS/C-2	W-2015	2015/08/27	1	11:49:03	12:04:38	07:10:00	18:23:00	06:45:00	18:49:00	00:15:35	11:13:00	12:04:00	2.32	2.15	###################	####################
CFDS/C-2	W-2015	2015/08/27	2	12:15:23	12:20:54	07:10:00	18:23:00	06:45:00	18:49:00	00:05:31	11:13:00	12:04:00	0.82	0.76	###################	####################
CFDS/C-2	W-2015	2015/08/27	3	13:51:27	13:54:54	07:10:00	18:23:00	06:45:00	18:49:00	00:03:27	11:13:00	12:04:00	0.51	0.48	###################	####################
CFDS/C-2	W-2015	2015/08/27	4	15:29:42	15:35:22	07:10:00	18:23:00	06:45:00	18:49:00	00:05:40	11:13:00	12:04:00	0.84	0.78	###################	####################
CFDS/C-2	W-2015	2015/08/27	5	15:45:00	16:27:25	07:10:00	18:23:00	06:45:00	18:49:00	00:42:25	11:13:00	12:04:00	6.3	5.86	###################	####################
CFDS/C-2	W-2015	2015/08/27	6	16:57:49	17:41:48	07:10:00	18:23:00	06:45:00	18:49:00	00:43:59	11:13:00	12:04:00	6.54	6.07	###################	####################
CFDS/C-2	W-2015	2015/08/27	7	18:04:05	18:10:21	07:10:00	18:23:00	06:45:00	18:49:00	00:06:16	11:13:00	12:04:00	0.93	0.87	###################	####################
CFDS/C-2	W-2015	2015/08/28	1	07:47:29	08:23:25	07:09:00	18:24:00	06:44:00	18:49:00	00:35:56	11:15:00	12:05:00	5.32	4.96	###################	####################
CFDS/C-2	W-2015	2015/08/28	2	09:18:37	10:11:03	07:09:00	18:24:00	06:44:00	18:49:00	00:52:26	11:15:00	12:05:00	7.77	7.23	###################	####################
CFDS/C-2	W-2015	2015/08/28	3	12:42:02	12:49:48	07:09:00	18:24:00	06:44:00	18:49:00	00:07:46	11:15:00	12:05:00	1.15	1.07	###################	####################
CFDS/C-2	W-2015	2015/08/28	4	13:09:03	13:14:09	07:09:00	18:24:00	06:44:00	18:49:00	00:05:06	11:15:00	12:05:00	0.76	0.70	###################	####################
CFDS/C-2	W-2015	2015/08/28	5	14:12:02	14:14:10	07:09:00	18:24:00	06:44:00	18:49:00	00:02:08	11:15:00	12:05:00	0.32	0.29	###################	####################
CFDS/C-2	W-2015	2015/08/28	6	14:51:53	14:51:54	07:09:00	18:24:00	06:44:00	18:49:00	00:00:01	11:15:00	12:05:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/08/28	7	15:32:25	15:55:41	07:09:00	18:24:00	06:44:00	18:49:00	00:23:16	11:15:00	12:05:00	3.45	3.21	###################	####################
CFDS/C-2	W-2015	2015/08/28	8	18:09:56	18:13:27	07:09:00	18:24:00	06:44:00	18:49:00	00:03:31	11:15:00	12:05:00	0.52	0.49	###################	####################
CFDS/C-2	W-2015	2015/08/29	1	08:57:01	08:57:03	07:08:00	18:25:00	06:43:00	18:50:00	00:00:02	11:17:00	12:07:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/08/29	2	09:44:21	10:03:44	07:08:00	18:25:00	06:43:00	18:50:00	00:19:23	11:17:00	12:07:00	2.86	2.67	###################	####################
CFDS/C-2	W-2015	2015/08/29	3	10:26:29	10:28:52	07:08:00	18:25:00	06:43:00	18:50:00	00:02:23	11:17:00	12:07:00	0.35	0.33	###################	####################
CFDS/C-2	W-2015	2015/08/29	4	12:15:12	12:22:41	07:08:00	18:25:00	06:43:00	18:50:00	00:07:29	11:17:00	12:07:00	1.11	1.03	###################	####################
CFDS/C-2	W-2015	2015/08/29	5	12:41:00	12:58:24	07:08:00	18:25:00	06:43:00	18:50:00	00:17:24	11:17:00	12:07:00	2.57	2.39	###################	####################
CFDS/C-2	W-2015	2015/08/29	6	13:41:39	13:44:10	07:08:00	18:25:00	06:43:00	18:50:00	00:02:31	11:17:00	12:07:00	0.37	0.35	###################	####################
CFDS/C-2	W-2015	2015/08/29	7	14:11:25	14:13:57	07:08:00	18:25:00	06:43:00	18:50:00	00:02:32	11:17:00	12:07:00	0.37	0.35	###################	####################
CFDS/C-2	W-2015	2015/08/29	8	14:49:34	15:04:38	07:08:00	18:25:00	06:43:00	18:50:00	00:15:04	11:17:00	12:07:00	2.23	2.07	###################	####################
CFDS/C-2	W-2015	2015/08/29	9	15:48:41	15:54:22	07:08:00	18:25:00	06:43:00	18:50:00	00:05:41	11:17:00	12:07:00	0.84	0.78	###################	####################
CFDS/C-2	W-2015	2015/08/29	10	16:17:34	16:26:01	07:08:00	18:25:00	06:43:00	18:50:00	00:08:27	11:17:00	12:07:00	1.25	1.16	###################	####################
CFDS/C-2	W-2015	2015/08/29	11	16:50:20	17:14:53	07:08:00	18:25:00	06:43:00	18:50:00	00:24:33	11:17:00	12:07:00	3.63	3.38	###################	####################
CFDS/C-2	W-2015	2015/08/29	12	17:26:05	17:33:14	07:08:00	18:25:00	06:43:00	18:50:00	00:07:09	11:17:00	12:07:00	1.06	0.98	###################	####################
CFDS/C-2	W-2015	2015/08/29	13	18:01:03	18:01:55	07:08:00	18:25:00	06:43:00	18:50:00	00:00:52	11:17:00	12:07:00	0.13	0.12	###################	####################
CFDS/C-2	W-2015	2015/08/30	1	07:46:48	08:20:00	07:07:00	18:26:00	06:41:00	18:51:00	00:33:12	11:19:00	12:10:00	4.89	4.55	###################	####################
CFDS/C-2	W-2015	2015/08/30	2	10:13:35	10:19:23	07:07:00	18:26:00	06:41:00	18:51:00	00:05:48	11:19:00	12:10:00	0.85	0.79	###################	####################
CFDS/C-2	W-2015	2015/08/30	3	11:09:14	11:17:54	07:07:00	18:26:00	06:41:00	18:51:00	00:08:40	11:19:00	12:10:00	1.28	1.19	###################	####################
CFDS/C-2	W-2015	2015/08/30	4	15:53:02	15:55:25	07:07:00	18:26:00	06:41:00	18:51:00	00:02:23	11:19:00	12:10:00	0.35	0.33	###################	####################
CFDS/C-2	W-2015	2015/08/30	5	16:18:40	16:22:09	07:07:00	18:26:00	06:41:00	18:51:00	00:03:29	11:19:00	12:10:00	0.51	0.48	###################	####################
CFDS/C-2	W-2015	2015/08/30	6	17:45:34	17:50:20	07:07:00	18:26:00	06:41:00	18:51:00	00:04:46	11:19:00	12:10:00	0.7	0.65	###################	####################
CFDS/C-2	W-2015	2015/08/31	1	07:27:36	07:27:38	07:05:00	18:26:00	06:40:00	18:51:00	00:00:02	11:21:00	12:11:00	0	0.00	###################	####################

CFDS/C-2	W-2015	2015/08/31	2	10:04:49	10:11:24	07:05:00	18:26:00	06:40:00	18:51:00	00:06:35	11:21:00	12:11:00	0.97	0.90	###################	####################
CFDS/C-2	W-2015	2015/08/31	3	12:42:56	12:49:21	07:05:00	18:26:00	06:40:00	18:51:00	00:06:25	11:21:00	12:11:00	0.94	0.88	###################	####################
CFDS/C-2	W-2015	2015/08/31	4	13:36:53	13:45:33	07:05:00	18:26:00	06:40:00	18:51:00	00:08:40	11:21:00	12:11:00	1.27	1.19	###################	####################
CFDS/C-2	W-2015	2015/08/31	5	15:17:32	15:33:25	07:05:00	18:26:00	06:40:00	18:51:00	00:15:53	11:21:00	12:11:00	2.33	2.17	###################	####################
CFDS/C-2	W-2015	2015/08/31	6	15:52:22	16:14:13	07:05:00	18:26:00	06:40:00	18:51:00	00:21:51	11:21:00	12:11:00	3.21	2.99	###################	####################
CFDS/C-2	W-2015	2015/08/31	7	16:34:14	16:37:43	07:05:00	18:26:00	06:40:00	18:51:00	00:03:29	11:21:00	12:11:00	0.51	0.48	###################	####################
CFDS/C-2	W-2015	2015/08/31	8	17:10:33	17:43:44	07:05:00	18:26:00	06:40:00	18:51:00	00:33:11	11:21:00	12:11:00	4.87	4.54	###################	####################
CFDS/C-2	W-2015	2015/08/31	9	18:20:42	18:27:47	07:05:00	18:26:00	06:40:00	18:51:00	00:07:05	11:21:00	12:11:00	1.04	0.97	###################	####################
CFDS/C-2	W-2015	2015/09/01	1	08:21:03	08:21:05	07:04:00	18:27:00	06:39:00	18:52:00	00:00:02	11:23:00	12:13:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/09/01	2	10:22:43	10:22:45	07:04:00	18:27:00	06:39:00	18:52:00	00:00:02	11:23:00	12:13:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/09/01	3	11:34:20	11:34:22	07:04:00	18:27:00	06:39:00	18:52:00	00:00:02	11:23:00	12:13:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/09/01	4	13:32:11	13:33:35	07:04:00	18:27:00	06:39:00	18:52:00	00:01:24	11:23:00	12:13:00	0.2	0.19	###################	####################
CFDS/C-2	W-2015	2015/09/01	5	13:57:00	13:59:16	07:04:00	18:27:00	06:39:00	18:52:00	00:02:16	11:23:00	12:13:00	0.33	0.31	###################	####################
CFDS/C-2	W-2015	2015/09/01	6	14:56:04	14:58:28	07:04:00	18:27:00	06:39:00	18:52:00	00:02:24	11:23:00	12:13:00	0.35	0.33	###################	####################
CFDS/C-2	W-2015	2015/09/01	7	15:58:56	15:58:57	07:04:00	18:27:00	06:39:00	18:52:00	00:00:01	11:23:00	12:13:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/09/01	8	16:12:24	16:18:48	07:04:00	18:27:00	06:39:00	18:52:00	00:06:24	11:23:00	12:13:00	0.94	0.87	###################	####################
CFDS/C-2	W-2015	2015/09/01	9	17:52:37	17:57:30	07:04:00	18:27:00	06:39:00	18:52:00	00:04:53	11:23:00	12:13:00	0.71	0.67	###################	####################
CFDS/C-2	W-2015	2015/09/01	10	18:07:29	18:11:34	07:04:00	18:27:00	06:39:00	18:52:00	00:04:05	11:23:00	12:13:00	0.6	0.56	###################	####################
CFDS/C-2	W-2015	2015/09/02	1	07:36:11	07:41:48	07:03:00	18:28:00	06:38:00	18:53:00	00:05:37	11:25:00	12:15:00	0.82	0.76	###################	####################
CFDS/C-2	W-2015	2015/09/02	2	09:33:04	09:35:21	07:03:00	18:28:00	06:38:00	18:53:00	00:02:17	11:25:00	12:15:00	0.33	0.31	###################	####################
CFDS/C-2	W-2015	2015/09/02	3	10:06:37	10:08:58	07:03:00	18:28:00	06:38:00	18:53:00	00:02:21	11:25:00	12:15:00	0.34	0.32	###################	####################
CFDS/C-2	W-2015	2015/09/02	4	10:36:00	10:38:46	07:03:00	18:28:00	06:38:00	18:53:00	00:02:46	11:25:00	12:15:00	0.4	0.38	###################	####################
CFDS/C-2	W-2015	2015/09/02	5	12:04:21	12:04:22	07:03:00	18:28:00	06:38:00	18:53:00	00:00:01	11:25:00	12:15:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/09/02	6	13:02:57	13:02:58	07:03:00	18:28:00	06:38:00	18:53:00	00:00:01	11:25:00	12:15:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/09/02	7	15:22:48	15:26:22	07:03:00	18:28:00	06:38:00	18:53:00	00:03:34	11:25:00	12:15:00	0.52	0.49	###################	####################
CFDS/C-2	W-2015	2015/09/02	8	15:58:01	16:12:41	07:03:00	18:28:00	06:38:00	18:53:00	00:14:40	11:25:00	12:15:00	2.14	2.00	###################	####################
CFDS/C-2	W-2015	2015/09/02	9	17:03:08	17:10:15	07:03:00	18:28:00	06:38:00	18:53:00	00:07:07	11:25:00	12:15:00	1.04	0.97	###################	####################
CFDS/C-2	W-2015	2015/09/02	10	17:39:17	17:52:02	07:03:00	18:28:00	06:38:00	18:53:00	00:12:45	11:25:00	12:15:00	1.86	1.73	###################	####################
CFDS/C-2	W-2015	2015/09/03	1	13:11:02	13:11:04	07:01:00	18:28:00	06:36:00	18:53:00	00:00:02	11:27:00	12:17:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/09/03	2	13:23:30	13:23:31	07:01:00	18:28:00	06:36:00	18:53:00	00:00:01	11:27:00	12:17:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/09/03	3	14:23:10	14:23:12	07:01:00	18:28:00	06:36:00	18:53:00	00:00:02	11:27:00	12:17:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/09/03	4	14:39:34	14:39:35	07:01:00	18:28:00	06:36:00	18:53:00	00:00:01	11:27:00	12:17:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/09/04	1	08:30:01	08:31:10	07:00:00	18:29:00	06:35:00	18:54:00	00:01:09	11:29:00	12:19:00	0.17	0.16	###################	####################
CFDS/C-2	W-2015	2015/09/04	2	09:29:02	09:44:47	07:00:00	18:29:00	06:35:00	18:54:00	00:15:45	11:29:00	12:19:00	2.29	2.13	###################	####################
CFDS/C-2	W-2015	2015/09/04	3	10:03:43	10:03:44	07:00:00	18:29:00	06:35:00	18:54:00	00:00:01	11:29:00	12:19:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/09/04	4	11:06:23	11:07:31	07:00:00	18:29:00	06:35:00	18:54:00	00:01:08	11:29:00	12:19:00	0.16	0.15	###################	####################
CFDS/C-2	W-2015	2015/09/04	5	12:15:46	12:20:22	07:00:00	18:29:00	06:35:00	18:54:00	00:04:36	11:29:00	12:19:00	0.67	0.62	###################	####################
CFDS/C-2	W-2015	2015/09/04	6	13:46:01	13:46:03	07:00:00	18:29:00	06:35:00	18:54:00	00:00:02	11:29:00	12:19:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/09/04	7	14:06:23	14:23:43	07:00:00	18:29:00	06:35:00	18:54:00	00:17:20	11:29:00	12:19:00	2.52	2.35	###################	####################
CFDS/C-2	W-2015	2015/09/04	8	15:35:18	15:40:54	07:00:00	18:29:00	06:35:00	18:54:00	00:05:36	11:29:00	12:19:00	0.81	0.76	###################	####################
CFDS/C-2	W-2015	2015/09/04	9	16:26:22	16:26:24	07:00:00	18:29:00	06:35:00	18:54:00	00:00:02	11:29:00	12:19:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/09/04	10	18:03:33	18:13:53	07:00:00	18:29:00	06:35:00	18:54:00	00:10:20	11:29:00	12:19:00	1.5	1.40	###################	####################
CFDS/C-2	W-2015	2015/09/05	1	07:16:25	07:20:56	06:59:00	18:30:00	06:34:00	18:55:00	00:04:31	11:31:00	12:21:00	0.65	0.61	###################	####################
CFDS/C-2	W-2015	2015/09/05	2	10:04:09	10:17:15	06:59:00	18:30:00	06:34:00	18:55:00	00:13:06	11:31:00	12:21:00	1.9	1.77	###################	####################
CFDS/C-2	W-2015	2015/09/05	3	12:40:48	12:40:50	06:59:00	18:30:00	06:34:00	18:55:00	00:00:02	11:31:00	12:21:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/09/05	4	13:52:50	14:02:03	06:59:00	18:30:00	06:34:00	18:55:00	00:09:13	11:31:00	12:21:00	1.33	1.24	###################	####################
CFDS/C-2	W-2015	2015/09/05	5	16:35:23	16:40:25	06:59:00	18:30:00	06:34:00	18:55:00	00:05:02	11:31:00	12:21:00	0.73	0.68	###################	####################
CFDS/C-2	W-2015	2015/09/06	1	11:00:14	11:01:23	06:57:00	18:30:00	06:32:00	18:55:00	00:01:09	11:33:00	12:23:00	0.17	0.15	###################	####################
CFDS/C-2	W-2015	2015/09/06	2	11:35:39	11:39:30	06:57:00	18:30:00	06:32:00	18:55:00	00:03:51	11:33:00	12:23:00	0.56	0.52	###################	####################
CFDS/C-2	W-2015	2015/09/06	3	14:32:08	14:33:16	06:57:00	18:30:00	06:32:00	18:55:00	00:01:08	11:33:00	12:23:00	0.16	0.15	###################	####################
CFDS/C-2	W-2015	2015/09/06	4	14:58:19	15:00:06	06:57:00	18:30:00	06:32:00	18:55:00	00:01:47	11:33:00	12:23:00	0.26	0.24	###################	####################
CFDS/C-2	W-2015	2015/09/07	1	07:51:04	07:54:26	06:56:00	18:31:00	06:31:00	18:56:00	00:03:22	11:35:00	12:25:00	0.48	0.45	###################	####################
CFDS/C-2	W-2015	2015/09/07	2	09:53:03	09:54:24	06:56:00	18:31:00	06:31:00	18:56:00	00:01:21	11:35:00	12:25:00	0.19	0.18	###################	####################
CFDS/C-2	W-2015	2015/09/07	3	10:47:41	10:47:42	06:56:00	18:31:00	06:31:00	18:56:00	00:00:01	11:35:00	12:25:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/09/07	4	12:24:49	12:27:21	06:56:00	18:31:00	06:31:00	18:56:00	00:02:32	11:35:00	12:25:00	0.36	0.34	###################	####################
CFDS/C-2	W-2015	2015/09/07	5	14:12:09	14:18:19	06:56:00	18:31:00	06:31:00	18:56:00	00:06:10	11:35:00	12:25:00	0.89	0.83	###################	####################
CFDS/C-2	W-2015	2015/09/07	6	15:08:08	15:17:02	06:56:00	18:31:00	06:31:00	18:56:00	00:08:54	11:35:00	12:25:00	1.28	1.19	###################	####################
CFDS/C-2	W-2015	2015/09/07	7	16:17:46	16:17:47	06:56:00	18:31:00	06:31:00	18:56:00	00:00:01	11:35:00	12:25:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/09/08	1	10:17:16	10:26:02	06:55:00	18:32:00	06:30:00	18:57:00	00:08:46	11:37:00	12:27:00	1.26	1.17	###################	####################
CFDS/C-2	W-2015	2015/09/08	2	11:49:39	11:53:16	06:55:00	18:32:00	06:30:00	18:57:00	00:03:37	11:37:00	12:27:00	0.52	0.48	###################	####################
CFDS/C-2	W-2015	2015/09/08	3	15:11:14	15:11:15	06:55:00	18:32:00	06:30:00	18:57:00	00:00:01	11:37:00	12:27:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/09/08	4	15:29:39	15:35:11	06:55:00	18:32:00	06:30:00	18:57:00	00:05:32	11:37:00	12:27:00	0.79	0.74	###################	####################
CFDS/C-2	W-2015	2015/09/08	5	16:21:46	16:29:28	06:55:00	18:32:00	06:30:00	18:57:00	00:07:42	11:37:00	12:27:00	1.1	1.03	###################	####################

CFDS/C-2	W-2015	2015/09/08	6	16:40:54	16:40:55	06:55:00	18:32:00	06:30:00	18:57:00	00:00:01	11:37:00	12:27:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/09/08	7	17:01:27	17:01:29	06:55:00	18:32:00	06:30:00	18:57:00	00:00:02	11:37:00	12:27:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/09/08	8	17:55:05	17:55:07	06:55:00	18:32:00	06:30:00	18:57:00	00:00:02	11:37:00	12:27:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/09/09	1	11:01:47	11:12:40	06:53:00	18:32:00	06:28:00	18:57:00	00:10:53	11:39:00	12:29:00	1.56	1.45	###################	####################
CFDS/C-2	W-2015	2015/09/09	2	14:28:34	14:28:35	06:53:00	18:32:00	06:28:00	18:57:00	00:00:01	11:39:00	12:29:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/09/09	3	15:52:09	15:52:11	06:53:00	18:32:00	06:28:00	18:57:00	00:00:02	11:39:00	12:29:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/09/09	4	16:41:40	16:41:42	06:53:00	18:32:00	06:28:00	18:57:00	00:00:02	11:39:00	12:29:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/09/10	1	08:40:31	08:40:32	06:52:00	18:33:00	06:27:00	18:58:00	00:00:01	11:41:00	12:31:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/09/10	2	13:18:04	13:22:13	06:52:00	18:33:00	06:27:00	18:58:00	00:04:09	11:41:00	12:31:00	0.59	0.55	###################	####################
CFDS/C-2	W-2015	2015/09/10	3	13:40:48	13:41:01	06:52:00	18:33:00	06:27:00	18:58:00	00:00:13	11:41:00	12:31:00	0.03	0.03	###################	####################
CFDS/C-2	W-2015	2015/09/10	4	14:42:31	14:42:33	06:52:00	18:33:00	06:27:00	18:58:00	00:00:02	11:41:00	12:31:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/09/10	5	17:07:26	17:07:27	06:52:00	18:33:00	06:27:00	18:58:00	00:00:01	11:41:00	12:31:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/09/11	1	07:42:50	08:08:39	06:51:00	18:34:00	06:26:00	18:59:00	00:25:49	11:43:00	12:33:00	3.67	3.43	###################	####################
CFDS/C-2	W-2015	2015/09/11	2	10:41:55	10:48:20	06:51:00	18:34:00	06:26:00	18:59:00	00:06:25	11:43:00	12:33:00	0.91	0.85	###################	####################
CFDS/C-2	W-2015	2015/09/11	3	12:28:09	12:28:10	06:51:00	18:34:00	06:26:00	18:59:00	00:00:01	11:43:00	12:33:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/09/11	4	12:47:33	12:47:35	06:51:00	18:34:00	06:26:00	18:59:00	00:00:02	11:43:00	12:33:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/09/11	5	16:06:09	16:10:22	06:51:00	18:34:00	06:26:00	18:59:00	00:04:13	11:43:00	12:33:00	0.6	0.56	###################	####################
CFDS/C-2	W-2015	2015/09/11	6	17:26:38	17:33:49	06:51:00	18:34:00	06:26:00	18:59:00	00:07:11	11:43:00	12:33:00	1.02	0.95	###################	####################
CFDS/C-2	W-2015	2015/09/11	7	17:45:29	17:46:39	06:51:00	18:34:00	06:26:00	18:59:00	00:01:10	11:43:00	12:33:00	0.17	0.16	###################	####################
CFDS/C-2	W-2015	2015/09/12	1	09:57:05	09:58:16	06:49:00	18:34:00	06:24:00	18:59:00	00:01:11	11:45:00	12:35:00	0.17	0.16	###################	####################
CFDS/C-2	W-2015	2015/09/12	2	10:08:53	10:10:07	06:49:00	18:34:00	06:24:00	18:59:00	00:01:14	11:45:00	12:35:00	0.17	0.16	###################	####################
CFDS/C-2	W-2015	2015/09/12	3	11:54:58	12:13:41	06:49:00	18:34:00	06:24:00	18:59:00	00:18:43	11:45:00	12:35:00	2.65	2.48	###################	####################
CFDS/C-2	W-2015	2015/09/12	4	17:24:55	17:24:57	06:49:00	18:34:00	06:24:00	18:59:00	00:00:02	11:45:00	12:35:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/09/13	1	09:20:26	09:20:28	06:48:00	18:35:00	06:23:00	19:00:00	00:00:02	11:47:00	12:37:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/09/13	2	09:52:02	09:53:48	06:48:00	18:35:00	06:23:00	19:00:00	00:01:46	11:47:00	12:37:00	0.25	0.23	###################	####################
CFDS/C-2	W-2015	2015/09/13	3	12:20:58	12:21:01	06:48:00	18:35:00	06:23:00	19:00:00	00:00:03	11:47:00	12:37:00	0.01	0.01	###################	####################
CFDS/C-2	W-2015	2015/09/14	1	07:45:19	07:45:21	06:46:00	18:36:00	06:22:00	19:01:00	00:00:02	11:50:00	12:39:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/09/14	2	09:01:11	09:08:43	06:46:00	18:36:00	06:22:00	19:01:00	00:07:32	11:50:00	12:39:00	1.06	0.99	###################	####################
CFDS/C-2	W-2015	2015/09/14	3	09:49:04	09:49:06	06:46:00	18:36:00	06:22:00	19:01:00	00:00:02	11:50:00	12:39:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/09/14	4	10:30:52	10:38:08	06:46:00	18:36:00	06:22:00	19:01:00	00:07:16	11:50:00	12:39:00	1.02	0.96	###################	####################
CFDS/C-2	W-2015	2015/09/14	5	14:39:04	14:39:05	06:46:00	18:36:00	06:22:00	19:01:00	00:00:01	11:50:00	12:39:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/09/14	6	16:53:36	17:13:23	06:46:00	18:36:00	06:22:00	19:01:00	00:19:47	11:50:00	12:39:00	2.79	2.61	###################	####################
CFDS/C-2	W-2015	2015/09/15	1	09:22:44	09:27:02	06:45:00	18:36:00	06:20:00	19:01:00	00:04:18	11:51:00	12:41:00	0.6	0.57	###################	####################
CFDS/C-2	W-2015	2015/09/15	2	10:50:53	10:57:53	06:45:00	18:36:00	06:20:00	19:01:00	00:07:00	11:51:00	12:41:00	0.98	0.92	###################	####################
CFDS/C-2	W-2015	2015/09/15	3	14:00:15	14:26:48	06:45:00	18:36:00	06:20:00	19:01:00	00:26:33	11:51:00	12:41:00	3.73	3.49	###################	####################
CFDS/C-2	W-2015	2015/09/15	4	15:19:57	15:20:00	06:45:00	18:36:00	06:20:00	19:01:00	00:00:03	11:51:00	12:41:00	0.01	0.01	###################	####################
CFDS/C-2	W-2015	2015/09/15	5	17:17:02	17:19:33	06:45:00	18:36:00	06:20:00	19:01:00	00:02:31	11:51:00	12:41:00	0.35	0.33	###################	####################
CFDS/C-2	W-2015	2015/09/16	1	07:03:35	07:10:13	06:44:00	18:37:00	06:19:00	19:02:00	00:06:38	11:53:00	12:43:00	0.93	0.87	###################	####################
CFDS/C-2	W-2015	2015/09/16	2	08:36:51	08:39:11	06:44:00	18:37:00	06:19:00	19:02:00	00:02:20	11:53:00	12:43:00	0.33	0.31	###################	####################
CFDS/C-2	W-2015	2015/09/16	3	09:55:30	10:12:45	06:44:00	18:37:00	06:19:00	19:02:00	00:17:15	11:53:00	12:43:00	2.42	2.26	###################	####################
CFDS/C-2	W-2015	2015/09/16	4	15:34:20	15:46:53	06:44:00	18:37:00	06:19:00	19:02:00	00:12:33	11:53:00	12:43:00	1.76	1.64	###################	####################
CFDS/C-2	W-2015	2015/09/17	1	12:55:05	13:06:24	06:42:00	18:38:00	06:17:00	19:03:00	00:11:19	11:56:00	12:46:00	1.58	1.48	###################	####################
CFDS/C-2	W-2015	2015/09/17	2	17:13:34	17:21:38	06:42:00	18:38:00	06:17:00	19:03:00	00:08:04	11:56:00	12:46:00	1.13	1.05	###################	####################
CFDS/C-2	W-2015	2015/09/17	3	17:46:03	17:50:25	06:42:00	18:38:00	06:17:00	19:03:00	00:04:22	11:56:00	12:46:00	0.61	0.57	###################	####################
CFDS/C-2	W-2015	2015/09/17	4	18:05:24	18:15:04	06:42:00	18:38:00	06:17:00	19:03:00	00:09:40	11:56:00	12:46:00	1.35	1.26	###################	####################
CFDS/C-2	W-2015	2015/09/18	1	08:00:21	08:03:54	06:41:00	18:38:00	06:16:00	19:03:00	00:03:33	11:57:00	12:47:00	0.5	0.46	###################	####################
CFDS/C-2	W-2015	2015/09/18	2	08:39:47	08:43:37	06:41:00	18:38:00	06:16:00	19:03:00	00:03:50	11:57:00	12:47:00	0.53	0.50	###################	####################
CFDS/C-2	W-2015	2015/09/18	3	10:41:17	10:43:30	06:41:00	18:38:00	06:16:00	19:03:00	00:02:13	11:57:00	12:47:00	0.31	0.29	###################	####################
CFDS/C-2	W-2015	2015/09/18	4	14:22:36	14:29:43	06:41:00	18:38:00	06:16:00	19:03:00	00:07:07	11:57:00	12:47:00	0.99	0.93	###################	####################
CFDS/C-2	W-2015	2015/09/18	5	15:23:33	15:28:14	06:41:00	18:38:00	06:16:00	19:03:00	00:04:41	11:57:00	12:47:00	0.65	0.61	###################	####################
CFDS/C-2	W-2015	2015/09/18	6	16:00:08	16:02:35	06:41:00	18:38:00	06:16:00	19:03:00	00:02:27	11:57:00	12:47:00	0.34	0.32	###################	####################
CFDS/C-2	W-2015	2015/09/18	7	16:35:47	16:46:38	06:41:00	18:38:00	06:16:00	19:03:00	00:10:51	11:57:00	12:47:00	1.51	1.41	###################	####################
CFDS/C-2	W-2015	2015/09/18	8	18:00:10	18:12:10	06:41:00	18:38:00	06:16:00	19:03:00	00:12:00	11:57:00	12:47:00	1.67	1.56	###################	####################
CFDS/C-2	W-2015	2015/09/19	1	08:45:22	08:46:31	06:39:00	18:39:00	06:15:00	19:04:00	00:01:09	12:00:00	12:49:00	0.16	0.15	###################	####################
CFDS/C-2	W-2015	2015/09/19	2	08:56:15	08:57:23	06:39:00	18:39:00	06:15:00	19:04:00	00:01:08	12:00:00	12:49:00	0.16	0.15	###################	####################
CFDS/C-2	W-2015	2015/09/19	3	10:04:01	10:05:13	06:39:00	18:39:00	06:15:00	19:04:00	00:01:12	12:00:00	12:49:00	0.17	0.16	###################	####################
CFDS/C-2	W-2015	2015/09/19	4	10:24:33	10:24:35	06:39:00	18:39:00	06:15:00	19:04:00	00:00:02	12:00:00	12:49:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/09/19	5	11:33:41	11:33:42	06:39:00	18:39:00	06:15:00	19:04:00	00:00:01	12:00:00	12:49:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/09/19	6	12:35:11	12:35:13	06:39:00	18:39:00	06:15:00	19:04:00	00:00:02	12:00:00	12:49:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/09/19	7	15:17:36	15:21:57	06:39:00	18:39:00	06:15:00	19:04:00	00:04:21	12:00:00	12:49:00	0.6	0.57	###################	####################
CFDS/C-2	W-2015	2015/09/19	8	16:33:05	16:34:14	06:39:00	18:39:00	06:15:00	19:04:00	00:01:09	12:00:00	12:49:00	0.16	0.15	###################	####################
CFDS/C-2	W-2015	2015/09/19	9	17:09:08	17:31:17	06:39:00	18:39:00	06:15:00	19:04:00	00:22:09	12:00:00	12:49:00	3.08	2.88	###################	####################
CFDS/C-2	W-2015	2015/09/20	1	07:48:51	07:57:32	06:38:00	18:40:00	06:13:00	19:05:00	00:08:41	12:02:00	12:52:00	1.2	1.12	###################	####################

CFDS/C-2	W-2015	2015/09/20	2	09:28:04	09:44:22	06:38:00	18:40:00	06:13:00	19:05:00	00:16:18	12:02:00	12:52:00	2.26	2.11	###################	####################
CFDS/C-2	W-2015	2015/09/20	3	10:05:20	10:06:32	06:38:00	18:40:00	06:13:00	19:05:00	00:01:12	12:02:00	12:52:00	0.17	0.16	###################	####################
CFDS/C-2	W-2015	2015/09/20	4	11:34:54	11:42:03	06:38:00	18:40:00	06:13:00	19:05:00	00:07:09	12:02:00	12:52:00	0.99	0.93	###################	####################
CFDS/C-2	W-2015	2015/09/20	5	14:27:28	14:41:32	06:38:00	18:40:00	06:13:00	19:05:00	00:14:04	12:02:00	12:52:00	1.95	1.82	###################	####################
CFDS/C-2	W-2015	2015/09/20	6	15:06:30	15:10:17	06:38:00	18:40:00	06:13:00	19:05:00	00:03:47	12:02:00	12:52:00	0.52	0.49	###################	####################
CFDS/C-2	W-2015	2015/09/20	7	15:39:36	15:39:37	06:38:00	18:40:00	06:13:00	19:05:00	00:00:01	12:02:00	12:52:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/09/21	1	07:27:38	07:27:39	06:37:00	18:41:00	06:12:00	19:05:00	00:00:01	12:04:00	12:53:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/09/21	2	13:32:37	13:44:01	06:37:00	18:41:00	06:12:00	19:05:00	00:11:24	12:04:00	12:53:00	1.57	1.47	###################	####################
CFDS/C-2	W-2015	2015/09/21	3	16:28:46	16:30:02	06:37:00	18:41:00	06:12:00	19:05:00	00:01:16	12:04:00	12:53:00	0.17	0.16	###################	####################
CFDS/C-2	W-2015	2015/09/21	4	16:44:58	16:56:22	06:37:00	18:41:00	06:12:00	19:05:00	00:11:24	12:04:00	12:53:00	1.57	1.47	###################	####################
CFDS/C-2	W-2015	2015/09/22	1	10:06:44	10:08:22	06:35:00	18:41:00	06:10:00	19:06:00	00:01:38	12:06:00	12:56:00	0.22	0.21	###################	####################
CFDS/C-2	W-2015	2015/09/22	2	14:49:57	15:03:42	06:35:00	18:41:00	06:10:00	19:06:00	00:13:45	12:06:00	12:56:00	1.89	1.77	###################	####################
CFDS/C-2	W-2015	2015/09/22	3	15:19:52	15:19:53	06:35:00	18:41:00	06:10:00	19:06:00	00:00:01	12:06:00	12:56:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/09/22	4	17:25:52	17:31:43	06:35:00	18:41:00	06:10:00	19:06:00	00:05:51	12:06:00	12:56:00	0.81	0.75	###################	####################
CFDS/C-2	W-2015	2015/09/23	1	07:54:27	07:54:29	06:34:00	18:42:00	06:09:00	19:07:00	00:00:02	12:08:00	12:58:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/09/23	2	12:39:47	12:44:24	06:34:00	18:42:00	06:09:00	19:07:00	00:04:37	12:08:00	12:58:00	0.63	0.59	###################	####################
CFDS/C-2	W-2015	2015/09/24	1	07:08:35	07:10:51	06:32:00	18:43:00	06:08:00	19:08:00	00:02:16	12:11:00	13:00:00	0.31	0.29	###################	####################
CFDS/C-2	W-2015	2015/09/24	2	08:20:03	08:22:37	06:32:00	18:43:00	06:08:00	19:08:00	00:02:34	12:11:00	13:00:00	0.35	0.33	###################	####################
CFDS/C-2	W-2015	2015/09/24	3	10:01:27	10:09:23	06:32:00	18:43:00	06:08:00	19:08:00	00:07:56	12:11:00	13:00:00	1.09	1.02	###################	####################
CFDS/C-2	W-2015	2015/09/24	4	17:23:54	17:26:01	06:32:00	18:43:00	06:08:00	19:08:00	00:02:07	12:11:00	13:00:00	0.29	0.27	###################	####################
CFDS/C-2	W-2015	2015/09/25	1	08:30:22	08:31:34	06:31:00	18:43:00	06:06:00	19:08:00	00:01:12	12:12:00	13:02:00	0.16	0.15	###################	####################
CFDS/C-2	W-2015	2015/09/25	2	10:30:23	10:41:42	06:31:00	18:43:00	06:06:00	19:08:00	00:11:19	12:12:00	13:02:00	1.55	1.45	###################	####################
CFDS/C-2	W-2015	2015/09/25	3	12:37:33	12:40:15	06:31:00	18:43:00	06:06:00	19:08:00	00:02:42	12:12:00	13:02:00	0.37	0.35	###################	####################
CFDS/C-2	W-2015	2015/09/26	1	08:25:00	08:39:32	06:30:00	18:44:00	06:05:00	19:09:00	00:14:32	12:14:00	13:04:00	1.98	1.85	###################	####################
CFDS/C-2	W-2015	2015/09/26	2	08:54:14	08:54:16	06:30:00	18:44:00	06:05:00	19:09:00	00:00:02	12:14:00	13:04:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/09/26	3	11:50:41	11:53:56	06:30:00	18:44:00	06:05:00	19:09:00	00:03:15	12:14:00	13:04:00	0.44	0.41	###################	####################
CFDS/C-2	W-2015	2015/09/26	4	14:00:39	14:00:40	06:30:00	18:44:00	06:05:00	19:09:00	00:00:01	12:14:00	13:04:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/09/26	5	15:06:24	15:17:23	06:30:00	18:44:00	06:05:00	19:09:00	00:10:59	12:14:00	13:04:00	1.5	1.40	###################	####################
CFDS/C-2	W-2015	2015/09/26	6	16:24:25	16:25:35	06:30:00	18:44:00	06:05:00	19:09:00	00:01:10	12:14:00	13:04:00	0.16	0.15	###################	####################
CFDS/C-2	W-2015	2015/09/26	7	17:01:53	17:01:55	06:30:00	18:44:00	06:05:00	19:09:00	00:00:02	12:14:00	13:04:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/09/27	1	16:00:28	16:04:03	06:28:00	18:45:00	06:03:00	19:10:00	00:03:35	12:17:00	13:07:00	0.49	0.45	###################	####################
CFDS/C-2	W-2015	2015/09/28	1	15:30:01	15:41:36	06:27:00	18:45:00	06:02:00	19:10:00	00:11:35	12:18:00	13:08:00	1.57	1.47	###################	####################
CFDS/C-2	W-2015	2015/09/28	2	16:49:37	16:49:38	06:27:00	18:45:00	06:02:00	19:10:00	00:00:01	12:18:00	13:08:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/09/29	1	12:24:03	12:29:02	06:25:00	18:46:00	06:00:00	19:11:00	00:04:59	12:21:00	13:11:00	0.67	0.63	###################	####################
CFDS/C-2	W-2015	2015/09/29	2	12:47:24	12:49:05	06:25:00	18:46:00	06:00:00	19:11:00	00:01:41	12:21:00	13:11:00	0.23	0.21	###################	####################
CFDS/C-2	W-2015	2015/09/29	3	15:33:46	15:33:47	06:25:00	18:46:00	06:00:00	19:11:00	00:00:01	12:21:00	13:11:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/09/29	4	17:44:09	17:47:44	06:25:00	18:46:00	06:00:00	19:11:00	00:03:35	12:21:00	13:11:00	0.48	0.45	###################	####################
CFDS/C-2	W-2015	2015/09/30	1	09:33:00	09:33:02	06:24:00	18:47:00	05:59:00	19:12:00	00:00:02	12:23:00	13:13:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/09/30	2	10:01:51	10:01:53	06:24:00	18:47:00	05:59:00	19:12:00	00:00:02	12:23:00	13:13:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/09/30	3	15:05:30	15:08:53	06:24:00	18:47:00	05:59:00	19:12:00	00:03:23	12:23:00	13:13:00	0.46	0.43	###################	####################
CFDS/C-2	W-2015	2015/09/30	4	16:23:51	16:23:53	06:24:00	18:47:00	05:59:00	19:12:00	00:00:02	12:23:00	13:13:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/09/30	5	17:38:58	17:49:30	06:24:00	18:47:00	05:59:00	19:12:00	00:10:32	12:23:00	13:13:00	1.42	1.33	###################	####################
CFDS/C-2	W-2015	2015/10/01	1	09:48:15	09:48:16	06:23:00	18:48:00	05:58:00	19:13:00	00:00:01	12:25:00	13:15:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/10/01	2	16:11:18	16:12:45	06:23:00	18:48:00	05:58:00	19:13:00	00:01:27	12:25:00	13:15:00	0.19	0.18	###################	####################
CFDS/C-2	W-2015	2015/10/02	1	08:41:39	08:52:08	06:21:00	18:48:00	05:56:00	19:13:00	00:10:29	12:27:00	13:17:00	1.4	1.31	###################	####################
CFDS/C-2	W-2015	2015/10/03	1	13:24:11	13:24:12	06:20:00	18:49:00	05:55:00	19:14:00	00:00:01	12:29:00	13:19:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/10/04	1	12:19:39	12:22:07	06:19:00	18:50:00	05:54:00	19:15:00	00:02:28	12:31:00	13:21:00	0.33	0.31	###################	####################
CFDS/C-2	W-2015	2015/10/05	0	00:00:00	00:00:00	06:16:00	18:51:00	05:52:00	19:16:00	00:00:00	12:35:00	13:24:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/10/06	1	15:24:19	15:26:11	06:16:00	18:51:00	05:51:00	19:17:00	00:01:52	12:35:00	13:26:00	0.25	0.23	###################	####################
CFDS/C-2	W-2015	2015/10/06	2	18:05:36	18:06:47	06:16:00	18:51:00	05:51:00	19:17:00	00:01:11	12:35:00	13:26:00	0.16	0.15	###################	####################
CFDS/C-2	W-2015	2015/10/06	3	18:20:10	18:20:13	06:16:00	18:51:00	05:51:00	19:17:00	00:00:03	12:35:00	13:26:00	0.01	0.01	###################	####################
CFDS/C-2	W-2015	2015/10/07	0	00:00:00	00:00:00	06:15:00	18:52:00	05:49:00	19:17:00	00:00:00	12:37:00	13:28:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/10/08	0	00:00:00	00:00:00	06:13:00	18:53:00	05:48:00	19:18:00	00:00:00	12:40:00	13:30:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/10/09	1	08:11:02	08:12:14	06:12:00	18:54:00	05:47:00	19:19:00	00:01:12	12:42:00	13:32:00	0.16	0.15	###################	####################
CFDS/C-2	W-2015	2015/10/10	0	00:00:00	00:00:00	06:11:00	18:55:00	05:45:00	19:20:00	00:00:00	12:41:00	13:35:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/10/11	0	00:00:00	00:00:00	06:09:00	18:55:00	05:44:00	19:21:00	00:00:00	12:46:00	13:37:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/10/12	0	00:00:00	00:00:00	06:08:00	18:56:00	05:43:00	19:21:00	00:00:00	12:48:00	13:38:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/10/13	0	00:00:00	00:00:00	06:07:00	18:57:00	05:51:00	19:22:00	00:00:00	12:50:00	13:31:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/10/14	0	00:00:00	00:00:00	06:05:00	18:58:00	05:40:00	19:23:00	00:00:00	12:53:00	13:43:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/10/15	0	00:00:00	00:00:00	06:04:00	18:59:00	05:39:00	19:24:00	00:00:00	12:51:00	13:45:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/10/16	0	00:00:00	00:00:00	06:03:00	18:59:00	05:37:00	19:25:00	00:00:00	12:56:00	13:48:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/10/17	1	10:26:23	10:26:25	06:02:00	19:00:00	05:36:00	19:26:00	00:00:02	12:58:00	13:50:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/10/18	1	10:16:12	10:24:10	06:00:00	19:01:00	05:35:00	19:26:00	00:07:58	13:01:00	13:51:00	1.02	0.96	###################	####################

CFDS/C-2	W-2015	2015/10/19	1	13:47:06	13:48:18	05:59:00	19:02:00	05:33:00	19:27:00	00:01:12	13:03:00	13:54:00	0.15	0.14	###################	####################
CFDS/C-2	W-2015	2015/10/20	1	15:06:00	15:06:02	05:58:00	19:02:00	05:32:00	19:28:00	00:00:02	13:04:00	13:56:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/10/21	0	00:00:00	00:00:00	05:57:00	19:03:00	05:31:00	19:29:00	00:00:00	13:06:00	13:58:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/10/22	0	00:00:00	00:00:00	05:56:00	19:04:00	05:30:00	19:30:00	00:00:00	13:08:00	14:00:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/10/23	0	00:00:00	00:00:00	05:54:00	19:05:00	05:29:00	19:31:00	00:00:00	13:11:00	14:02:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/10/24	0	00:00:00	00:00:00	05:53:00	19:06:00	05:27:00	19:32:00	00:00:00	13:13:00	14:05:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/10/25	0	00:00:00	00:00:00	05:52:00	19:07:00	05:26:00	19:33:00	00:00:00	13:15:00	14:07:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/10/26	0	00:00:00	00:00:00	05:51:00	19:08:00	05:25:00	19:34:00	00:00:00	13:17:00	14:09:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/10/27	0	00:00:00	00:00:00	05:50:00	19:08:00	05:24:00	19:35:00	00:00:00	13:18:00	14:11:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/10/28	0	00:00:00	00:00:00	05:49:00	19:09:00	05:23:00	19:36:00	00:00:00	13:20:00	14:13:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/10/29	0	00:00:00	00:00:00	05:48:00	19:10:00	05:22:00	19:37:00	00:00:00	13:22:00	14:15:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/10/30	0	00:00:00	00:00:00	05:47:00	19:11:00	05:21:00	19:38:00	00:00:00	13:24:00	14:17:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/10/31	0	00:00:00	00:00:00	05:46:00	19:12:00	05:19:00	19:39:00	00:00:00	13:26:00	14:20:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/11/01	0	00:00:00	00:00:00	05:45:00	19:13:00	05:18:00	19:40:00	00:00:00	13:28:00	14:22:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/11/02	0	00:00:00	00:00:00	05:44:00	19:14:00	05:17:00	19:41:00	00:00:00	13:30:00	14:24:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/11/03	1	07:21:15	07:21:16	05:43:00	19:15:00	05:16:00	19:42:00	00:00:01	13:32:00	14:26:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/11/04	1	07:42:04	07:42:05	05:42:00	19:16:00	05:15:00	19:43:00	00:00:01	13:34:00	14:28:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/11/05	0	00:00:00	00:00:00	05:41:00	19:17:00	05:14:00	19:44:00	00:00:00	13:36:00	14:30:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/11/06	1	14:00:10	14:00:11	05:40:00	19:18:00	05:13:00	19:45:00	00:00:01	13:38:00	14:32:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/11/07	0	00:00:00	00:00:00	05:39:00	19:19:00	05:12:00	19:46:00	00:00:00	13:40:00	14:34:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/11/08	1	10:32:02	10:32:04	05:39:00	19:20:00	05:12:00	19:47:00	00:00:02	13:41:00	14:35:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/11/09	0	00:00:00	00:00:00	05:38:00	19:20:00	05:11:00	19:48:00	00:00:00	13:42:00	14:37:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/11/10	0	00:00:00	00:00:00	05:37:00	19:21:00	05:10:00	19:49:00	00:00:00	13:44:00	14:39:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/11/11	0	00:00:00	00:00:00	05:36:00	19:22:00	05:09:00	19:50:00	00:00:00	13:46:00	14:41:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/11/12	0	00:00:00	00:00:00	05:35:00	19:23:00	05:08:00	19:51:00	00:00:00	13:48:00	14:43:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/11/13	1	12:28:11	12:33:15	05:35:00	19:24:00	05:07:00	19:52:00	00:05:04	13:49:00	14:45:00	0.61	0.57	###################	####################
CFDS/C-2	W-2015	2015/11/14	0	00:00:00	00:00:00	05:34:00	19:25:00	05:07:00	19:53:00	00:00:00	13:51:00	14:46:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/11/15	1	12:03:24	12:05:42	05:33:00	19:26:00	05:06:00	19:54:00	00:02:18	13:53:00	14:48:00	0.28	0.26	###################	####################
CFDS/C-2	W-2015	2015/11/16	1	12:25:58	12:26:00	05:33:00	19:27:00	05:05:00	19:55:00	00:00:02	13:54:00	14:50:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/11/17	1	17:06:51	17:09:31	05:32:00	19:28:00	05:05:00	19:56:00	00:02:40	13:56:00	14:51:00	0.32	0.30	###################	####################
CFDS/C-2	W-2015	2015/11/18	0	00:00:00	00:00:00	05:32:00	19:29:00	05:04:00	19:57:00	00:00:00	13:57:00	14:53:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/11/19	1	18:36:28	18:36:30	05:31:00	19:30:00	05:03:00	19:58:00	00:00:02	13:59:00	14:55:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/11/20	1	08:25:10	08:25:11	05:31:00	19:31:00	05:03:00	19:59:00	00:00:01	14:00:00	14:56:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/11/20	2	16:51:38	16:53:22	05:31:00	19:31:00	05:03:00	19:59:00	00:01:44	14:00:00	14:56:00	0.21	0.19	###################	####################
CFDS/C-2	W-2015	2015/11/21	0	00:00:00	00:00:00	05:30:00	19:32:00	05:02:00	20:00:00	00:00:00	14:02:00	14:58:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/11/22	1	10:10:36	10:19:28	05:30:00	19:33:00	05:02:00	20:01:00	00:08:52	14:03:00	14:59:00	1.05	0.99	###################	####################
CFDS/C-2	W-2015	2015/11/23	1	07:03:08	07:10:39	05:29:00	19:34:00	05:02:00	20:02:00	00:07:31	14:05:00	15:00:00	0.89	0.84	###################	####################
CFDS/C-2	W-2015	2015/11/23	2	15:49:31	15:49:32	05:29:00	19:34:00	05:02:00	20:02:00	00:00:01	14:05:00	15:00:00	0	0.00	###################	####################
CFDS/C-2	W-2015	2015/11/24	0	00:00:00	00:00:00	05:29:00	19:35:00	05:01:00	20:03:00	00:00:00	14:06:00	15:02:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/01/13	1	17:29:25	17:53:03	05:47:00	20:00:00	05:19:00	20:28:00	00:23:38	14:13:00	15:09:00	2.77	2.60	###################	####################
CFDS/C-1	S-2016	2016/01/13	2	18:26:29	18:26:30	05:47:00	20:00:00	05:19:00	20:28:00	00:00:01	14:13:00	15:09:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/01/13	3	18:51:23	19:04:47	05:47:00	20:00:00	05:19:00	20:28:00	00:13:24	14:13:00	15:09:00	1.57	1.47	###################	####################
CFDS/C-1	S-2016	2016/01/13	4	19:27:04	19:27:06	05:47:00	20:00:00	05:19:00	20:28:00	00:00:02	14:13:00	15:09:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/01/14	1	10:06:25	10:18:09	05:48:00	19:59:00	05:20:00	20:28:00	00:11:44	14:11:00	15:08:00	1.38	1.29	###################	####################
CFDS/C-1	S-2016	2016/01/14	2	10:37:40	10:45:21	05:48:00	19:59:00	05:20:00	20:28:00	00:07:41	14:11:00	15:08:00	0.9	0.85	###################	####################
CFDS/C-1	S-2016	2016/01/14	3	11:05:40	11:07:21	05:48:00	19:59:00	05:20:00	20:28:00	00:01:41	14:11:00	15:08:00	0.2	0.19	###################	####################
CFDS/C-1	S-2016	2016/01/14	4	11:57:25	11:57:27	05:48:00	19:59:00	05:20:00	20:28:00	00:00:02	14:11:00	15:08:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/01/14	5	12:54:14	13:10:34	05:48:00	19:59:00	05:20:00	20:28:00	00:16:20	14:11:00	15:08:00	1.92	1.80	###################	####################
CFDS/C-1	S-2016	2016/01/14	6	13:29:17	13:29:18	05:48:00	19:59:00	05:20:00	20:28:00	00:00:01	14:11:00	15:08:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/01/14	7	13:44:55	13:54:37	05:48:00	19:59:00	05:20:00	20:28:00	00:09:42	14:11:00	15:08:00	1.14	1.07	###################	####################
CFDS/C-1	S-2016	2016/01/14	8	14:13:05	14:15:23	05:48:00	19:59:00	05:20:00	20:28:00	00:02:18	14:11:00	15:08:00	0.27	0.25	###################	####################
CFDS/C-1	S-2016	2016/01/14	9	14:44:15	15:23:50	05:48:00	19:59:00	05:20:00	20:28:00	00:39:35	14:11:00	15:08:00	4.65	4.36	###################	####################
CFDS/C-1	S-2016	2016/01/14	10	15:35:24	15:59:33	05:48:00	19:59:00	05:20:00	20:28:00	00:24:09	14:11:00	15:08:00	2.84	2.66	###################	####################
CFDS/C-1	S-2016	2016/01/14	11	16:20:46	16:30:44	05:48:00	19:59:00	05:20:00	20:28:00	00:09:58	14:11:00	15:08:00	1.17	1.10	###################	####################
CFDS/C-1	S-2016	2016/01/14	12	16:41:31	16:44:24	05:48:00	19:59:00	05:20:00	20:28:00	00:02:53	14:11:00	15:08:00	0.34	0.32	###################	####################
CFDS/C-1	S-2016	2016/01/14	13	17:04:04	17:04:06	05:48:00	19:59:00	05:20:00	20:28:00	00:00:02	14:11:00	15:08:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/01/14	14	17:31:33	17:31:35	05:48:00	19:59:00	05:20:00	20:28:00	00:00:02	14:11:00	15:08:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/01/14	15	17:42:36	18:05:15	05:48:00	19:59:00	05:20:00	20:28:00	00:22:39	14:11:00	15:08:00	2.66	2.49	###################	####################
CFDS/C-1	S-2016	2016/01/14	16	18:14:01	18:58:39	05:48:00	19:59:00	05:20:00	20:28:00	00:44:38	14:11:00	15:08:00	5.24	4.92	###################	####################
CFDS/C-1	S-2016	2016/01/14	17	19:26:34	20:07:36	05:48:00	19:59:00	05:20:00	20:28:00	00:41:02	14:11:00	15:08:00	4.82	4.52	###################	####################
CFDS/C-1	S-2016	2016/01/15	1	05:55:08	05:55:10	05:49:00	19:59:00	05:21:00	20:28:00	00:00:02	14:10:00	15:07:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/01/15	2	06:17:37	06:22:13	05:49:00	19:59:00	05:21:00	20:28:00	00:04:36	14:10:00	15:07:00	0.54	0.51	###################	####################

CFDS/C-1	S-2016	2016/01/15	3	06:37:17	08:18:46	05:49:00	19:59:00	05:21:00	20:28:00	01:41:29	14:10:00	15:07:00	11.94	11.19	###################	####################
CFDS/C-1	S-2016	2016/01/15	4	08:35:25	09:57:30	05:49:00	19:59:00	05:21:00	20:28:00	01:22:05	14:10:00	15:07:00	9.66	9.05	###################	####################
CFDS/C-1	S-2016	2016/01/15	5	10:10:45	10:37:47	05:49:00	19:59:00	05:21:00	20:28:00	00:27:02	14:10:00	15:07:00	3.18	2.98	###################	####################
CFDS/C-1	S-2016	2016/01/15	6	11:41:46	12:48:31	05:49:00	19:59:00	05:21:00	20:28:00	01:06:45	14:10:00	15:07:00	7.85	7.36	###################	####################
CFDS/C-1	S-2016	2016/01/15	7	13:44:39	14:08:24	05:49:00	19:59:00	05:21:00	20:28:00	00:23:45	14:10:00	15:07:00	2.79	2.62	###################	####################
CFDS/C-1	S-2016	2016/01/15	8	14:33:22	14:40:26	05:49:00	19:59:00	05:21:00	20:28:00	00:07:04	14:10:00	15:07:00	0.83	0.78	###################	####################
CFDS/C-1	S-2016	2016/01/15	9	15:12:40	15:52:10	05:49:00	19:59:00	05:21:00	20:28:00	00:39:30	14:10:00	15:07:00	4.65	4.36	###################	####################
CFDS/C-1	S-2016	2016/01/15	10	16:05:25	16:17:09	05:49:00	19:59:00	05:21:00	20:28:00	00:11:44	14:10:00	15:07:00	1.38	1.29	###################	####################
CFDS/C-1	S-2016	2016/01/15	11	16:54:04	20:04:56	05:49:00	19:59:00	05:21:00	20:28:00	03:10:52	14:10:00	15:07:00	22.45	21.04	###################	####################
CFDS/C-1	S-2016	2016/01/16	1	05:48:42	07:22:35	05:50:00	19:59:00	05:22:00	20:27:00	01:33:53	14:09:00	15:05:00	11.06	10.37	###################	####################
CFDS/C-1	S-2016	2016/01/16	2	07:52:04	08:07:49	05:50:00	19:59:00	05:22:00	20:27:00	00:15:45	14:09:00	15:05:00	1.86	1.74	###################	####################
CFDS/C-1	S-2016	2016/01/16	3	08:19:37	08:29:59	05:50:00	19:59:00	05:22:00	20:27:00	00:10:22	14:09:00	15:05:00	1.22	1.15	###################	####################
CFDS/C-1	S-2016	2016/01/16	4	08:39:45	09:25:52	05:50:00	19:59:00	05:22:00	20:27:00	00:46:07	14:09:00	15:05:00	5.43	5.10	###################	####################
CFDS/C-1	S-2016	2016/01/16	5	09:39:32	09:39:34	05:50:00	19:59:00	05:22:00	20:27:00	00:00:02	14:09:00	15:05:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/01/16	6	10:27:00	11:04:19	05:50:00	19:59:00	05:22:00	20:27:00	00:37:19	14:09:00	15:05:00	4.4	4.12	###################	####################
CFDS/C-1	S-2016	2016/01/16	7	12:18:09	12:38:47	05:50:00	19:59:00	05:22:00	20:27:00	00:20:38	14:09:00	15:05:00	2.43	2.28	###################	####################
CFDS/C-1	S-2016	2016/01/16	8	12:57:43	13:02:54	05:50:00	19:59:00	05:22:00	20:27:00	00:05:11	14:09:00	15:05:00	0.61	0.57	###################	####################
CFDS/C-1	S-2016	2016/01/16	9	13:45:16	13:47:26	05:50:00	19:59:00	05:22:00	20:27:00	00:02:10	14:09:00	15:05:00	0.26	0.24	###################	####################
CFDS/C-1	S-2016	2016/01/16	10	14:06:45	14:17:32	05:50:00	19:59:00	05:22:00	20:27:00	00:10:47	14:09:00	15:05:00	1.27	1.19	###################	####################
CFDS/C-1	S-2016	2016/01/16	11	14:42:56	14:48:26	05:50:00	19:59:00	05:22:00	20:27:00	00:05:30	14:09:00	15:05:00	0.65	0.61	###################	####################
CFDS/C-1	S-2016	2016/01/16	12	15:24:41	15:26:27	05:50:00	19:59:00	05:22:00	20:27:00	00:01:46	14:09:00	15:05:00	0.21	0.20	###################	####################
CFDS/C-1	S-2016	2016/01/16	13	15:56:46	17:54:38	05:50:00	19:59:00	05:22:00	20:27:00	01:57:52	14:09:00	15:05:00	13.88	13.02	###################	####################
CFDS/C-1	S-2016	2016/01/16	14	18:05:11	18:38:50	05:50:00	19:59:00	05:22:00	20:27:00	00:33:39	14:09:00	15:05:00	3.96	3.72	###################	####################
CFDS/C-1	S-2016	2016/01/16	15	19:04:21	19:34:58	05:50:00	19:59:00	05:22:00	20:27:00	00:30:37	14:09:00	15:05:00	3.61	3.38	###################	####################
CFDS/C-1	S-2016	2016/01/16	16	20:02:19	20:04:14	05:50:00	19:59:00	05:22:00	20:27:00	00:01:55	14:09:00	15:05:00	0.23	0.21	###################	####################
CFDS/C-1	S-2016	2016/01/17	1	05:42:24	05:42:25	05:51:00	19:59:00	05:23:00	20:27:00	00:00:01	14:08:00	15:04:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/01/17	2	05:54:51	06:28:07	05:51:00	19:59:00	05:23:00	20:27:00	00:33:16	14:08:00	15:04:00	3.92	3.68	###################	####################
CFDS/C-1	S-2016	2016/01/17	3	06:58:11	07:12:18	05:51:00	19:59:00	05:23:00	20:27:00	00:14:07	14:08:00	15:04:00	1.66	1.56	###################	####################
CFDS/C-1	S-2016	2016/01/17	4	07:23:07	07:30:13	05:51:00	19:59:00	05:23:00	20:27:00	00:07:06	14:08:00	15:04:00	0.84	0.79	###################	####################
CFDS/C-1	S-2016	2016/01/17	5	08:54:28	09:14:33	05:51:00	19:59:00	05:23:00	20:27:00	00:20:05	14:08:00	15:04:00	2.37	2.22	###################	####################
CFDS/C-1	S-2016	2016/01/17	6	09:29:28	09:38:10	05:51:00	19:59:00	05:23:00	20:27:00	00:08:42	14:08:00	15:04:00	1.03	0.96	###################	####################
CFDS/C-1	S-2016	2016/01/17	7	10:34:07	10:41:21	05:51:00	19:59:00	05:23:00	20:27:00	00:07:14	14:08:00	15:04:00	0.85	0.80	###################	####################
CFDS/C-1	S-2016	2016/01/17	8	11:04:35	11:18:11	05:51:00	19:59:00	05:23:00	20:27:00	00:13:36	14:08:00	15:04:00	1.6	1.50	###################	####################
CFDS/C-1	S-2016	2016/01/17	9	11:37:36	11:41:08	05:51:00	19:59:00	05:23:00	20:27:00	00:03:32	14:08:00	15:04:00	0.42	0.39	###################	####################
CFDS/C-1	S-2016	2016/01/17	10	11:52:05	11:55:35	05:51:00	19:59:00	05:23:00	20:27:00	00:03:30	14:08:00	15:04:00	0.41	0.39	###################	####################
CFDS/C-1	S-2016	2016/01/17	11	12:11:37	12:33:10	05:51:00	19:59:00	05:23:00	20:27:00	00:21:33	14:08:00	15:04:00	2.54	2.38	###################	####################
CFDS/C-1	S-2016	2016/01/17	12	13:31:01	14:01:03	05:51:00	19:59:00	05:23:00	20:27:00	00:30:02	14:08:00	15:04:00	3.54	3.32	###################	####################
CFDS/C-1	S-2016	2016/01/17	13	14:31:37	14:43:29	05:51:00	19:59:00	05:23:00	20:27:00	00:11:52	14:08:00	15:04:00	1.4	1.31	###################	####################
CFDS/C-1	S-2016	2016/01/17	14	15:04:45	15:10:07	05:51:00	19:59:00	05:23:00	20:27:00	00:05:22	14:08:00	15:04:00	0.63	0.59	###################	####################
CFDS/C-1	S-2016	2016/01/17	15	15:24:18	15:42:27	05:51:00	19:59:00	05:23:00	20:27:00	00:18:09	14:08:00	15:04:00	2.14	2.01	###################	####################
CFDS/C-1	S-2016	2016/01/17	16	16:26:05	16:33:44	05:51:00	19:59:00	05:23:00	20:27:00	00:07:39	14:08:00	15:04:00	0.9	0.85	###################	####################
CFDS/C-1	S-2016	2016/01/17	17	17:16:38	17:20:10	05:51:00	19:59:00	05:23:00	20:27:00	00:03:32	14:08:00	15:04:00	0.42	0.39	###################	####################
CFDS/C-1	S-2016	2016/01/17	18	18:01:40	18:01:42	05:51:00	19:59:00	05:23:00	20:27:00	00:00:02	14:08:00	15:04:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/01/17	19	18:28:19	18:38:54	05:51:00	19:59:00	05:23:00	20:27:00	00:10:35	14:08:00	15:04:00	1.25	1.17	###################	####################
CFDS/C-1	S-2016	2016/01/17	20	18:56:07	18:56:09	05:51:00	19:59:00	05:23:00	20:27:00	00:00:02	14:08:00	15:04:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/01/18	1	06:15:40	06:19:05	05:52:00	19:58:00	05:24:00	20:27:00	00:03:25	14:06:00	15:03:00	0.4	0.38	###################	####################
CFDS/C-1	S-2016	2016/01/18	2	06:31:33	06:31:35	05:52:00	19:58:00	05:24:00	20:27:00	00:00:02	14:06:00	15:03:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/01/18	3	07:02:55	07:15:24	05:52:00	19:58:00	05:24:00	20:27:00	00:12:29	14:06:00	15:03:00	1.48	1.38	###################	####################
CFDS/C-1	S-2016	2016/01/18	4	07:26:54	07:30:57	05:52:00	19:58:00	05:24:00	20:27:00	00:04:03	14:06:00	15:03:00	0.48	0.45	###################	####################
CFDS/C-1	S-2016	2016/01/18	5	07:44:34	08:14:47	05:52:00	19:58:00	05:24:00	20:27:00	00:30:13	14:06:00	15:03:00	3.57	3.35	###################	####################
CFDS/C-1	S-2016	2016/01/18	6	08:29:03	08:41:54	05:52:00	19:58:00	05:24:00	20:27:00	00:12:51	14:06:00	15:03:00	1.52	1.42	###################	####################
CFDS/C-1	S-2016	2016/01/18	7	11:01:37	11:08:40	05:52:00	19:58:00	05:24:00	20:27:00	00:07:03	14:06:00	15:03:00	0.83	0.78	###################	####################
CFDS/C-1	S-2016	2016/01/18	8	11:33:04	11:36:27	05:52:00	19:58:00	05:24:00	20:27:00	00:03:23	14:06:00	15:03:00	0.4	0.37	###################	####################
CFDS/C-1	S-2016	2016/01/18	9	12:28:34	12:53:07	05:52:00	19:58:00	05:24:00	20:27:00	00:24:33	14:06:00	15:03:00	2.9	2.72	###################	####################
CFDS/C-1	S-2016	2016/01/18	10	14:24:21	14:26:15	05:52:00	19:58:00	05:24:00	20:27:00	00:01:54	14:06:00	15:03:00	0.22	0.21	###################	####################
CFDS/C-1	S-2016	2016/01/18	11	14:50:27	14:52:09	05:52:00	19:58:00	05:24:00	20:27:00	00:01:42	14:06:00	15:03:00	0.2	0.19	###################	####################
CFDS/C-1	S-2016	2016/01/18	12	15:04:09	15:06:50	05:52:00	19:58:00	05:24:00	20:27:00	00:02:41	14:06:00	15:03:00	0.32	0.30	###################	####################
CFDS/C-1	S-2016	2016/01/18	13	15:20:06	15:37:10	05:52:00	19:58:00	05:24:00	20:27:00	00:17:04	14:06:00	15:03:00	2.02	1.89	###################	####################
CFDS/C-1	S-2016	2016/01/18	14	16:02:45	16:04:31	05:52:00	19:58:00	05:24:00	20:27:00	00:01:46	14:06:00	15:03:00	0.21	0.20	###################	####################
CFDS/C-1	S-2016	2016/01/18	15	16:27:07	16:27:09	05:52:00	19:58:00	05:24:00	20:27:00	00:00:02	14:06:00	15:03:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/01/18	16	16:51:24	17:27:39	05:52:00	19:58:00	05:24:00	20:27:00	00:36:15	14:06:00	15:03:00	4.28	4.01	###################	####################
CFDS/C-1	S-2016	2016/01/18	17	17:38:05	17:39:51	05:52:00	19:58:00	05:24:00	20:27:00	00:01:46	14:06:00	15:03:00	0.21	0.20	###################	####################
CFDS/C-1	S-2016	2016/01/18	18	18:03:40	18:35:08	05:52:00	19:58:00	05:24:00	20:27:00	00:31:28	14:06:00	15:03:00	3.72	3.48	###################	####################

CFDS/C-1	S-2016	2016/01/18	19	18:47:34	18:47:36	05:52:00	19:58:00	05:24:00	20:27:00	00:00:02	14:06:00	15:03:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/01/18	20	19:38:34	19:40:16	05:52:00	19:58:00	05:24:00	20:27:00	00:01:42	14:06:00	15:03:00	0.2	0.19	###################	####################
CFDS/C-1	S-2016	2016/01/19	1	06:01:36	06:26:31	05:53:00	19:58:00	05:25:00	20:26:00	00:24:55	14:05:00	15:01:00	2.95	2.77	###################	####################
CFDS/C-1	S-2016	2016/01/19	2	07:43:52	07:45:35	05:53:00	19:58:00	05:25:00	20:26:00	00:01:43	14:05:00	15:01:00	0.2	0.19	###################	####################
CFDS/C-1	S-2016	2016/01/19	3	08:30:45	08:30:47	05:53:00	19:58:00	05:25:00	20:26:00	00:00:02	14:05:00	15:01:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/01/19	4	09:21:46	09:39:52	05:53:00	19:58:00	05:25:00	20:26:00	00:18:06	14:05:00	15:01:00	2.14	2.01	###################	####################
CFDS/C-1	S-2016	2016/01/19	5	09:50:02	09:53:27	05:53:00	19:58:00	05:25:00	20:26:00	00:03:25	14:05:00	15:01:00	0.4	0.38	###################	####################
CFDS/C-1	S-2016	2016/01/19	6	15:06:58	15:08:48	05:53:00	19:58:00	05:25:00	20:26:00	00:01:50	14:05:00	15:01:00	0.22	0.20	###################	####################
CFDS/C-1	S-2016	2016/01/19	7	17:01:22	17:13:32	05:53:00	19:58:00	05:25:00	20:26:00	00:12:10	14:05:00	15:01:00	1.44	1.35	###################	####################
CFDS/C-1	S-2016	2016/01/19	8	17:31:23	17:44:59	05:53:00	19:58:00	05:25:00	20:26:00	00:13:36	14:05:00	15:01:00	1.61	1.51	###################	####################
CFDS/C-1	S-2016	2016/01/19	9	18:10:01	18:10:03	05:53:00	19:58:00	05:25:00	20:26:00	00:00:02	14:05:00	15:01:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/01/19	10	19:01:25	19:01:27	05:53:00	19:58:00	05:25:00	20:26:00	00:00:02	14:05:00	15:01:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/01/19	11	20:09:31	20:11:22	05:53:00	19:58:00	05:25:00	20:26:00	00:01:51	14:05:00	15:01:00	0.22	0.21	###################	####################
CFDS/C-1	S-2016	2016/01/20	1	06:01:03	06:12:06	05:54:00	19:58:00	05:26:00	20:26:00	00:11:03	14:04:00	15:00:00	1.31	1.23	###################	####################
CFDS/C-1	S-2016	2016/01/20	2	08:12:31	08:19:38	05:54:00	19:58:00	05:26:00	20:26:00	00:07:07	14:04:00	15:00:00	0.84	0.79	###################	####################
CFDS/C-1	S-2016	2016/01/20	3	08:34:13	08:37:02	05:54:00	19:58:00	05:26:00	20:26:00	00:02:49	14:04:00	15:00:00	0.33	0.31	###################	####################
CFDS/C-1	S-2016	2016/01/20	4	09:02:15	09:17:26	05:54:00	19:58:00	05:26:00	20:26:00	00:15:11	14:04:00	15:00:00	1.8	1.69	###################	####################
CFDS/C-1	S-2016	2016/01/20	5	09:37:35	09:39:19	05:54:00	19:58:00	05:26:00	20:26:00	00:01:44	14:04:00	15:00:00	0.21	0.19	###################	####################
CFDS/C-1	S-2016	2016/01/20	6	09:50:21	09:50:23	05:54:00	19:58:00	05:26:00	20:26:00	00:00:02	14:04:00	15:00:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/01/20	7	10:01:28	10:28:22	05:54:00	19:58:00	05:26:00	20:26:00	00:26:54	14:04:00	15:00:00	3.19	2.99	###################	####################
CFDS/C-1	S-2016	2016/01/20	8	13:22:32	13:22:33	05:54:00	19:58:00	05:26:00	20:26:00	00:00:01	14:04:00	15:00:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/01/20	9	14:22:22	14:32:07	05:54:00	19:58:00	05:26:00	20:26:00	00:09:45	14:04:00	15:00:00	1.16	1.08	###################	####################
CFDS/C-1	S-2016	2016/01/20	10	14:56:24	14:56:26	05:54:00	19:58:00	05:26:00	20:26:00	00:00:02	14:04:00	15:00:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/01/20	11	15:10:38	15:12:24	05:54:00	19:58:00	05:26:00	20:26:00	00:01:46	14:04:00	15:00:00	0.21	0.20	###################	####################
CFDS/C-1	S-2016	2016/01/20	12	16:41:42	16:43:41	05:54:00	19:58:00	05:26:00	20:26:00	00:01:59	14:04:00	15:00:00	0.23	0.22	###################	####################
CFDS/C-1	S-2016	2016/01/20	13	17:19:36	17:38:16	05:54:00	19:58:00	05:26:00	20:26:00	00:18:40	14:04:00	15:00:00	2.21	2.07	###################	####################
CFDS/C-1	S-2016	2016/01/20	14	19:00:09	19:00:11	05:54:00	19:58:00	05:26:00	20:26:00	00:00:02	14:04:00	15:00:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/01/20	15	19:19:17	19:34:24	05:54:00	19:58:00	05:26:00	20:26:00	00:15:07	14:04:00	15:00:00	1.79	1.68	###################	####################
CFDS/C-1	S-2016	2016/01/21	1	07:25:08	07:28:35	05:55:00	19:57:00	05:27:00	20:25:00	00:03:27	14:02:00	14:58:00	0.41	0.38	###################	####################
CFDS/C-1	S-2016	2016/01/21	2	10:02:29	10:02:31	05:55:00	19:57:00	05:27:00	20:25:00	00:00:02	14:02:00	14:58:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/01/21	3	10:22:56	10:34:54	05:55:00	19:57:00	05:27:00	20:25:00	00:11:58	14:02:00	14:58:00	1.42	1.33	###################	####################
CFDS/C-1	S-2016	2016/01/21	4	10:45:18	10:47:03	05:55:00	19:57:00	05:27:00	20:25:00	00:01:45	14:02:00	14:58:00	0.21	0.19	###################	####################
CFDS/C-1	S-2016	2016/01/21	5	11:18:51	11:22:20	05:55:00	19:57:00	05:27:00	20:25:00	00:03:29	14:02:00	14:58:00	0.41	0.39	###################	####################
CFDS/C-1	S-2016	2016/01/21	6	14:56:03	14:56:04	05:55:00	19:57:00	05:27:00	20:25:00	00:00:01	14:02:00	14:58:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/01/21	7	15:21:10	15:21:12	05:55:00	19:57:00	05:27:00	20:25:00	00:00:02	14:02:00	14:58:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/01/21	8	15:46:09	15:46:11	05:55:00	19:57:00	05:27:00	20:25:00	00:00:02	14:02:00	14:58:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/01/21	9	15:59:13	15:59:15	05:55:00	19:57:00	05:27:00	20:25:00	00:00:02	14:02:00	14:58:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/01/21	10	17:14:29	17:14:31	05:55:00	19:57:00	05:27:00	20:25:00	00:00:02	14:02:00	14:58:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/01/21	11	17:35:33	17:35:35	05:55:00	19:57:00	05:27:00	20:25:00	00:00:02	14:02:00	14:58:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/01/22	1	07:50:57	08:01:40	05:56:00	19:57:00	05:28:00	20:25:00	00:10:43	14:01:00	14:57:00	1.27	1.19	###################	####################
CFDS/C-1	S-2016	2016/01/22	2	08:13:44	08:13:46	05:56:00	19:57:00	05:28:00	20:25:00	00:00:02	14:01:00	14:57:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/01/22	3	09:19:16	09:19:18	05:56:00	19:57:00	05:28:00	20:25:00	00:00:02	14:01:00	14:57:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/01/22	4	10:03:01	10:09:08	05:56:00	19:57:00	05:28:00	20:25:00	00:06:07	14:01:00	14:57:00	0.73	0.68	###################	####################
CFDS/C-1	S-2016	2016/01/22	5	10:20:59	10:23:06	05:56:00	19:57:00	05:28:00	20:25:00	00:02:07	14:01:00	14:57:00	0.25	0.24	###################	####################
CFDS/C-1	S-2016	2016/01/22	6	14:31:52	14:36:19	05:56:00	19:57:00	05:28:00	20:25:00	00:04:27	14:01:00	14:57:00	0.53	0.50	###################	####################
CFDS/C-1	S-2016	2016/01/22	7	14:53:25	14:53:27	05:56:00	19:57:00	05:28:00	20:25:00	00:00:02	14:01:00	14:57:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/01/23	1	07:48:27	07:50:50	05:57:00	19:56:00	05:29:00	20:24:00	00:02:23	13:59:00	14:55:00	0.28	0.27	###################	####################
CFDS/C-1	S-2016	2016/01/23	2	09:44:36	09:48:21	05:57:00	19:56:00	05:29:00	20:24:00	00:03:45	13:59:00	14:55:00	0.45	0.42	###################	####################
CFDS/C-1	S-2016	2016/01/23	3	10:08:51	10:11:37	05:57:00	19:56:00	05:29:00	20:24:00	00:02:46	13:59:00	14:55:00	0.33	0.31	###################	####################
CFDS/C-1	S-2016	2016/01/23	4	13:39:46	13:41:44	05:57:00	19:56:00	05:29:00	20:24:00	00:01:58	13:59:00	14:55:00	0.23	0.22	###################	####################
CFDS/C-1	S-2016	2016/01/23	5	14:05:59	14:06:00	05:57:00	19:56:00	05:29:00	20:24:00	00:00:01	13:59:00	14:55:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/01/23	6	14:22:40	14:42:51	05:57:00	19:56:00	05:29:00	20:24:00	00:20:11	13:59:00	14:55:00	2.41	2.26	###################	####################
CFDS/C-1	S-2016	2016/01/24	1	07:07:34	07:58:52	05:58:00	19:56:00	05:30:00	20:24:00	00:51:18	13:58:00	14:54:00	6.12	5.74	###################	####################
CFDS/C-1	S-2016	2016/01/24	2	08:35:51	08:37:52	05:58:00	19:56:00	05:30:00	20:24:00	00:02:01	13:58:00	14:54:00	0.24	0.23	###################	####################
CFDS/C-1	S-2016	2016/01/24	3	11:03:25	11:35:23	05:58:00	19:56:00	05:30:00	20:24:00	00:31:58	13:58:00	14:54:00	3.81	3.58	###################	####################
CFDS/C-1	S-2016	2016/01/24	4	13:57:11	14:02:33	05:58:00	19:56:00	05:30:00	20:24:00	00:05:22	13:58:00	14:54:00	0.64	0.60	###################	####################
CFDS/C-1	S-2016	2016/01/24	5	16:24:04	16:29:12	05:58:00	19:56:00	05:30:00	20:24:00	00:05:08	13:58:00	14:54:00	0.61	0.57	###################	####################
CFDS/C-1	S-2016	2016/01/24	6	16:55:59	16:57:54	05:58:00	19:56:00	05:30:00	20:24:00	00:01:55	13:58:00	14:54:00	0.23	0.21	###################	####################
CFDS/C-1	S-2016	2016/01/24	7	17:12:12	17:16:36	05:58:00	19:56:00	05:30:00	20:24:00	00:04:24	13:58:00	14:54:00	0.53	0.49	###################	####################
CFDS/C-1	S-2016	2016/01/24	8	17:28:54	18:47:29	05:58:00	19:56:00	05:30:00	20:24:00	01:18:35	13:58:00	14:54:00	9.38	8.79	###################	####################
CFDS/C-1	S-2016	2016/01/24	9	19:18:47	19:34:23	05:58:00	19:56:00	05:30:00	20:24:00	00:15:36	13:58:00	14:54:00	1.86	1.74	###################	####################
CFDS/C-1	S-2016	2016/01/24	10	19:48:39	20:03:52	05:58:00	19:56:00	05:30:00	20:24:00	00:15:13	13:58:00	14:54:00	1.82	1.70	###################	####################
CFDS/C-1	S-2016	2016/01/25	1	10:50:58	10:58:40	05:59:00	19:55:00	05:31:00	20:23:00	00:07:42	13:56:00	14:52:00	0.92	0.86	###################	####################

CFDS/C-1	S-2016	2016/01/25	2	11:15:10	11:17:17	05:59:00	19:55:00	05:31:00	20:23:00	00:02:07	13:56:00	14:52:00	0.25	0.24	###################	####################
CFDS/C-1	S-2016	2016/01/25	3	11:29:13	11:29:15	05:59:00	19:55:00	05:31:00	20:23:00	00:00:02	13:56:00	14:52:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/01/25	4	11:43:08	12:04:08	05:59:00	19:55:00	05:31:00	20:23:00	00:21:00	13:56:00	14:52:00	2.51	2.35	###################	####################
CFDS/C-1	S-2016	2016/01/25	5	12:24:40	12:29:54	05:59:00	19:55:00	05:31:00	20:23:00	00:05:14	13:56:00	14:52:00	0.63	0.59	###################	####################
CFDS/C-1	S-2016	2016/01/25	6	12:44:32	13:33:35	05:59:00	19:55:00	05:31:00	20:23:00	00:49:03	13:56:00	14:52:00	5.87	5.50	###################	####################
CFDS/C-1	S-2016	2016/01/25	7	16:15:25	16:15:27	05:59:00	19:55:00	05:31:00	20:23:00	00:00:02	13:56:00	14:52:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/01/25	8	16:43:28	16:48:30	05:59:00	19:55:00	05:31:00	20:23:00	00:05:02	13:56:00	14:52:00	0.6	0.56	###################	####################
CFDS/C-1	S-2016	2016/01/25	9	17:03:17	17:14:52	05:59:00	19:55:00	05:31:00	20:23:00	00:11:35	13:56:00	14:52:00	1.39	1.30	###################	####################
CFDS/C-1	S-2016	2016/01/25	10	17:36:34	17:36:35	05:59:00	19:55:00	05:31:00	20:23:00	00:00:01	13:56:00	14:52:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/01/25	11	17:47:59	18:05:17	05:59:00	19:55:00	05:31:00	20:23:00	00:17:18	13:56:00	14:52:00	2.07	1.94	###################	####################
CFDS/C-1	S-2016	2016/01/25	12	18:21:22	18:21:24	05:59:00	19:55:00	05:31:00	20:23:00	00:00:02	13:56:00	14:52:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/01/25	13	19:25:48	19:34:28	05:59:00	19:55:00	05:31:00	20:23:00	00:08:40	13:56:00	14:52:00	1.04	0.97	###################	####################
CFDS/C-1	S-2016	2016/01/25	14	19:58:33	20:13:53	05:59:00	19:55:00	05:31:00	20:23:00	00:15:20	13:56:00	14:52:00	1.83	1.72	###################	####################
CFDS/C-1	S-2016	2016/01/26	1	07:20:19	07:36:06	06:00:00	19:55:00	05:32:00	20:22:00	00:15:47	13:55:00	14:50:00	1.89	1.77	###################	####################
CFDS/C-1	S-2016	2016/01/26	2	08:51:46	08:51:47	06:00:00	19:55:00	05:32:00	20:22:00	00:00:01	13:55:00	14:50:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/01/26	3	09:05:39	09:47:10	06:00:00	19:55:00	05:32:00	20:22:00	00:41:31	13:55:00	14:50:00	4.97	4.66	###################	####################
CFDS/C-1	S-2016	2016/01/26	4	10:01:45	10:03:46	06:00:00	19:55:00	05:32:00	20:22:00	00:02:01	13:55:00	14:50:00	0.24	0.23	###################	####################
CFDS/C-1	S-2016	2016/01/26	5	10:16:13	10:46:42	06:00:00	19:55:00	05:32:00	20:22:00	00:30:29	13:55:00	14:50:00	3.65	3.43	###################	####################
CFDS/C-1	S-2016	2016/01/26	6	10:58:40	11:27:02	06:00:00	19:55:00	05:32:00	20:22:00	00:28:22	13:55:00	14:50:00	3.4	3.19	###################	####################
CFDS/C-1	S-2016	2016/01/26	7	12:39:20	13:42:09	06:00:00	19:55:00	05:32:00	20:22:00	01:02:49	13:55:00	14:50:00	7.52	7.06	###################	####################
CFDS/C-1	S-2016	2016/01/26	8	14:12:22	14:12:24	06:00:00	19:55:00	05:32:00	20:22:00	00:00:02	13:55:00	14:50:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/01/26	9	15:01:52	15:01:54	06:00:00	19:55:00	05:32:00	20:22:00	00:00:02	13:55:00	14:50:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/01/26	10	15:12:10	15:12:11	06:00:00	19:55:00	05:32:00	20:22:00	00:00:01	13:55:00	14:50:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/01/26	11	16:23:32	16:23:34	06:00:00	19:55:00	05:32:00	20:22:00	00:00:02	13:55:00	14:50:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/01/26	12	17:20:07	17:20:09	06:00:00	19:55:00	05:32:00	20:22:00	00:00:02	13:55:00	14:50:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/01/26	13	17:37:39	17:51:14	06:00:00	19:55:00	05:32:00	20:22:00	00:13:35	13:55:00	14:50:00	1.63	1.53	###################	####################
CFDS/C-1	S-2016	2016/01/27	1	07:01:52	07:04:31	06:01:00	19:54:00	05:33:00	20:22:00	00:02:39	13:53:00	14:49:00	0.32	0.30	###################	####################
CFDS/C-1	S-2016	2016/01/27	2	07:27:50	08:02:22	06:01:00	19:54:00	05:33:00	20:22:00	00:34:32	13:53:00	14:49:00	4.15	3.88	###################	####################
CFDS/C-1	S-2016	2016/01/27	3	08:15:40	08:54:24	06:01:00	19:54:00	05:33:00	20:22:00	00:38:44	13:53:00	14:49:00	4.65	4.36	###################	####################
CFDS/C-1	S-2016	2016/01/27	4	09:07:51	09:09:41	06:01:00	19:54:00	05:33:00	20:22:00	00:01:50	13:53:00	14:49:00	0.22	0.21	###################	####################
CFDS/C-1	S-2016	2016/01/27	5	09:34:12	09:39:47	06:01:00	19:54:00	05:33:00	20:22:00	00:05:35	13:53:00	14:49:00	0.67	0.63	###################	####################
CFDS/C-1	S-2016	2016/01/27	6	10:13:48	10:42:27	06:01:00	19:54:00	05:33:00	20:22:00	00:28:39	13:53:00	14:49:00	3.44	3.22	###################	####################
CFDS/C-1	S-2016	2016/01/27	7	10:58:12	11:12:42	06:01:00	19:54:00	05:33:00	20:22:00	00:14:30	13:53:00	14:49:00	1.74	1.63	###################	####################
CFDS/C-1	S-2016	2016/01/27	8	11:24:18	12:14:21	06:01:00	19:54:00	05:33:00	20:22:00	00:50:03	13:53:00	14:49:00	6.01	5.63	###################	####################
CFDS/C-1	S-2016	2016/01/27	9	13:15:55	13:15:57	06:01:00	19:54:00	05:33:00	20:22:00	00:00:02	13:53:00	14:49:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/01/27	10	13:51:27	14:01:12	06:01:00	19:54:00	05:33:00	20:22:00	00:09:45	13:53:00	14:49:00	1.17	1.10	###################	####################
CFDS/C-1	S-2016	2016/01/27	11	14:44:56	14:44:57	06:01:00	19:54:00	05:33:00	20:22:00	00:00:01	13:53:00	14:49:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/01/27	12	14:56:22	15:56:10	06:01:00	19:54:00	05:33:00	20:22:00	00:59:48	13:53:00	14:49:00	7.18	6.73	###################	####################
CFDS/C-1	S-2016	2016/01/27	13	16:10:17	16:27:06	06:01:00	19:54:00	05:33:00	20:22:00	00:16:49	13:53:00	14:49:00	2.02	1.89	###################	####################
CFDS/C-1	S-2016	2016/01/27	14	16:39:08	18:09:35	06:01:00	19:54:00	05:33:00	20:22:00	01:30:27	13:53:00	14:49:00	10.86	10.17	###################	####################
CFDS/C-1	S-2016	2016/01/27	15	18:40:27	19:35:10	06:01:00	19:54:00	05:33:00	20:22:00	00:54:43	13:53:00	14:49:00	6.57	6.15	###################	####################
CFDS/C-1	S-2016	2016/01/28	1	07:57:01	07:57:03	06:02:00	19:54:00	05:34:00	20:21:00	00:00:02	13:52:00	14:47:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/01/28	2	08:37:03	08:37:05	06:02:00	19:54:00	05:34:00	20:21:00	00:00:02	13:52:00	14:47:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/01/28	3	08:58:21	09:14:21	06:02:00	19:54:00	05:34:00	20:21:00	00:16:00	13:52:00	14:47:00	1.92	1.80	###################	####################
CFDS/C-1	S-2016	2016/01/28	4	10:21:38	10:39:23	06:02:00	19:54:00	05:34:00	20:21:00	00:17:45	13:52:00	14:47:00	2.13	2.00	###################	####################
CFDS/C-1	S-2016	2016/01/28	5	10:51:57	11:11:40	06:02:00	19:54:00	05:34:00	20:21:00	00:19:43	13:52:00	14:47:00	2.37	2.22	###################	####################
CFDS/C-1	S-2016	2016/01/28	6	11:25:55	12:08:35	06:02:00	19:54:00	05:34:00	20:21:00	00:42:40	13:52:00	14:47:00	5.13	4.81	###################	####################
CFDS/C-1	S-2016	2016/01/28	7	12:47:25	13:43:18	06:02:00	19:54:00	05:34:00	20:21:00	00:55:53	13:52:00	14:47:00	6.72	6.30	###################	####################
CFDS/C-1	S-2016	2016/01/28	8	13:57:58	14:28:36	06:02:00	19:54:00	05:34:00	20:21:00	00:30:38	13:52:00	14:47:00	3.68	3.45	###################	####################
CFDS/C-1	S-2016	2016/01/28	9	15:17:15	15:17:17	06:02:00	19:54:00	05:34:00	20:21:00	00:00:02	13:52:00	14:47:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/01/28	10	15:53:26	15:53:28	06:02:00	19:54:00	05:34:00	20:21:00	00:00:02	13:52:00	14:47:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/01/28	11	16:45:06	18:50:44	06:02:00	19:54:00	05:34:00	20:21:00	02:05:38	13:52:00	14:47:00	15.1	14.16	###################	####################
CFDS/C-1	S-2016	2016/01/29	1	08:33:39	09:21:34	06:03:00	19:53:00	05:35:00	20:20:00	00:47:55	13:50:00	14:45:00	5.77	5.41	###################	####################
CFDS/C-1	S-2016	2016/01/29	2	11:07:21	11:12:02	06:03:00	19:53:00	05:35:00	20:20:00	00:04:41	13:50:00	14:45:00	0.56	0.53	###################	####################
CFDS/C-1	S-2016	2016/01/29	3	11:59:35	11:59:37	06:03:00	19:53:00	05:35:00	20:20:00	00:00:02	13:50:00	14:45:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/01/29	4	12:10:22	12:26:23	06:03:00	19:53:00	05:35:00	20:20:00	00:16:01	13:50:00	14:45:00	1.93	1.81	###################	####################
CFDS/C-1	S-2016	2016/01/29	5	12:49:11	12:58:14	06:03:00	19:53:00	05:35:00	20:20:00	00:09:03	13:50:00	14:45:00	1.09	1.02	###################	####################
CFDS/C-1	S-2016	2016/01/29	6	17:07:37	17:09:34	06:03:00	19:53:00	05:35:00	20:20:00	00:01:57	13:50:00	14:45:00	0.23	0.22	###################	####################
CFDS/C-1	S-2016	2016/01/29	7	17:21:13	17:21:15	06:03:00	19:53:00	05:35:00	20:20:00	00:00:02	13:50:00	14:45:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/01/29	8	17:44:57	17:44:58	06:03:00	19:53:00	05:35:00	20:20:00	00:00:01	13:50:00	14:45:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/01/29	9	19:20:14	19:20:16	06:03:00	19:53:00	05:35:00	20:20:00	00:00:02	13:50:00	14:45:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/01/30	1	07:17:32	07:24:40	06:04:00	19:52:00	05:37:00	20:20:00	00:07:08	13:48:00	14:43:00	0.86	0.81	###################	####################
CFDS/C-1	S-2016	2016/01/30	2	10:26:20	10:26:22	06:04:00	19:52:00	05:37:00	20:20:00	00:00:02	13:48:00	14:43:00	0	0.00	###################	####################

CFDS/C-1	S-2016	2016/01/30	3	10:39:03	10:39:05	06:04:00	19:52:00	05:37:00	20:20:00	00:00:02	13:48:00	14:43:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/01/30	4	10:52:44	10:52:46	06:04:00	19:52:00	05:37:00	20:20:00	00:00:02	13:48:00	14:43:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/01/30	5	11:16:06	11:16:07	06:04:00	19:52:00	05:37:00	20:20:00	00:00:01	13:48:00	14:43:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/01/30	6	14:58:37	14:58:39	06:04:00	19:52:00	05:37:00	20:20:00	00:00:02	13:48:00	14:43:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/01/30	7	15:39:38	15:39:40	06:04:00	19:52:00	05:37:00	20:20:00	00:00:02	13:48:00	14:43:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/01/30	8	16:16:50	16:16:52	06:04:00	19:52:00	05:37:00	20:20:00	00:00:02	13:48:00	14:43:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/01/30	9	17:25:29	17:25:30	06:04:00	19:52:00	05:37:00	20:20:00	00:00:01	13:48:00	14:43:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/01/30	10	18:54:23	18:54:25	06:04:00	19:52:00	05:37:00	20:20:00	00:00:02	13:48:00	14:43:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/01/31	1	10:00:50	10:20:56	06:05:00	19:52:00	05:38:00	20:19:00	00:20:06	13:47:00	14:41:00	2.43	2.28	###################	####################
CFDS/C-1	S-2016	2016/01/31	2	10:44:26	10:56:11	06:05:00	19:52:00	05:38:00	20:19:00	00:11:45	13:47:00	14:41:00	1.42	1.33	###################	####################
CFDS/C-1	S-2016	2016/01/31	3	11:09:29	11:14:53	06:05:00	19:52:00	05:38:00	20:19:00	00:05:24	13:47:00	14:41:00	0.65	0.61	###################	####################
CFDS/C-1	S-2016	2016/01/31	4	11:50:43	11:50:44	06:05:00	19:52:00	05:38:00	20:19:00	00:00:01	13:47:00	14:41:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/01/31	5	13:59:41	13:59:43	06:05:00	19:52:00	05:38:00	20:19:00	00:00:02	13:47:00	14:41:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/01/31	6	14:41:53	14:43:42	06:05:00	19:52:00	05:38:00	20:19:00	00:01:49	13:47:00	14:41:00	0.22	0.21	###################	####################
CFDS/C-1	S-2016	2016/01/31	7	17:10:41	17:10:43	06:05:00	19:52:00	05:38:00	20:19:00	00:00:02	13:47:00	14:41:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/02/01	1	06:40:24	06:43:13	06:06:00	19:51:00	05:39:00	20:18:00	00:02:49	13:45:00	14:39:00	0.34	0.32	###################	####################
CFDS/C-1	S-2016	2016/02/01	2	07:27:26	07:37:54	06:06:00	19:51:00	05:39:00	20:18:00	00:10:28	13:45:00	14:39:00	1.27	1.19	###################	####################
CFDS/C-1	S-2016	2016/02/01	3	10:06:15	10:06:17	06:06:00	19:51:00	05:39:00	20:18:00	00:00:02	13:45:00	14:39:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/02/01	4	10:46:44	10:48:51	06:06:00	19:51:00	05:39:00	20:18:00	00:02:07	13:45:00	14:39:00	0.26	0.24	###################	####################
CFDS/C-1	S-2016	2016/02/01	5	11:05:47	11:05:49	06:06:00	19:51:00	05:39:00	20:18:00	00:00:02	13:45:00	14:39:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/02/01	6	11:16:19	11:22:30	06:06:00	19:51:00	05:39:00	20:18:00	00:06:11	13:45:00	14:39:00	0.75	0.70	###################	####################
CFDS/C-1	S-2016	2016/02/01	7	11:46:43	11:49:18	06:06:00	19:51:00	05:39:00	20:18:00	00:02:35	13:45:00	14:39:00	0.31	0.29	###################	####################
CFDS/C-1	S-2016	2016/02/01	8	13:28:23	13:32:42	06:06:00	19:51:00	05:39:00	20:18:00	00:04:19	13:45:00	14:39:00	0.52	0.49	###################	####################
CFDS/C-1	S-2016	2016/02/01	9	14:01:00	14:03:22	06:06:00	19:51:00	05:39:00	20:18:00	00:02:22	13:45:00	14:39:00	0.29	0.27	###################	####################
CFDS/C-1	S-2016	2016/02/01	10	14:16:25	14:26:29	06:06:00	19:51:00	05:39:00	20:18:00	00:10:04	13:45:00	14:39:00	1.22	1.15	###################	####################
CFDS/C-1	S-2016	2016/02/01	11	14:34:56	14:34:58	06:06:00	19:51:00	05:39:00	20:18:00	00:00:02	13:45:00	14:39:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/02/01	12	15:37:34	15:40:38	06:06:00	19:51:00	05:39:00	20:18:00	00:03:04	13:45:00	14:39:00	0.37	0.35	###################	####################
CFDS/C-1	S-2016	2016/02/01	13	15:55:33	16:00:37	06:06:00	19:51:00	05:39:00	20:18:00	00:05:04	13:45:00	14:39:00	0.61	0.58	###################	####################
CFDS/C-1	S-2016	2016/02/01	14	17:02:08	17:04:54	06:06:00	19:51:00	05:39:00	20:18:00	00:02:46	13:45:00	14:39:00	0.34	0.31	###################	####################
CFDS/C-1	S-2016	2016/02/01	15	18:40:44	18:50:39	06:06:00	19:51:00	05:39:00	20:18:00	00:09:55	13:45:00	14:39:00	1.2	1.13	###################	####################
CFDS/C-1	S-2016	2016/02/02	1	07:36:23	07:39:07	06:07:00	19:50:00	05:40:00	20:17:00	00:02:44	13:43:00	14:37:00	0.33	0.31	###################	####################
CFDS/C-1	S-2016	2016/02/02	2	15:48:20	15:48:22	06:07:00	19:50:00	05:40:00	20:17:00	00:00:02	13:43:00	14:37:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/02/02	3	16:02:12	16:02:14	06:07:00	19:50:00	05:40:00	20:17:00	00:00:02	13:43:00	14:37:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/02/02	4	19:19:15	19:19:17	06:07:00	19:50:00	05:40:00	20:17:00	00:00:02	13:43:00	14:37:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/02/03	1	07:13:18	07:20:45	06:08:00	19:49:00	05:41:00	20:16:00	00:07:27	13:41:00	14:35:00	0.91	0.85	###################	####################
CFDS/C-1	S-2016	2016/02/03	2	11:29:07	11:29:09	06:08:00	19:49:00	05:41:00	20:16:00	00:00:02	13:41:00	14:35:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/02/03	3	12:42:57	12:42:59	06:08:00	19:49:00	05:41:00	20:16:00	00:00:02	13:41:00	14:35:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/02/03	4	12:55:47	13:10:38	06:08:00	19:49:00	05:41:00	20:16:00	00:14:51	13:41:00	14:35:00	1.81	1.70	###################	####################
CFDS/C-1	S-2016	2016/02/03	5	13:20:53	13:41:49	06:08:00	19:49:00	05:41:00	20:16:00	00:20:56	13:41:00	14:35:00	2.55	2.39	###################	####################
CFDS/C-1	S-2016	2016/02/03	6	14:00:17	14:00:19	06:08:00	19:49:00	05:41:00	20:16:00	00:00:02	13:41:00	14:35:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/02/04	1	10:40:19	10:49:24	06:09:00	19:49:00	05:42:00	20:15:00	00:09:05	13:40:00	14:33:00	1.11	1.04	###################	####################
CFDS/C-1	S-2016	2016/02/04	2	14:07:45	14:11:31	06:09:00	19:49:00	05:42:00	20:15:00	00:03:46	13:40:00	14:33:00	0.46	0.43	###################	####################
CFDS/C-1	S-2016	2016/02/04	3	15:06:53	15:13:05	06:09:00	19:49:00	05:42:00	20:15:00	00:06:12	13:40:00	14:33:00	0.76	0.71	###################	####################
CFDS/C-1	S-2016	2016/02/05	1	07:42:27	07:55:13	06:10:00	19:48:00	05:43:00	20:15:00	00:12:46	13:38:00	14:32:00	1.56	1.46	###################	####################
CFDS/C-1	S-2016	2016/02/05	2	13:14:19	13:17:05	06:10:00	19:48:00	05:43:00	20:15:00	00:02:46	13:38:00	14:32:00	0.34	0.32	###################	####################
CFDS/C-1	S-2016	2016/02/06	1	15:25:44	15:40:01	06:11:00	19:47:00	05:44:00	20:14:00	00:14:17	13:36:00	14:30:00	1.75	1.64	###################	####################
CFDS/C-1	S-2016	2016/02/07	1	10:31:57	10:31:59	06:12:00	19:46:00	05:45:00	20:13:00	00:00:02	13:34:00	14:28:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/02/08	1	12:05:27	12:12:15	06:13:00	19:45:00	05:46:00	20:12:00	00:06:48	13:32:00	14:26:00	0.84	0.79	###################	####################
CFDS/C-1	S-2016	2016/02/08	2	12:22:35	12:22:37	06:13:00	19:45:00	05:46:00	20:12:00	00:00:02	13:32:00	14:26:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/02/08	3	13:03:38	13:03:40	06:13:00	19:45:00	05:46:00	20:12:00	00:00:02	13:32:00	14:26:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/02/08	4	14:52:52	14:52:54	06:13:00	19:45:00	05:46:00	20:12:00	00:00:02	13:32:00	14:26:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/02/08	5	15:36:21	15:42:35	06:13:00	19:45:00	05:46:00	20:12:00	00:06:14	13:32:00	14:26:00	0.77	0.72	###################	####################
CFDS/C-1	S-2016	2016/02/08	6	16:32:23	16:41:06	06:13:00	19:45:00	05:46:00	20:12:00	00:08:43	13:32:00	14:26:00	1.07	1.01	###################	####################
CFDS/C-1	S-2016	2016/02/08	7	17:08:28	17:08:30	06:13:00	19:45:00	05:46:00	20:12:00	00:00:02	13:32:00	14:26:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/02/08	8	18:26:01	18:44:20	06:13:00	19:45:00	05:46:00	20:12:00	00:18:19	13:32:00	14:26:00	2.26	2.12	###################	####################
CFDS/C-1	S-2016	2016/02/08	9	18:54:41	18:54:43	06:13:00	19:45:00	05:46:00	20:12:00	00:00:02	13:32:00	14:26:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/02/09	1	10:37:38	10:37:40	06:14:00	19:44:00	05:47:00	20:11:00	00:00:02	13:30:00	14:24:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/02/10	1	08:51:02	09:05:34	06:15:00	19:43:00	05:48:00	20:10:00	00:14:32	13:30:00	14:22:00	1.79	1.69	###################	####################
CFDS/C-1	S-2016	2016/02/10	2	10:14:45	10:14:46	06:15:00	19:43:00	05:48:00	20:10:00	00:00:01	13:30:00	14:22:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/02/10	3	12:23:23	12:26:52	06:15:00	19:43:00	05:48:00	20:10:00	00:03:29	13:30:00	14:22:00	0.43	0.40	###################	####################
CFDS/C-1	S-2016	2016/02/10	4	15:01:30	15:03:47	06:15:00	19:43:00	05:48:00	20:10:00	00:02:17	13:30:00	14:22:00	0.28	0.26	###################	####################
CFDS/C-1	S-2016	2016/02/10	5	18:05:11	18:10:06	06:15:00	19:43:00	05:48:00	20:10:00	00:04:55	13:30:00	14:22:00	0.61	0.57	###################	####################
CFDS/C-1	S-2016	2016/02/11	1	10:15:08	10:15:10	06:16:00	19:42:00	05:49:00	20:09:00	00:00:02	13:26:00	14:20:00	0	0.00	###################	####################

CFDS/C-1	S-2016	2016/02/11	2	13:09:19	13:13:18	06:16:00	19:42:00	05:49:00	20:09:00	00:03:59	13:26:00	14:20:00	0.49	0.46	###################	####################
CFDS/C-1	S-2016	2016/02/11	3	17:26:46	17:26:48	06:16:00	19:42:00	05:49:00	20:09:00	00:00:02	13:26:00	14:20:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/02/11	4	19:11:22	19:18:04	06:16:00	19:42:00	05:49:00	20:09:00	00:06:42	13:26:00	14:20:00	0.83	0.78	###################	####################
CFDS/C-1	S-2016	2016/02/12	1	08:16:57	08:24:39	06:17:00	19:41:00	05:50:00	20:08:00	00:07:42	13:24:00	14:18:00	0.96	0.90	###################	####################
CFDS/C-1	S-2016	2016/02/12	2	08:47:03	08:49:13	06:17:00	19:41:00	05:50:00	20:08:00	00:02:10	13:24:00	14:18:00	0.27	0.25	###################	####################
CFDS/C-1	S-2016	2016/02/12	3	10:50:53	10:50:55	06:17:00	19:41:00	05:50:00	20:08:00	00:00:02	13:24:00	14:18:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/02/12	4	19:07:26	19:21:19	06:17:00	19:41:00	05:50:00	20:08:00	00:13:53	13:24:00	14:18:00	1.73	1.62	###################	####################
CFDS/C-1	S-2016	2016/02/13	1	12:11:53	12:23:40	06:18:00	19:40:00	05:51:00	20:07:00	00:11:47	13:22:00	14:16:00	1.47	1.38	###################	####################
CFDS/C-1	S-2016	2016/02/13	2	12:40:42	12:40:44	06:18:00	19:40:00	05:51:00	20:07:00	00:00:02	13:22:00	14:16:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/02/13	3	14:49:33	15:11:52	06:18:00	19:40:00	05:51:00	20:07:00	00:22:19	13:22:00	14:16:00	2.78	2.61	###################	####################
CFDS/C-1	S-2016	2016/02/13	4	15:31:41	15:44:02	06:18:00	19:40:00	05:51:00	20:07:00	00:12:21	13:22:00	14:16:00	1.54	1.44	###################	####################
CFDS/C-1	S-2016	2016/02/13	5	17:53:17	17:53:19	06:18:00	19:40:00	05:51:00	20:07:00	00:00:02	13:22:00	14:16:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/02/14	1	10:49:28	10:49:30	06:19:00	19:39:00	05:52:00	20:06:00	00:00:02	13:20:00	14:14:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/02/14	2	15:54:50	15:56:30	06:19:00	19:39:00	05:52:00	20:06:00	00:01:40	13:20:00	14:14:00	0.21	0.20	###################	####################
CFDS/C-1	S-2016	2016/02/14	3	18:02:26	18:30:20	06:19:00	19:39:00	05:52:00	20:06:00	00:27:54	13:20:00	14:14:00	3.49	3.27	###################	####################
CFDS/C-1	S-2016	2016/02/15	1	13:07:50	13:10:15	06:20:00	19:38:00	05:53:00	20:05:00	00:02:25	13:18:00	14:12:00	0.3	0.28	###################	####################
CFDS/C-1	S-2016	2016/02/15	2	17:58:26	18:17:52	06:20:00	19:38:00	05:53:00	20:05:00	00:19:26	13:18:00	14:12:00	2.44	2.28	###################	####################
CFDS/C-1	S-2016	2016/02/16	1	11:04:13	11:10:46	06:21:00	19:37:00	05:54:00	20:03:00	00:06:33	13:16:00	14:09:00	0.82	0.77	###################	####################
CFDS/C-1	S-2016	2016/02/16	2	11:23:23	11:33:27	06:21:00	19:37:00	05:54:00	20:03:00	00:10:04	13:16:00	14:09:00	1.26	1.19	###################	####################
CFDS/C-1	S-2016	2016/02/16	3	15:55:11	15:55:13	06:21:00	19:37:00	05:54:00	20:03:00	00:00:02	13:16:00	14:09:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/02/16	4	16:40:16	16:45:10	06:21:00	19:37:00	05:54:00	20:03:00	00:04:54	13:16:00	14:09:00	0.62	0.58	###################	####################
CFDS/C-1	S-2016	2016/02/17	1	07:01:53	07:07:21	06:22:00	19:36:00	05:55:00	20:02:00	00:05:28	13:14:00	14:07:00	0.69	0.65	###################	####################
CFDS/C-1	S-2016	2016/02/17	2	08:50:08	08:51:50	06:22:00	19:36:00	05:55:00	20:02:00	00:01:42	13:14:00	14:07:00	0.21	0.20	###################	####################
CFDS/C-1	S-2016	2016/02/17	3	09:17:55	09:19:38	06:22:00	19:36:00	05:55:00	20:02:00	00:01:43	13:14:00	14:07:00	0.22	0.20	###################	####################
CFDS/C-1	S-2016	2016/02/17	4	15:09:55	15:09:57	06:22:00	19:36:00	05:55:00	20:02:00	00:00:02	13:14:00	14:07:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/02/18	1	08:33:15	08:33:17	06:22:00	19:35:00	05:56:00	20:01:00	00:00:02	13:13:00	14:05:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/02/18	2	09:50:29	09:50:30	06:22:00	19:35:00	05:56:00	20:01:00	00:00:01	13:13:00	14:05:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/02/18	3	11:17:45	11:17:47	06:22:00	19:35:00	05:56:00	20:01:00	00:00:02	13:13:00	14:05:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/02/18	4	15:28:41	15:28:43	06:22:00	19:35:00	05:56:00	20:01:00	00:00:02	13:13:00	14:05:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/02/18	5	16:27:34	16:27:36	06:22:00	19:35:00	05:56:00	20:01:00	00:00:02	13:13:00	14:05:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/02/19	1	08:10:47	08:20:41	06:23:00	19:34:00	05:57:00	20:00:00	00:09:54	13:11:00	14:03:00	1.25	1.17	###################	####################
CFDS/C-1	S-2016	2016/02/19	2	09:45:12	09:45:14	06:23:00	19:34:00	05:57:00	20:00:00	00:00:02	13:11:00	14:03:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/02/19	3	11:43:30	11:43:32	06:23:00	19:34:00	05:57:00	20:00:00	00:00:02	13:11:00	14:03:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/02/19	4	12:03:24	12:05:56	06:23:00	19:34:00	05:57:00	20:00:00	00:02:32	13:11:00	14:03:00	0.32	0.30	###################	####################
CFDS/C-1	S-2016	2016/02/19	5	12:48:29	12:50:46	06:23:00	19:34:00	05:57:00	20:00:00	00:02:17	13:11:00	14:03:00	0.29	0.27	###################	####################
CFDS/C-1	S-2016	2016/02/19	6	14:56:07	15:05:50	06:23:00	19:34:00	05:57:00	20:00:00	00:09:43	13:11:00	14:03:00	1.23	1.15	###################	####################
CFDS/C-1	S-2016	2016/02/19	7	16:10:27	16:10:29	06:23:00	19:34:00	05:57:00	20:00:00	00:00:02	13:11:00	14:03:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/02/20	1	07:07:22	07:07:24	06:24:00	19:33:00	05:58:00	19:59:00	00:00:02	13:09:00	14:01:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/02/20	2	08:14:04	08:19:42	06:24:00	19:33:00	05:58:00	19:59:00	00:05:38	13:09:00	14:01:00	0.71	0.67	###################	####################
CFDS/C-1	S-2016	2016/02/20	3	08:36:52	08:36:53	06:24:00	19:33:00	05:58:00	19:59:00	00:00:01	13:09:00	14:01:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/02/20	4	08:52:39	09:03:12	06:24:00	19:33:00	05:58:00	19:59:00	00:10:33	13:09:00	14:01:00	1.34	1.25	###################	####################
CFDS/C-1	S-2016	2016/02/20	5	09:17:53	09:17:55	06:24:00	19:33:00	05:58:00	19:59:00	00:00:02	13:09:00	14:01:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/02/20	6	11:14:06	11:18:28	06:24:00	19:33:00	05:58:00	19:59:00	00:04:22	13:09:00	14:01:00	0.55	0.52	###################	####################
CFDS/C-1	S-2016	2016/02/20	7	13:14:26	13:14:28	06:24:00	19:33:00	05:58:00	19:59:00	00:00:02	13:09:00	14:01:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/02/20	8	16:34:02	16:37:59	06:24:00	19:33:00	05:58:00	19:59:00	00:03:57	13:09:00	14:01:00	0.5	0.47	###################	####################
CFDS/C-1	S-2016	2016/02/21	1	14:29:12	14:31:06	06:25:00	19:32:00	05:59:00	19:58:00	00:01:54	13:07:00	13:59:00	0.24	0.23	###################	####################
CFDS/C-1	S-2016	2016/02/22	1	07:23:57	07:32:25	06:26:00	19:31:00	06:00:00	19:56:00	00:08:28	13:05:00	13:56:00	1.08	1.01	###################	####################
CFDS/C-1	S-2016	2016/02/22	2	11:21:20	11:24:54	06:26:00	19:31:00	06:00:00	19:56:00	00:03:34	13:05:00	13:56:00	0.45	0.43	###################	####################
CFDS/C-1	S-2016	2016/02/22	3	12:01:30	12:15:15	06:26:00	19:31:00	06:00:00	19:56:00	00:13:45	13:05:00	13:56:00	1.75	1.64	###################	####################
CFDS/C-1	S-2016	2016/02/22	4	16:05:12	16:07:03	06:26:00	19:31:00	06:00:00	19:56:00	00:01:51	13:05:00	13:56:00	0.24	0.22	###################	####################
CFDS/C-1	S-2016	2016/02/22	5	16:43:58	16:44:00	06:26:00	19:31:00	06:00:00	19:56:00	00:00:02	13:05:00	13:56:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/02/23	1	15:56:55	16:01:16	06:27:00	19:29:00	06:01:00	19:55:00	00:04:21	13:02:00	13:54:00	0.56	0.52	###################	####################
CFDS/C-1	S-2016	2016/02/23	2	17:04:29	17:12:26	06:27:00	19:29:00	06:01:00	19:55:00	00:07:57	13:02:00	13:54:00	1.02	0.95	###################	####################
CFDS/C-1	S-2016	2016/02/24	1	11:11:06	11:11:08	06:28:00	19:28:00	06:02:00	19:54:00	00:00:02	13:00:00	13:52:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/02/24	2	15:52:36	15:52:38	06:28:00	19:28:00	06:02:00	19:54:00	00:00:02	13:00:00	13:52:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/02/24	3	17:06:43	17:08:27	06:28:00	19:28:00	06:02:00	19:54:00	00:01:44	13:00:00	13:52:00	0.22	0.21	###################	####################
CFDS/C-1	S-2016	2016/02/24	4	17:22:55	17:24:38	06:28:00	19:28:00	06:02:00	19:54:00	00:01:43	13:00:00	13:52:00	0.22	0.21	###################	####################
CFDS/C-1	S-2016	2016/02/25	1	12:04:24	12:07:17	06:29:00	19:27:00	06:03:00	19:53:00	00:02:53	12:58:00	13:50:00	0.37	0.35	###################	####################
CFDS/C-1	S-2016	2016/02/25	2	14:07:22	14:07:23	06:29:00	19:27:00	06:03:00	19:53:00	00:00:01	12:58:00	13:50:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/02/25	3	14:56:39	14:56:40	06:29:00	19:27:00	06:03:00	19:53:00	00:00:01	12:58:00	13:50:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/02/26	1	06:47:54	06:49:35	06:30:00	19:26:00	06:04:00	19:51:00	00:01:41	12:56:00	13:47:00	0.22	0.20	###################	####################
CFDS/C-1	S-2016	2016/02/26	2	11:23:03	11:23:05	06:30:00	19:26:00	06:04:00	19:51:00	00:00:02	12:56:00	13:47:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/02/26	3	11:50:43	11:50:45	06:30:00	19:26:00	06:04:00	19:51:00	00:00:02	12:56:00	13:47:00	0	0.00	###################	####################

CFDS/C-1	S-2016	2016/02/26	4	12:01:27	12:10:56	06:30:00	19:26:00	06:04:00	19:51:00	00:09:29	12:56:00	13:47:00	1.22	1.15	###################	####################
CFDS/C-1	S-2016	2016/02/26	5	12:28:40	12:28:42	06:30:00	19:26:00	06:04:00	19:51:00	00:00:02	12:56:00	13:47:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/02/26	6	14:54:13	14:58:34	06:30:00	19:26:00	06:04:00	19:51:00	00:04:21	12:56:00	13:47:00	0.56	0.53	###################	####################
CFDS/C-1	S-2016	2016/02/27	1	07:59:28	07:59:30	06:31:00	19:25:00	06:05:00	19:50:00	00:00:02	12:54:00	13:45:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/02/27	2	08:12:05	08:15:17	06:31:00	19:25:00	06:05:00	19:50:00	00:03:12	12:54:00	13:45:00	0.41	0.39	###################	####################
CFDS/C-1	S-2016	2016/02/27	3	10:58:00	10:58:01	06:31:00	19:25:00	06:05:00	19:50:00	00:00:01	12:54:00	13:45:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/02/27	4	11:15:44	11:28:37	06:31:00	19:25:00	06:05:00	19:50:00	00:12:53	12:54:00	13:45:00	1.66	1.56	###################	####################
CFDS/C-1	S-2016	2016/02/27	5	14:00:33	14:02:55	06:31:00	19:25:00	06:05:00	19:50:00	00:02:22	12:54:00	13:45:00	0.31	0.29	###################	####################
CFDS/C-1	S-2016	2016/02/27	6	14:50:35	15:02:48	06:31:00	19:25:00	06:05:00	19:50:00	00:12:13	12:54:00	13:45:00	1.58	1.48	###################	####################
CFDS/C-1	S-2016	2016/02/27	7	15:36:30	15:36:32	06:31:00	19:25:00	06:05:00	19:50:00	00:00:02	12:54:00	13:45:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/02/28	1	08:36:07	08:36:09	06:31:00	19:23:00	06:06:00	19:49:00	00:00:02	12:52:00	13:43:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/02/28	2	10:36:19	10:38:04	06:31:00	19:23:00	06:06:00	19:49:00	00:01:45	12:52:00	13:43:00	0.23	0.21	###################	####################
CFDS/C-1	S-2016	2016/02/28	3	11:54:56	11:54:58	06:31:00	19:23:00	06:06:00	19:49:00	00:00:02	12:52:00	13:43:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/02/29	1	12:35:19	12:43:10	06:32:00	19:22:00	06:07:00	19:48:00	00:07:51	12:50:00	13:41:00	1.02	0.96	###################	####################
CFDS/C-1	S-2016	2016/02/29	2	13:08:44	13:11:06	06:32:00	19:22:00	06:07:00	19:48:00	00:02:22	12:50:00	13:41:00	0.31	0.29	###################	####################
CFDS/C-1	S-2016	2016/03/01	1	12:14:15	12:14:17	06:33:00	19:21:00	06:08:00	19:46:00	00:00:02	12:48:00	13:38:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/03/01	2	14:25:07	14:25:08	06:33:00	19:21:00	06:08:00	19:46:00	00:00:01	12:48:00	13:38:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/03/01	3	15:44:21	15:47:45	06:33:00	19:21:00	06:08:00	19:46:00	00:03:24	12:48:00	13:38:00	0.44	0.42	###################	####################
CFDS/C-1	S-2016	2016/03/02	1	13:14:54	13:14:56	06:34:00	19:20:00	06:09:00	19:45:00	00:00:02	12:46:00	13:36:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/03/03	1	14:55:39	14:57:18	06:35:00	19:18:00	06:09:00	19:44:00	00:01:39	12:43:00	13:35:00	0.22	0.20	###################	####################
CFDS/C-1	S-2016	2016/03/04	1	09:07:02	09:07:04	06:36:00	19:17:00	06:10:00	19:42:00	00:00:02	12:41:00	13:32:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/03/05	0	00:00:00	00:00:00	06:37:00	19:16:00	06:11:00	19:41:00	00:00:00	12:39:00	13:30:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/03/06	1	09:54:29	09:54:31	06:37:00	19:15:00	06:12:00	19:40:00	00:00:02	12:38:00	13:28:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/03/06	2	13:56:29	13:56:31	06:37:00	19:15:00	06:12:00	19:40:00	00:00:02	12:38:00	13:28:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/03/07	1	12:11:02	12:11:04	06:38:00	19:13:00	06:13:00	19:38:00	00:00:02	12:35:00	13:25:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/03/07	2	14:41:42	14:45:38	06:38:00	19:13:00	06:13:00	19:38:00	00:03:56	12:35:00	13:25:00	0.52	0.49	###################	####################
CFDS/C-1	S-2016	2016/03/08	1	07:04:31	07:04:33	06:39:00	19:12:00	06:14:00	19:37:00	00:00:02	12:33:00	13:23:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/03/09	1	11:52:29	11:52:31	06:40:00	19:11:00	06:15:00	19:36:00	00:00:02	12:31:00	13:21:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/03/09	2	13:37:48	13:37:50	06:40:00	19:11:00	06:15:00	19:36:00	00:00:02	12:31:00	13:21:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/03/10	0	00:00:00	00:00:00	06:41:00	19:09:00	06:15:00	19:34:00	00:00:00	12:28:00	13:19:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/03/11	1	15:23:19	15:23:21	06:41:00	19:08:00	06:16:00	19:33:00	00:00:02	12:27:00	13:17:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/03/11	2	15:42:02	15:42:04	06:41:00	19:08:00	06:16:00	19:33:00	00:00:02	12:27:00	13:17:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/03/12	0	00:00:00	00:00:00	06:42:00	19:07:00	06:17:00	19:32:00	00:00:00	12:25:00	13:15:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/03/13	0	00:00:00	00:00:00	06:43:00	19:05:00	06:18:00	19:30:00	00:00:00	12:22:00	13:12:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/03/14	0	00:00:00	00:00:00	06:44:00	19:04:00	06:19:00	19:29:00	00:00:00	12:20:00	13:10:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/03/15	1	09:23:34	09:23:36	06:45:00	19:03:00	06:20:00	19:28:00	00:00:02	12:18:00	13:08:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/03/16	1	15:14:48	15:14:50	06:45:00	19:01:00	06:20:00	19:26:00	00:00:02	12:16:00	13:06:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/03/17	0	00:00:00	00:00:00	06:46:00	19:00:00	06:21:00	19:25:00	00:00:00	12:14:00	13:04:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/03/18	1	07:24:36	07:28:06	06:47:00	18:59:00	06:22:00	19:23:00	00:03:30	12:12:00	13:01:00	0.48	0.45	###################	####################
CFDS/C-1	S-2016	2016/03/19	1	10:19:07	10:19:09	06:48:00	18:57:00	06:23:00	19:22:00	00:00:02	12:09:00	12:59:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/03/19	2	15:31:14	15:33:12	06:48:00	18:57:00	06:23:00	19:22:00	00:01:58	12:09:00	12:59:00	0.27	0.25	###################	####################
CFDS/C-1	S-2016	2016/03/20	1	09:43:35	09:43:37	06:48:00	18:56:00	06:24:00	19:21:00	00:00:02	12:08:00	12:57:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/03/20	2	14:24:58	14:25:00	06:48:00	18:56:00	06:24:00	19:21:00	00:00:02	12:08:00	12:57:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/03/21	1	09:15:08	09:15:10	06:49:00	18:54:00	06:24:00	19:19:00	00:00:02	12:05:00	12:55:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/03/22	0	00:00:00	00:00:00	06:50:00	18:53:00	06:25:00	19:18:00	00:00:00	12:03:00	12:53:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/03/23	1	13:25:28	13:25:30	06:51:00	18:52:00	06:26:00	19:17:00	00:00:02	12:01:00	12:51:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/03/24	0	00:00:00	00:00:00	06:52:00	18:50:00	06:27:00	19:15:00	00:00:00	11:58:00	12:48:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/03/25	0	00:00:00	00:00:00	06:52:00	18:49:00	06:27:00	19:14:00	00:00:00	11:57:00	12:47:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/03/26	0	00:00:00	00:00:00	06:53:00	18:48:00	06:28:00	19:13:00	00:00:00	11:55:00	12:45:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/03/27	0	00:00:00	00:00:00	06:54:00	18:46:00	06:29:00	19:11:00	00:00:00	11:52:00	12:42:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/03/28	0	00:00:00	00:00:00	06:55:00	18:45:00	06:30:00	19:10:00	00:00:00	12:50:00	12:40:00	0	0.00	###################	####################
CFDS/C-1	S-2016	2016/03/29	1	16:42:34	16:42:36	06:55:00	18:44:00	06:30:00	19:09:00	00:00:02	12:49:00	12:39:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/01/13	1	11:34:13	11:39:11	05:47:00	20:00:00	05:19:00	20:28:00	00:04:58	14:13:00	15:09:00	0.58	0.55	###################	####################
CFDS/C-2	S-2016	2016/01/13	2	12:52:20	13:29:25	05:47:00	20:00:00	05:19:00	20:28:00	00:37:05	14:13:00	15:09:00	4.35	4.08	###################	####################
CFDS/C-2	S-2016	2016/01/13	3	13:52:24	14:39:00	05:47:00	20:00:00	05:19:00	20:28:00	00:46:36	14:13:00	15:09:00	5.46	5.13	###################	####################
CFDS/C-2	S-2016	2016/01/13	4	17:02:46	17:02:46	05:47:00	20:00:00	05:19:00	20:28:00	00:00:00	14:13:00	15:09:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/01/13	5	17:18:23	17:40:48	05:47:00	20:00:00	05:19:00	20:28:00	00:22:25	14:13:00	15:09:00	2.63	2.47	###################	####################
CFDS/C-2	S-2016	2016/01/13	6	18:01:17	18:34:20	05:47:00	20:00:00	05:19:00	20:28:00	00:33:03	14:13:00	15:09:00	3.87	3.64	###################	####################
CFDS/C-2	S-2016	2016/01/13	7	18:50:31	19:42:28	05:47:00	20:00:00	05:19:00	20:28:00	00:51:57	14:13:00	15:09:00	6.09	5.72	###################	####################
CFDS/C-2	S-2016	2016/01/14	1	07:04:05	07:28:22	05:48:00	19:59:00	05:20:00	20:28:00	00:24:17	14:11:00	15:08:00	2.85	2.67	###################	####################
CFDS/C-2	S-2016	2016/01/14	2	08:22:23	08:44:03	05:48:00	19:59:00	05:20:00	20:28:00	00:21:40	14:11:00	15:08:00	2.55	2.39	###################	####################
CFDS/C-2	S-2016	2016/01/14	3	09:00:02	09:04:35	05:48:00	19:59:00	05:20:00	20:28:00	00:04:33	14:11:00	15:08:00	0.53	0.50	###################	####################
CFDS/C-2	S-2016	2016/01/14	4	10:10:03	10:13:27	05:48:00	19:59:00	05:20:00	20:28:00	00:03:24	14:11:00	15:08:00	0.4	0.37	###################	####################

CFDS/C-2	S-2016	2016/01/14	5	10:26:35	10:34:50	05:48:00	19:59:00	05:20:00	20:28:00	00:08:15	14:11:00	15:08:00	0.97	0.91	###################	####################
CFDS/C-2	S-2016	2016/01/14	6	10:57:50	11:16:33	05:48:00	19:59:00	05:20:00	20:28:00	00:18:43	14:11:00	15:08:00	2.2	2.06	###################	####################
CFDS/C-2	S-2016	2016/01/14	7	11:29:10	11:48:34	05:48:00	19:59:00	05:20:00	20:28:00	00:19:24	14:11:00	15:08:00	2.28	2.14	###################	####################
CFDS/C-2	S-2016	2016/01/14	8	12:09:17	12:11:40	05:48:00	19:59:00	05:20:00	20:28:00	00:02:23	14:11:00	15:08:00	0.28	0.26	###################	####################
CFDS/C-2	S-2016	2016/01/14	9	12:59:19	13:00:30	05:48:00	19:59:00	05:20:00	20:28:00	00:01:11	14:11:00	15:08:00	0.14	0.13	###################	####################
CFDS/C-2	S-2016	2016/01/14	10	13:11:27	13:20:23	05:48:00	19:59:00	05:20:00	20:28:00	00:08:56	14:11:00	15:08:00	1.05	0.98	###################	####################
CFDS/C-2	S-2016	2016/01/14	11	13:37:01	15:01:46	05:48:00	19:59:00	05:20:00	20:28:00	01:24:45	14:11:00	15:08:00	9.96	9.33	###################	####################
CFDS/C-2	S-2016	2016/01/14	12	15:29:52	17:40:20	05:48:00	19:59:00	05:20:00	20:28:00	02:10:28	14:11:00	15:08:00	15.33	14.37	###################	####################
CFDS/C-2	S-2016	2016/01/14	13	17:50:20	20:21:20	05:48:00	19:59:00	05:20:00	20:28:00	02:31:00	14:11:00	15:08:00	17.74	16.63	###################	####################
CFDS/C-2	S-2016	2016/01/15	1	05:59:02	07:53:54	05:49:00	19:59:00	05:21:00	20:28:00	01:54:52	14:10:00	15:07:00	13.51	12.66	###################	####################
CFDS/C-2	S-2016	2016/01/15	2	08:14:17	08:16:51	05:49:00	19:59:00	05:21:00	20:28:00	00:02:34	14:10:00	15:07:00	0.3	0.28	###################	####################
CFDS/C-2	S-2016	2016/01/15	3	08:33:05	09:20:30	05:49:00	19:59:00	05:21:00	20:28:00	00:47:25	14:10:00	15:07:00	5.58	5.23	###################	####################
CFDS/C-2	S-2016	2016/01/15	4	09:38:13	10:37:20	05:49:00	19:59:00	05:21:00	20:28:00	00:59:07	14:10:00	15:07:00	6.95	6.52	###################	####################
CFDS/C-2	S-2016	2016/01/15	5	12:11:55	12:50:27	05:49:00	19:59:00	05:21:00	20:28:00	00:38:32	14:10:00	15:07:00	4.53	4.25	###################	####################
CFDS/C-2	S-2016	2016/01/15	6	13:25:02	13:46:21	05:49:00	19:59:00	05:21:00	20:28:00	00:21:19	14:10:00	15:07:00	2.51	2.35	###################	####################
CFDS/C-2	S-2016	2016/01/15	7	14:34:29	15:15:50	05:49:00	19:59:00	05:21:00	20:28:00	00:41:21	14:10:00	15:07:00	4.86	4.56	###################	####################
CFDS/C-2	S-2016	2016/01/15	8	15:38:29	16:26:43	05:49:00	19:59:00	05:21:00	20:28:00	00:48:14	14:10:00	15:07:00	5.67	5.32	###################	####################
CFDS/C-2	S-2016	2016/01/15	9	16:54:21	18:11:36	05:49:00	19:59:00	05:21:00	20:28:00	01:17:15	14:10:00	15:07:00	9.09	8.52	###################	####################
CFDS/C-2	S-2016	2016/01/15	10	19:00:25	19:57:24	05:49:00	19:59:00	05:21:00	20:28:00	00:56:59	14:10:00	15:07:00	6.7	6.28	###################	####################
CFDS/C-2	S-2016	2016/01/15	11	20:11:30	20:13:47	05:49:00	19:59:00	05:21:00	20:28:00	00:02:17	14:10:00	15:07:00	0.27	0.25	###################	####################
CFDS/C-2	S-2016	2016/01/16	1	05:34:42	05:37:45	05:50:00	19:59:00	05:22:00	20:27:00	00:03:03	14:09:00	15:05:00	0.36	0.34	###################	####################
CFDS/C-2	S-2016	2016/01/16	2	05:50:37	05:51:46	05:50:00	19:59:00	05:22:00	20:27:00	00:01:09	14:09:00	15:05:00	0.14	0.13	###################	####################
CFDS/C-2	S-2016	2016/01/16	3	06:04:37	06:29:40	05:50:00	19:59:00	05:22:00	20:27:00	00:25:03	14:09:00	15:05:00	2.95	2.77	###################	####################
CFDS/C-2	S-2016	2016/01/16	4	07:09:18	08:36:40	05:50:00	19:59:00	05:22:00	20:27:00	01:27:22	14:09:00	15:05:00	10.29	9.65	###################	####################
CFDS/C-2	S-2016	2016/01/16	5	08:54:16	09:03:25	05:50:00	19:59:00	05:22:00	20:27:00	00:09:09	14:09:00	15:05:00	1.08	1.01	###################	####################
CFDS/C-2	S-2016	2016/01/16	6	09:23:28	09:37:52	05:50:00	19:59:00	05:22:00	20:27:00	00:14:24	14:09:00	15:05:00	1.7	1.59	###################	####################
CFDS/C-2	S-2016	2016/01/16	7	09:53:49	09:56:58	05:50:00	19:59:00	05:22:00	20:27:00	00:03:09	14:09:00	15:05:00	0.37	0.35	###################	####################
CFDS/C-2	S-2016	2016/01/16	8	10:26:53	11:02:41	05:50:00	19:59:00	05:22:00	20:27:00	00:35:48	14:09:00	15:05:00	4.22	3.96	###################	####################
CFDS/C-2	S-2016	2016/01/16	9	12:30:48	12:42:31	05:50:00	19:59:00	05:22:00	20:27:00	00:11:43	14:09:00	15:05:00	1.38	1.29	###################	####################
CFDS/C-2	S-2016	2016/01/16	10	13:18:27	13:39:44	05:50:00	19:59:00	05:22:00	20:27:00	00:21:17	14:09:00	15:05:00	2.51	2.35	###################	####################
CFDS/C-2	S-2016	2016/01/16	11	14:06:48	14:14:20	05:50:00	19:59:00	05:22:00	20:27:00	00:07:32	14:09:00	15:05:00	0.89	0.83	###################	####################
CFDS/C-2	S-2016	2016/01/16	12	14:24:22	14:25:35	05:50:00	19:59:00	05:22:00	20:27:00	00:01:13	14:09:00	15:05:00	0.14	0.13	###################	####################
CFDS/C-2	S-2016	2016/01/16	13	15:17:37	15:17:39	05:50:00	19:59:00	05:22:00	20:27:00	00:00:02	14:09:00	15:05:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/01/16	14	16:09:08	16:09:09	05:50:00	19:59:00	05:22:00	20:27:00	00:00:01	14:09:00	15:05:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/01/16	15	16:33:36	16:47:19	05:50:00	19:59:00	05:22:00	20:27:00	00:13:43	14:09:00	15:05:00	1.62	1.52	###################	####################
CFDS/C-2	S-2016	2016/01/16	16	17:01:59	18:13:38	05:50:00	19:59:00	05:22:00	20:27:00	01:11:39	14:09:00	15:05:00	8.44	7.92	###################	####################
CFDS/C-2	S-2016	2016/01/16	17	18:35:12	19:08:22	05:50:00	19:59:00	05:22:00	20:27:00	00:33:10	14:09:00	15:05:00	3.91	3.66	###################	####################
CFDS/C-2	S-2016	2016/01/16	18	19:25:17	19:29:55	05:50:00	19:59:00	05:22:00	20:27:00	00:04:38	14:09:00	15:05:00	0.55	0.51	###################	####################
CFDS/C-2	S-2016	2016/01/17	1	05:44:11	05:44:13	05:51:00	19:59:00	05:23:00	20:27:00	00:00:02	14:08:00	15:04:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/01/17	2	06:07:04	06:09:45	05:51:00	19:59:00	05:23:00	20:27:00	00:02:41	14:08:00	15:04:00	0.32	0.30	###################	####################
CFDS/C-2	S-2016	2016/01/17	3	06:35:11	06:50:53	05:51:00	19:59:00	05:23:00	20:27:00	00:15:42	14:08:00	15:04:00	1.85	1.74	###################	####################
CFDS/C-2	S-2016	2016/01/17	4	07:32:50	07:33:59	05:51:00	19:59:00	05:23:00	20:27:00	00:01:09	14:08:00	15:04:00	0.14	0.13	###################	####################
CFDS/C-2	S-2016	2016/01/17	5	07:47:35	07:52:10	05:51:00	19:59:00	05:23:00	20:27:00	00:04:35	14:08:00	15:04:00	0.54	0.51	###################	####################
CFDS/C-2	S-2016	2016/01/17	6	08:12:10	08:20:25	05:51:00	19:59:00	05:23:00	20:27:00	00:08:15	14:08:00	15:04:00	0.97	0.91	###################	####################
CFDS/C-2	S-2016	2016/01/17	7	08:56:21	08:56:22	05:51:00	19:59:00	05:23:00	20:27:00	00:00:01	14:08:00	15:04:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/01/17	8	09:12:28	09:14:49	05:51:00	19:59:00	05:23:00	20:27:00	00:02:21	14:08:00	15:04:00	0.28	0.26	###################	####################
CFDS/C-2	S-2016	2016/01/17	9	09:57:04	09:57:06	05:51:00	19:59:00	05:23:00	20:27:00	00:00:02	14:08:00	15:04:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/01/17	10	10:35:45	10:49:42	05:51:00	19:59:00	05:23:00	20:27:00	00:13:57	14:08:00	15:04:00	1.65	1.54	###################	####################
CFDS/C-2	S-2016	2016/01/17	11	11:07:09	11:29:12	05:51:00	19:59:00	05:23:00	20:27:00	00:22:03	14:08:00	15:04:00	2.6	2.44	###################	####################
CFDS/C-2	S-2016	2016/01/17	12	13:09:53	13:30:15	05:51:00	19:59:00	05:23:00	20:27:00	00:20:22	14:08:00	15:04:00	2.4	2.25	###################	####################
CFDS/C-2	S-2016	2016/01/17	13	13:59:45	14:01:14	05:51:00	19:59:00	05:23:00	20:27:00	00:01:29	14:08:00	15:04:00	0.17	0.16	###################	####################
CFDS/C-2	S-2016	2016/01/17	14	14:21:38	14:35:51	05:51:00	19:59:00	05:23:00	20:27:00	00:14:13	14:08:00	15:04:00	1.68	1.57	###################	####################
CFDS/C-2	S-2016	2016/01/17	15	15:17:43	15:20:45	05:51:00	19:59:00	05:23:00	20:27:00	00:03:02	14:08:00	15:04:00	0.36	0.34	###################	####################
CFDS/C-2	S-2016	2016/01/17	16	15:44:49	16:14:46	05:51:00	19:59:00	05:23:00	20:27:00	00:29:57	14:08:00	15:04:00	3.53	3.31	###################	####################
CFDS/C-2	S-2016	2016/01/17	17	16:29:38	16:45:33	05:51:00	19:59:00	05:23:00	20:27:00	00:15:55	14:08:00	15:04:00	1.88	1.76	###################	####################
CFDS/C-2	S-2016	2016/01/17	18	17:11:37	17:31:56	05:51:00	19:59:00	05:23:00	20:27:00	00:20:19	14:08:00	15:04:00	2.4	2.25	###################	####################
CFDS/C-2	S-2016	2016/01/17	19	17:55:57	18:30:30	05:51:00	19:59:00	05:23:00	20:27:00	00:34:33	14:08:00	15:04:00	4.07	3.82	###################	####################
CFDS/C-2	S-2016	2016/01/17	20	19:17:22	19:17:24	05:51:00	19:59:00	05:23:00	20:27:00	00:00:02	14:08:00	15:04:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/01/17	21	19:30:34	19:30:35	05:51:00	19:59:00	05:23:00	20:27:00	00:00:01	14:08:00	15:04:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/01/18	1	06:23:26	06:23:28	05:52:00	19:58:00	05:24:00	20:27:00	00:00:02	14:06:00	15:03:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/01/18	2	06:36:51	06:38:16	05:52:00	19:58:00	05:24:00	20:27:00	00:01:25	14:06:00	15:03:00	0.17	0.16	###################	####################
CFDS/C-2	S-2016	2016/01/18	3	06:55:49	06:59:41	05:52:00	19:58:00	05:24:00	20:27:00	00:03:52	14:06:00	15:03:00	0.46	0.43	###################	####################
CFDS/C-2	S-2016	2016/01/18	4	07:22:14	07:22:15	05:52:00	19:58:00	05:24:00	20:27:00	00:00:01	14:06:00	15:03:00	0	0.00	###################	####################

CFDS/C-2	S-2016	2016/01/18	5	07:47:42	08:16:54	05:52:00	19:58:00	05:24:00	20:27:00	00:29:12	14:06:00	15:03:00	3.45	3.23	###################	####################
CFDS/C-2	S-2016	2016/01/18	6	08:34:37	08:41:46	05:52:00	19:58:00	05:24:00	20:27:00	00:07:09	14:06:00	15:03:00	0.85	0.79	###################	####################
CFDS/C-2	S-2016	2016/01/18	7	11:16:06	11:18:39	05:52:00	19:58:00	05:24:00	20:27:00	00:02:33	14:06:00	15:03:00	0.3	0.28	###################	####################
CFDS/C-2	S-2016	2016/01/18	8	12:37:32	12:52:32	05:52:00	19:58:00	05:24:00	20:27:00	00:15:00	14:06:00	15:03:00	1.77	1.66	###################	####################
CFDS/C-2	S-2016	2016/01/18	9	14:56:06	14:56:07	05:52:00	19:58:00	05:24:00	20:27:00	00:00:01	14:06:00	15:03:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/01/18	10	15:11:35	15:13:52	05:52:00	19:58:00	05:24:00	20:27:00	00:02:17	14:06:00	15:03:00	0.27	0.25	###################	####################
CFDS/C-2	S-2016	2016/01/18	11	16:15:39	16:17:05	05:52:00	19:58:00	05:24:00	20:27:00	00:01:26	14:06:00	15:03:00	0.17	0.16	###################	####################
CFDS/C-2	S-2016	2016/01/18	12	16:28:57	16:56:42	05:52:00	19:58:00	05:24:00	20:27:00	00:27:45	14:06:00	15:03:00	3.28	3.07	###################	####################
CFDS/C-2	S-2016	2016/01/18	13	17:47:19	18:05:21	05:52:00	19:58:00	05:24:00	20:27:00	00:18:02	14:06:00	15:03:00	2.13	2.00	###################	####################
CFDS/C-2	S-2016	2016/01/18	14	18:19:11	18:19:13	05:52:00	19:58:00	05:24:00	20:27:00	00:00:02	14:06:00	15:03:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/01/18	15	18:59:10	19:09:25	05:52:00	19:58:00	05:24:00	20:27:00	00:10:15	14:06:00	15:03:00	1.21	1.14	###################	####################
CFDS/C-2	S-2016	2016/01/18	16	19:31:46	19:35:30	05:52:00	19:58:00	05:24:00	20:27:00	00:03:44	14:06:00	15:03:00	0.44	0.41	###################	####################
CFDS/C-2	S-2016	2016/01/19	1	05:45:50	05:45:52	05:53:00	19:58:00	05:25:00	20:26:00	00:00:02	14:05:00	15:01:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/01/19	2	06:51:50	06:56:18	05:53:00	19:58:00	05:25:00	20:26:00	00:04:28	14:05:00	15:01:00	0.53	0.50	###################	####################
CFDS/C-2	S-2016	2016/01/19	3	07:35:26	07:41:54	05:53:00	19:58:00	05:25:00	20:26:00	00:06:28	14:05:00	15:01:00	0.77	0.72	###################	####################
CFDS/C-2	S-2016	2016/01/19	4	08:23:14	08:23:15	05:53:00	19:58:00	05:25:00	20:26:00	00:00:01	14:05:00	15:01:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/01/19	5	08:41:50	08:44:09	05:53:00	19:58:00	05:25:00	20:26:00	00:02:19	14:05:00	15:01:00	0.27	0.26	###################	####################
CFDS/C-2	S-2016	2016/01/19	6	09:33:20	09:41:13	05:53:00	19:58:00	05:25:00	20:26:00	00:07:53	14:05:00	15:01:00	0.93	0.87	###################	####################
CFDS/C-2	S-2016	2016/01/19	7	09:52:55	09:55:54	05:53:00	19:58:00	05:25:00	20:26:00	00:02:59	14:05:00	15:01:00	0.35	0.33	###################	####################
CFDS/C-2	S-2016	2016/01/19	8	10:09:03	10:09:04	05:53:00	19:58:00	05:25:00	20:26:00	00:00:01	14:05:00	15:01:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/01/19	9	10:22:04	10:26:14	05:53:00	19:58:00	05:25:00	20:26:00	00:04:10	14:05:00	15:01:00	0.49	0.46	###################	####################
CFDS/C-2	S-2016	2016/01/19	10	13:38:02	13:47:36	05:53:00	19:58:00	05:25:00	20:26:00	00:09:34	14:05:00	15:01:00	1.13	1.06	###################	####################
CFDS/C-2	S-2016	2016/01/19	11	15:47:30	15:54:20	05:53:00	19:58:00	05:25:00	20:26:00	00:06:50	14:05:00	15:01:00	0.81	0.76	###################	####################
CFDS/C-2	S-2016	2016/01/19	12	16:29:22	16:34:37	05:53:00	19:58:00	05:25:00	20:26:00	00:05:15	14:05:00	15:01:00	0.62	0.58	###################	####################
CFDS/C-2	S-2016	2016/01/19	13	17:20:09	17:25:45	05:53:00	19:58:00	05:25:00	20:26:00	00:05:36	14:05:00	15:01:00	0.66	0.62	###################	####################
CFDS/C-2	S-2016	2016/01/19	14	17:38:08	17:49:25	05:53:00	19:58:00	05:25:00	20:26:00	00:11:17	14:05:00	15:01:00	1.34	1.25	###################	####################
CFDS/C-2	S-2016	2016/01/19	15	18:43:39	18:52:15	05:53:00	19:58:00	05:25:00	20:26:00	00:08:36	14:05:00	15:01:00	1.02	0.95	###################	####################
CFDS/C-2	S-2016	2016/01/19	16	19:17:24	19:36:35	05:53:00	19:58:00	05:25:00	20:26:00	00:19:11	14:05:00	15:01:00	2.27	2.13	###################	####################
CFDS/C-2	S-2016	2016/01/20	1	08:07:13	08:10:22	05:54:00	19:58:00	05:26:00	20:26:00	00:03:09	14:04:00	15:00:00	0.37	0.35	###################	####################
CFDS/C-2	S-2016	2016/01/20	2	08:22:00	08:29:53	05:54:00	19:58:00	05:26:00	20:26:00	00:07:53	14:04:00	15:00:00	0.93	0.88	###################	####################
CFDS/C-2	S-2016	2016/01/20	3	08:50:47	08:58:11	05:54:00	19:58:00	05:26:00	20:26:00	00:07:24	14:04:00	15:00:00	0.88	0.82	###################	####################
CFDS/C-2	S-2016	2016/01/20	4	09:16:15	09:18:33	05:54:00	19:58:00	05:26:00	20:26:00	00:02:18	14:04:00	15:00:00	0.27	0.26	###################	####################
CFDS/C-2	S-2016	2016/01/20	5	09:43:44	09:53:17	05:54:00	19:58:00	05:26:00	20:26:00	00:09:33	14:04:00	15:00:00	1.13	1.06	###################	####################
CFDS/C-2	S-2016	2016/01/20	6	10:37:53	10:41:55	05:54:00	19:58:00	05:26:00	20:26:00	00:04:02	14:04:00	15:00:00	0.48	0.45	###################	####################
CFDS/C-2	S-2016	2016/01/20	7	13:39:03	13:39:03	05:54:00	19:58:00	05:26:00	20:26:00	00:00:00	14:04:00	15:00:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/01/20	8	14:28:06	14:48:29	05:54:00	19:58:00	05:26:00	20:26:00	00:20:23	14:04:00	15:00:00	2.42	2.26	###################	####################
CFDS/C-2	S-2016	2016/01/20	9	14:58:49	14:58:50	05:54:00	19:58:00	05:26:00	20:26:00	00:00:01	14:04:00	15:00:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/01/20	10	16:29:18	16:29:19	05:54:00	19:58:00	05:26:00	20:26:00	00:00:01	14:04:00	15:00:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/01/20	11	16:48:10	16:49:21	05:54:00	19:58:00	05:26:00	20:26:00	00:01:11	14:04:00	15:00:00	0.14	0.13	###################	####################
CFDS/C-2	S-2016	2016/01/20	12	17:15:16	17:18:56	05:54:00	19:58:00	05:26:00	20:26:00	00:03:40	14:04:00	15:00:00	0.43	0.41	###################	####################
CFDS/C-2	S-2016	2016/01/20	13	18:00:10	18:14:37	05:54:00	19:58:00	05:26:00	20:26:00	00:14:27	14:04:00	15:00:00	1.71	1.61	###################	####################
CFDS/C-2	S-2016	2016/01/20	14	19:01:00	19:02:19	05:54:00	19:58:00	05:26:00	20:26:00	00:01:19	14:04:00	15:00:00	0.16	0.15	###################	####################
CFDS/C-2	S-2016	2016/01/21	1	06:42:31	06:42:33	05:55:00	19:57:00	05:27:00	20:25:00	00:00:02	14:02:00	14:58:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/01/21	2	07:07:15	07:07:16	05:55:00	19:57:00	05:27:00	20:25:00	00:00:01	14:02:00	14:58:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/01/21	3	07:58:58	08:01:24	05:55:00	19:57:00	05:27:00	20:25:00	00:02:26	14:02:00	14:58:00	0.29	0.27	###################	####################
CFDS/C-2	S-2016	2016/01/21	4	09:14:09	09:21:54	05:55:00	19:57:00	05:27:00	20:25:00	00:07:45	14:02:00	14:58:00	0.92	0.86	###################	####################
CFDS/C-2	S-2016	2016/01/21	5	11:22:34	11:27:47	05:55:00	19:57:00	05:27:00	20:25:00	00:05:13	14:02:00	14:58:00	0.62	0.58	###################	####################
CFDS/C-2	S-2016	2016/01/21	6	14:20:56	14:20:56	05:55:00	19:57:00	05:27:00	20:25:00	00:00:00	14:02:00	14:58:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/01/21	7	16:07:40	16:07:41	05:55:00	19:57:00	05:27:00	20:25:00	00:00:01	14:02:00	14:58:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/01/21	8	17:04:21	17:06:01	05:55:00	19:57:00	05:27:00	20:25:00	00:01:40	14:02:00	14:58:00	0.2	0.19	###################	####################
CFDS/C-2	S-2016	2016/01/21	9	17:48:28	17:48:30	05:55:00	19:57:00	05:27:00	20:25:00	00:00:02	14:02:00	14:58:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/01/21	10	19:15:46	19:15:48	05:55:00	19:57:00	05:27:00	20:25:00	00:00:02	14:02:00	14:58:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/01/22	1	07:08:44	07:08:45	05:56:00	19:57:00	05:28:00	20:25:00	00:00:01	14:01:00	14:57:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/01/22	2	08:04:50	08:04:52	05:56:00	19:57:00	05:28:00	20:25:00	00:00:02	14:01:00	14:57:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/01/22	3	09:37:31	09:37:31	05:56:00	19:57:00	05:28:00	20:25:00	00:00:00	14:01:00	14:57:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/01/22	4	09:58:08	10:03:43	05:56:00	19:57:00	05:28:00	20:25:00	00:05:35	14:01:00	14:57:00	0.66	0.62	###################	####################
CFDS/C-2	S-2016	2016/01/22	5	10:30:14	10:33:14	05:56:00	19:57:00	05:28:00	20:25:00	00:03:00	14:01:00	14:57:00	0.36	0.33	###################	####################
CFDS/C-2	S-2016	2016/01/22	6	10:43:05	10:43:07	05:56:00	19:57:00	05:28:00	20:25:00	00:00:02	14:01:00	14:57:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/01/22	7	16:00:03	16:00:05	05:56:00	19:57:00	05:28:00	20:25:00	00:00:02	14:01:00	14:57:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/01/22	8	16:23:23	16:23:23	05:56:00	19:57:00	05:28:00	20:25:00	00:00:00	14:01:00	14:57:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/01/22	9	18:22:26	18:22:27	05:56:00	19:57:00	05:28:00	20:25:00	00:00:01	14:01:00	14:57:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/01/22	10	19:51:19	19:51:21	05:56:00	19:57:00	05:28:00	20:25:00	00:00:02	14:01:00	14:57:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/01/23	1	07:53:05	07:53:07	05:57:00	19:56:00	05:29:00	20:24:00	00:00:02	13:59:00	14:55:00	0	0.00	###################	####################

CFDS/C-2	S-2016	2016/01/23	2	10:20:33	10:48:50	05:57:00	19:56:00	05:29:00	20:24:00	00:28:17	13:59:00	14:55:00	3.37	3.16	###################	####################
CFDS/C-2	S-2016	2016/01/23	3	11:04:30	11:04:31	05:57:00	19:56:00	05:29:00	20:24:00	00:00:01	13:59:00	14:55:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/01/23	4	11:19:56	11:19:56	05:57:00	19:56:00	05:29:00	20:24:00	00:00:00	13:59:00	14:55:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/01/23	5	13:54:38	14:03:45	05:57:00	19:56:00	05:29:00	20:24:00	00:09:07	13:59:00	14:55:00	1.09	1.02	###################	####################
CFDS/C-2	S-2016	2016/01/23	6	14:52:22	14:52:23	05:57:00	19:56:00	05:29:00	20:24:00	00:00:01	13:59:00	14:55:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/01/23	7	15:27:17	15:29:40	05:57:00	19:56:00	05:29:00	20:24:00	00:02:23	13:59:00	14:55:00	0.28	0.27	###################	####################
CFDS/C-2	S-2016	2016/01/23	8	16:21:25	16:22:34	05:57:00	19:56:00	05:29:00	20:24:00	00:01:09	13:59:00	14:55:00	0.14	0.13	###################	####################
CFDS/C-2	S-2016	2016/01/23	9	18:20:04	18:28:11	05:57:00	19:56:00	05:29:00	20:24:00	00:08:07	13:59:00	14:55:00	0.97	0.91	###################	####################
CFDS/C-2	S-2016	2016/01/23	10	19:37:28	19:37:29	05:57:00	19:56:00	05:29:00	20:24:00	00:00:01	13:59:00	14:55:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/01/24	1	08:37:31	08:57:55	05:58:00	19:56:00	05:30:00	20:24:00	00:20:24	13:58:00	14:54:00	2.43	2.28	###################	####################
CFDS/C-2	S-2016	2016/01/24	2	09:24:05	09:38:55	05:58:00	19:56:00	05:30:00	20:24:00	00:14:50	13:58:00	14:54:00	1.77	1.66	###################	####################
CFDS/C-2	S-2016	2016/01/24	3	11:08:11	11:34:25	05:58:00	19:56:00	05:30:00	20:24:00	00:26:14	13:58:00	14:54:00	3.13	2.93	###################	####################
CFDS/C-2	S-2016	2016/01/24	4	11:53:47	11:54:56	05:58:00	19:56:00	05:30:00	20:24:00	00:01:09	13:58:00	14:54:00	0.14	0.13	###################	####################
CFDS/C-2	S-2016	2016/01/24	5	12:06:48	12:06:49	05:58:00	19:56:00	05:30:00	20:24:00	00:00:01	13:58:00	14:54:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/01/24	6	12:24:16	12:25:26	05:58:00	19:56:00	05:30:00	20:24:00	00:01:10	13:58:00	14:54:00	0.14	0.13	###################	####################
CFDS/C-2	S-2016	2016/01/24	7	16:20:18	18:25:16	05:58:00	19:56:00	05:30:00	20:24:00	02:04:58	13:58:00	14:54:00	14.91	13.98	###################	####################
CFDS/C-2	S-2016	2016/01/24	8	18:40:01	19:13:04	05:58:00	19:56:00	05:30:00	20:24:00	00:33:03	13:58:00	14:54:00	3.94	3.70	###################	####################
CFDS/C-2	S-2016	2016/01/25	1	07:06:40	07:31:45	05:59:00	19:55:00	05:31:00	20:23:00	00:25:05	13:56:00	14:52:00	3	2.81	###################	####################
CFDS/C-2	S-2016	2016/01/25	2	07:49:05	08:02:39	05:59:00	19:55:00	05:31:00	20:23:00	00:13:34	13:56:00	14:52:00	1.62	1.52	###################	####################
CFDS/C-2	S-2016	2016/01/25	3	08:20:38	08:22:10	05:59:00	19:55:00	05:31:00	20:23:00	00:01:32	13:56:00	14:52:00	0.18	0.17	###################	####################
CFDS/C-2	S-2016	2016/01/25	4	08:45:55	08:46:00	05:59:00	19:55:00	05:31:00	20:23:00	00:00:05	13:56:00	14:52:00	0.01	0.01	###################	####################
CFDS/C-2	S-2016	2016/01/25	5	10:36:57	10:39:22	05:59:00	19:55:00	05:31:00	20:23:00	00:02:25	13:56:00	14:52:00	0.29	0.27	###################	####################
CFDS/C-2	S-2016	2016/01/25	6	11:12:47	11:26:13	05:59:00	19:55:00	05:31:00	20:23:00	00:13:26	13:56:00	14:52:00	1.61	1.51	###################	####################
CFDS/C-2	S-2016	2016/01/25	7	11:38:27	12:01:53	05:59:00	19:55:00	05:31:00	20:23:00	00:23:26	13:56:00	14:52:00	2.8	2.63	###################	####################
CFDS/C-2	S-2016	2016/01/25	8	12:12:05	12:38:08	05:59:00	19:55:00	05:31:00	20:23:00	00:26:03	13:56:00	14:52:00	3.12	2.92	###################	####################
CFDS/C-2	S-2016	2016/01/25	9	13:16:18	13:17:27	05:59:00	19:55:00	05:31:00	20:23:00	00:01:09	13:56:00	14:52:00	0.14	0.13	###################	####################
CFDS/C-2	S-2016	2016/01/25	10	16:11:40	16:13:33	05:59:00	19:55:00	05:31:00	20:23:00	00:01:53	13:56:00	14:52:00	0.23	0.21	###################	####################
CFDS/C-2	S-2016	2016/01/25	11	16:45:42	16:54:19	05:59:00	19:55:00	05:31:00	20:23:00	00:08:37	13:56:00	14:52:00	1.03	0.97	###################	####################
CFDS/C-2	S-2016	2016/01/25	12	17:13:11	17:13:13	05:59:00	19:55:00	05:31:00	20:23:00	00:00:02	13:56:00	14:52:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/01/25	13	17:32:48	17:32:49	05:59:00	19:55:00	05:31:00	20:23:00	00:00:01	13:56:00	14:52:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/01/25	14	17:49:22	17:49:24	05:59:00	19:55:00	05:31:00	20:23:00	00:00:02	13:56:00	14:52:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/01/25	15	18:22:21	18:24:43	05:59:00	19:55:00	05:31:00	20:23:00	00:02:22	13:56:00	14:52:00	0.28	0.27	###################	####################
CFDS/C-2	S-2016	2016/01/25	16	19:17:47	19:19:06	05:59:00	19:55:00	05:31:00	20:23:00	00:01:19	13:56:00	14:52:00	0.16	0.15	###################	####################
CFDS/C-2	S-2016	2016/01/26	1	09:20:45	10:06:57	06:00:00	19:55:00	05:32:00	20:22:00	00:46:12	13:55:00	14:50:00	5.53	5.19	###################	####################
CFDS/C-2	S-2016	2016/01/26	2	10:53:43	11:05:16	06:00:00	19:55:00	05:32:00	20:22:00	00:11:33	13:55:00	14:50:00	1.38	1.30	###################	####################
CFDS/C-2	S-2016	2016/01/26	3	11:40:06	11:40:07	06:00:00	19:55:00	05:32:00	20:22:00	00:00:01	13:55:00	14:50:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/01/26	4	12:43:42	12:47:28	06:00:00	19:55:00	05:32:00	20:22:00	00:03:46	13:55:00	14:50:00	0.45	0.42	###################	####################
CFDS/C-2	S-2016	2016/01/26	5	14:27:59	15:28:02	06:00:00	19:55:00	05:32:00	20:22:00	01:00:03	13:55:00	14:50:00	7.19	6.75	###################	####################
CFDS/C-2	S-2016	2016/01/26	6	16:16:59	16:17:01	06:00:00	19:55:00	05:32:00	20:22:00	00:00:02	13:55:00	14:50:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/01/26	7	18:56:16	18:59:29	06:00:00	19:55:00	05:32:00	20:22:00	00:03:13	13:55:00	14:50:00	0.39	0.36	###################	####################
CFDS/C-2	S-2016	2016/01/27	1	07:08:11	08:55:14	06:01:00	19:54:00	05:33:00	20:22:00	01:47:03	13:53:00	14:49:00	12.85	12.04	###################	####################
CFDS/C-2	S-2016	2016/01/27	2	10:13:56	11:10:33	06:01:00	19:54:00	05:33:00	20:22:00	00:56:37	13:53:00	14:49:00	6.8	6.37	###################	####################
CFDS/C-2	S-2016	2016/01/27	3	11:49:20	12:54:38	06:01:00	19:54:00	05:33:00	20:22:00	01:05:18	13:53:00	14:49:00	7.84	7.35	###################	####################
CFDS/C-2	S-2016	2016/01/27	4	13:24:53	13:57:05	06:01:00	19:54:00	05:33:00	20:22:00	00:32:12	13:53:00	14:49:00	3.87	3.62	###################	####################
CFDS/C-2	S-2016	2016/01/27	5	16:02:03	16:45:01	06:01:00	19:54:00	05:33:00	20:22:00	00:42:58	13:53:00	14:49:00	5.16	4.83	###################	####################
CFDS/C-2	S-2016	2016/01/27	6	17:11:01	18:03:57	06:01:00	19:54:00	05:33:00	20:22:00	00:52:56	13:53:00	14:49:00	6.35	5.95	###################	####################
CFDS/C-2	S-2016	2016/01/27	7	18:28:54	18:40:13	06:01:00	19:54:00	05:33:00	20:22:00	00:11:19	13:53:00	14:49:00	1.36	1.27	###################	####################
CFDS/C-2	S-2016	2016/01/27	8	19:10:27	19:10:28	06:01:00	19:54:00	05:33:00	20:22:00	00:00:01	13:53:00	14:49:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/01/27	9	19:46:03	19:46:04	06:01:00	19:54:00	05:33:00	20:22:00	00:00:01	13:53:00	14:49:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/01/28	1	08:22:51	09:18:22	06:02:00	19:54:00	05:34:00	20:21:00	00:55:31	13:52:00	14:47:00	6.67	6.26	###################	####################
CFDS/C-2	S-2016	2016/01/28	2	09:56:58	09:57:00	06:02:00	19:54:00	05:34:00	20:21:00	00:00:02	13:52:00	14:47:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/01/28	3	10:24:44	12:02:28	06:02:00	19:54:00	05:34:00	20:21:00	01:37:44	13:52:00	14:47:00	11.75	11.02	###################	####################
CFDS/C-2	S-2016	2016/01/28	4	12:18:36	13:13:27	06:02:00	19:54:00	05:34:00	20:21:00	00:54:51	13:52:00	14:47:00	6.59	6.18	###################	####################
CFDS/C-2	S-2016	2016/01/28	5	13:49:18	15:29:49	06:02:00	19:54:00	05:34:00	20:21:00	01:40:31	13:52:00	14:47:00	12.08	11.33	###################	####################
CFDS/C-2	S-2016	2016/01/28	6	15:47:54	16:13:42	06:02:00	19:54:00	05:34:00	20:21:00	00:25:48	13:52:00	14:47:00	3.1	2.91	###################	####################
CFDS/C-2	S-2016	2016/01/28	7	16:33:41	16:53:24	06:02:00	19:54:00	05:34:00	20:21:00	00:19:43	13:52:00	14:47:00	2.37	2.22	###################	####################
CFDS/C-2	S-2016	2016/01/28	8	17:25:42	18:29:32	06:02:00	19:54:00	05:34:00	20:21:00	01:03:50	13:52:00	14:47:00	7.67	7.20	###################	####################
CFDS/C-2	S-2016	2016/01/28	9	18:44:40	19:54:23	06:02:00	19:54:00	05:34:00	20:21:00	01:09:43	13:52:00	14:47:00	8.38	7.86	###################	####################
CFDS/C-2	S-2016	2016/01/29	1	07:51:09	07:53:11	06:03:00	19:53:00	05:35:00	20:20:00	00:02:02	13:50:00	14:45:00	0.24	0.23	###################	####################
CFDS/C-2	S-2016	2016/01/29	2	08:46:20	09:41:37	06:03:00	19:53:00	05:35:00	20:20:00	00:55:17	13:50:00	14:45:00	6.66	6.25	###################	####################
CFDS/C-2	S-2016	2016/01/29	3	09:55:19	09:56:27	06:03:00	19:53:00	05:35:00	20:20:00	00:01:08	13:50:00	14:45:00	0.14	0.13	###################	####################
CFDS/C-2	S-2016	2016/01/29	4	11:09:41	12:30:27	06:03:00	19:53:00	05:35:00	20:20:00	01:20:46	13:50:00	14:45:00	9.73	9.13	###################	####################
CFDS/C-2	S-2016	2016/01/29	5	12:44:10	13:05:47	06:03:00	19:53:00	05:35:00	20:20:00	00:21:37	13:50:00	14:45:00	2.6	2.44	###################	####################

CFDS/C-2	S-2016	2016/01/29	6	13:26:52	14:26:20	06:03:00	19:53:00	05:35:00	20:20:00	00:59:28	13:50:00	14:45:00	7.16	6.72	###################	####################
CFDS/C-2	S-2016	2016/01/29	7	17:05:51	17:37:06	06:03:00	19:53:00	05:35:00	20:20:00	00:31:15	13:50:00	14:45:00	3.77	3.53	###################	####################
CFDS/C-2	S-2016	2016/01/29	8	19:11:23	19:27:50	06:03:00	19:53:00	05:35:00	20:20:00	00:16:27	13:50:00	14:45:00	1.98	1.86	###################	####################
CFDS/C-2	S-2016	2016/01/30	1	07:02:39	07:03:52	06:04:00	19:52:00	05:37:00	20:20:00	00:01:13	13:48:00	14:43:00	0.15	0.14	###################	####################
CFDS/C-2	S-2016	2016/01/30	2	07:40:18	07:50:00	06:04:00	19:52:00	05:37:00	20:20:00	00:09:42	13:48:00	14:43:00	1.17	1.10	###################	####################
CFDS/C-2	S-2016	2016/01/30	3	08:17:38	08:18:56	06:04:00	19:52:00	05:37:00	20:20:00	00:01:18	13:48:00	14:43:00	0.16	0.15	###################	####################
CFDS/C-2	S-2016	2016/01/30	4	09:40:15	09:41:25	06:04:00	19:52:00	05:37:00	20:20:00	00:01:10	13:48:00	14:43:00	0.14	0.13	###################	####################
CFDS/C-2	S-2016	2016/01/30	5	11:22:38	12:17:40	06:04:00	19:52:00	05:37:00	20:20:00	00:55:02	13:48:00	14:43:00	6.65	6.23	###################	####################
CFDS/C-2	S-2016	2016/01/30	6	13:36:33	14:07:03	06:04:00	19:52:00	05:37:00	20:20:00	00:30:30	13:48:00	14:43:00	3.68	3.45	###################	####################
CFDS/C-2	S-2016	2016/01/30	7	15:38:41	15:55:53	06:04:00	19:52:00	05:37:00	20:20:00	00:17:12	13:48:00	14:43:00	2.08	1.95	###################	####################
CFDS/C-2	S-2016	2016/01/30	8	16:43:24	16:57:52	06:04:00	19:52:00	05:37:00	20:20:00	00:14:28	13:48:00	14:43:00	1.75	1.64	###################	####################
CFDS/C-2	S-2016	2016/01/30	9	17:15:57	19:21:24	06:04:00	19:52:00	05:37:00	20:20:00	02:05:27	13:48:00	14:43:00	15.15	14.21	###################	####################
CFDS/C-2	S-2016	2016/01/31	1	08:45:32	10:41:45	06:05:00	19:52:00	05:38:00	20:19:00	01:56:13	13:47:00	14:41:00	14.05	13.19	###################	####################
CFDS/C-2	S-2016	2016/01/31	2	10:54:12	10:54:13	06:05:00	19:52:00	05:38:00	20:19:00	00:00:01	13:47:00	14:41:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/01/31	3	11:11:36	11:14:06	06:05:00	19:52:00	05:38:00	20:19:00	00:02:30	13:47:00	14:41:00	0.3	0.28	###################	####################
CFDS/C-2	S-2016	2016/01/31	4	12:12:28	12:51:29	06:05:00	19:52:00	05:38:00	20:19:00	00:39:01	13:47:00	14:41:00	4.72	4.43	###################	####################
CFDS/C-2	S-2016	2016/01/31	5	13:05:41	13:05:43	06:05:00	19:52:00	05:38:00	20:19:00	00:00:02	13:47:00	14:41:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/01/31	6	13:23:34	13:23:34	06:05:00	19:52:00	05:38:00	20:19:00	00:00:00	13:47:00	14:41:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/01/31	7	13:44:54	13:48:21	06:05:00	19:52:00	05:38:00	20:19:00	00:03:27	13:47:00	14:41:00	0.42	0.39	###################	####################
CFDS/C-2	S-2016	2016/01/31	8	14:10:42	14:10:44	06:05:00	19:52:00	05:38:00	20:19:00	00:00:02	13:47:00	14:41:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/01/31	9	15:38:33	15:40:12	06:05:00	19:52:00	05:38:00	20:19:00	00:01:39	13:47:00	14:41:00	0.2	0.19	###################	####################
CFDS/C-2	S-2016	2016/01/31	10	17:09:27	17:09:29	06:05:00	19:52:00	05:38:00	20:19:00	00:00:02	13:47:00	14:41:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/01/31	11	18:42:01	19:33:44	06:05:00	19:52:00	05:38:00	20:19:00	00:51:43	13:47:00	14:41:00	6.25	5.87	###################	####################
CFDS/C-2	S-2016	2016/02/01	1	07:01:35	07:09:53	06:06:00	19:51:00	05:39:00	20:18:00	00:08:18	13:45:00	14:39:00	1.01	0.94	###################	####################
CFDS/C-2	S-2016	2016/02/01	2	07:41:45	07:47:45	06:06:00	19:51:00	05:39:00	20:18:00	00:06:00	13:45:00	14:39:00	0.73	0.68	###################	####################
CFDS/C-2	S-2016	2016/02/01	3	09:55:56	09:58:19	06:06:00	19:51:00	05:39:00	20:18:00	00:02:23	13:45:00	14:39:00	0.29	0.27	###################	####################
CFDS/C-2	S-2016	2016/02/01	4	10:19:34	10:30:35	06:06:00	19:51:00	05:39:00	20:18:00	00:11:01	13:45:00	14:39:00	1.34	1.25	###################	####################
CFDS/C-2	S-2016	2016/02/01	5	11:02:48	11:13:11	06:06:00	19:51:00	05:39:00	20:18:00	00:10:23	13:45:00	14:39:00	1.26	1.18	###################	####################
CFDS/C-2	S-2016	2016/02/01	6	11:42:19	11:42:21	06:06:00	19:51:00	05:39:00	20:18:00	00:00:02	13:45:00	14:39:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/02/01	7	11:55:42	12:22:27	06:06:00	19:51:00	05:39:00	20:18:00	00:26:45	13:45:00	14:39:00	3.24	3.04	###################	####################
CFDS/C-2	S-2016	2016/02/01	8	12:40:10	13:08:13	06:06:00	19:51:00	05:39:00	20:18:00	00:28:03	13:45:00	14:39:00	3.4	3.19	###################	####################
CFDS/C-2	S-2016	2016/02/01	9	15:02:50	15:02:51	06:06:00	19:51:00	05:39:00	20:18:00	00:00:01	13:45:00	14:39:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/02/01	10	15:14:51	15:22:55	06:06:00	19:51:00	05:39:00	20:18:00	00:08:04	13:45:00	14:39:00	0.98	0.92	###################	####################
CFDS/C-2	S-2016	2016/02/01	11	15:41:25	15:41:27	06:06:00	19:51:00	05:39:00	20:18:00	00:00:02	13:45:00	14:39:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/02/01	12	16:09:11	16:17:27	06:06:00	19:51:00	05:39:00	20:18:00	00:08:16	13:45:00	14:39:00	1	0.94	###################	####################
CFDS/C-2	S-2016	2016/02/01	13	17:21:58	17:25:20	06:06:00	19:51:00	05:39:00	20:18:00	00:03:22	13:45:00	14:39:00	0.41	0.38	###################	####################
CFDS/C-2	S-2016	2016/02/01	14	17:52:29	17:55:35	06:06:00	19:51:00	05:39:00	20:18:00	00:03:06	13:45:00	14:39:00	0.38	0.35	###################	####################
CFDS/C-2	S-2016	2016/02/01	15	18:24:56	18:26:12	06:06:00	19:51:00	05:39:00	20:18:00	00:01:16	13:45:00	14:39:00	0.15	0.14	###################	####################
CFDS/C-2	S-2016	2016/02/01	16	19:07:57	19:07:57	06:06:00	19:51:00	05:39:00	20:18:00	00:00:00	13:45:00	14:39:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/02/02	1	07:16:07	07:16:08	06:07:00	19:50:00	05:40:00	20:17:00	00:00:01	13:43:00	14:37:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/02/02	2	07:46:38	07:46:40	06:07:00	19:50:00	05:40:00	20:17:00	00:00:02	13:43:00	14:37:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/02/02	3	09:55:14	09:59:21	06:07:00	19:50:00	05:40:00	20:17:00	00:04:07	13:43:00	14:37:00	0.5	0.47	###################	####################
CFDS/C-2	S-2016	2016/02/02	4	14:59:29	14:59:31	06:07:00	19:50:00	05:40:00	20:17:00	00:00:02	13:43:00	14:37:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/02/02	5	15:55:01	15:59:23	06:07:00	19:50:00	05:40:00	20:17:00	00:04:22	13:43:00	14:37:00	0.53	0.50	###################	####################
CFDS/C-2	S-2016	2016/02/02	6	18:59:56	19:07:04	06:07:00	19:50:00	05:40:00	20:17:00	00:07:08	13:43:00	14:37:00	0.87	0.81	###################	####################
CFDS/C-2	S-2016	2016/02/03	1	06:59:01	06:59:02	06:08:00	19:49:00	05:41:00	20:16:00	00:00:01	13:41:00	14:35:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/02/03	2	09:42:49	09:42:51	06:08:00	19:49:00	05:41:00	20:16:00	00:00:02	13:41:00	14:35:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/02/03	3	12:48:00	12:52:03	06:08:00	19:49:00	05:41:00	20:16:00	00:04:03	13:41:00	14:35:00	0.49	0.46	###################	####################
CFDS/C-2	S-2016	2016/02/03	4	13:34:11	13:34:12	06:08:00	19:49:00	05:41:00	20:16:00	00:00:01	13:41:00	14:35:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/02/03	5	13:45:04	14:08:43	06:08:00	19:49:00	05:41:00	20:16:00	00:23:39	13:41:00	14:35:00	2.88	2.70	###################	####################
CFDS/C-2	S-2016	2016/02/03	6	15:14:24	15:14:25	06:08:00	19:49:00	05:41:00	20:16:00	00:00:01	13:41:00	14:35:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/02/03	7	15:34:34	15:35:48	06:08:00	19:49:00	05:41:00	20:16:00	00:01:14	13:41:00	14:35:00	0.15	0.14	###################	####################
CFDS/C-2	S-2016	2016/02/03	8	17:05:09	17:13:26	06:08:00	19:49:00	05:41:00	20:16:00	00:08:17	13:41:00	14:35:00	1.01	0.95	###################	####################
CFDS/C-2	S-2016	2016/02/04	1	09:59:08	10:16:08	06:09:00	19:49:00	05:42:00	20:15:00	00:17:00	13:40:00	14:33:00	2.07	1.95	###################	####################
CFDS/C-2	S-2016	2016/02/04	2	10:49:30	10:51:45	06:09:00	19:49:00	05:42:00	20:15:00	00:02:15	13:40:00	14:33:00	0.27	0.26	###################	####################
CFDS/C-2	S-2016	2016/02/04	3	11:40:38	11:42:10	06:09:00	19:49:00	05:42:00	20:15:00	00:01:32	13:40:00	14:33:00	0.19	0.18	###################	####################
CFDS/C-2	S-2016	2016/02/04	4	14:18:03	14:26:07	06:09:00	19:49:00	05:42:00	20:15:00	00:08:04	13:40:00	14:33:00	0.98	0.92	###################	####################
CFDS/C-2	S-2016	2016/02/04	5	15:22:56	15:33:50	06:09:00	19:49:00	05:42:00	20:15:00	00:10:54	13:40:00	14:33:00	1.33	1.25	###################	####################
CFDS/C-2	S-2016	2016/02/04	6	17:56:37	18:02:30	06:09:00	19:49:00	05:42:00	20:15:00	00:05:53	13:40:00	14:33:00	0.72	0.67	###################	####################
CFDS/C-2	S-2016	2016/02/05	1	07:56:09	08:00:15	06:10:00	19:48:00	05:43:00	20:15:00	00:04:06	13:38:00	14:32:00	0.5	0.47	###################	####################
CFDS/C-2	S-2016	2016/02/05	2	13:24:51	13:27:35	06:10:00	19:48:00	05:43:00	20:15:00	00:02:44	13:38:00	14:32:00	0.33	0.31	###################	####################
CFDS/C-2	S-2016	2016/02/05	3	17:24:53	17:25:01	06:10:00	19:48:00	05:43:00	20:15:00	00:00:08	13:38:00	14:32:00	0.02	0.02	###################	####################
CFDS/C-2	S-2016	2016/02/06	1	06:40:18	06:40:20	06:11:00	19:47:00	05:44:00	20:14:00	00:00:02	13:36:00	14:30:00	0	0.00	###################	####################

CFDS/C-2	S-2016	2016/02/06	2	08:32:03	08:34:36	06:11:00	19:47:00	05:44:00	20:14:00	00:02:33	13:36:00	14:30:00	0.31	0.29	###################	####################
CFDS/C-2	S-2016	2016/02/06	3	14:34:25	14:34:26	06:11:00	19:47:00	05:44:00	20:14:00	00:00:01	13:36:00	14:30:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/02/06	4	18:13:26	18:13:28	06:11:00	19:47:00	05:44:00	20:14:00	00:00:02	13:36:00	14:30:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/02/07	1	11:56:20	11:56:21	06:12:00	19:46:00	05:45:00	20:13:00	00:00:01	13:34:00	14:28:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/02/08	1	09:18:00	09:21:34	06:13:00	19:45:00	05:46:00	20:12:00	00:03:34	13:32:00	14:26:00	0.44	0.41	###################	####################
CFDS/C-2	S-2016	2016/02/08	2	10:42:19	11:02:28	06:13:00	19:45:00	05:46:00	20:12:00	00:20:09	13:32:00	14:26:00	2.48	2.33	###################	####################
CFDS/C-2	S-2016	2016/02/08	3	12:28:26	12:30:06	06:13:00	19:45:00	05:46:00	20:12:00	00:01:40	13:32:00	14:26:00	0.21	0.19	###################	####################
CFDS/C-2	S-2016	2016/02/08	4	14:19:00	14:26:10	06:13:00	19:45:00	05:46:00	20:12:00	00:07:10	13:32:00	14:26:00	0.88	0.83	###################	####################
CFDS/C-2	S-2016	2016/02/08	5	15:57:48	15:57:50	06:13:00	19:45:00	05:46:00	20:12:00	00:00:02	13:32:00	14:26:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/02/08	6	16:13:06	16:14:18	06:13:00	19:45:00	05:46:00	20:12:00	00:01:12	13:32:00	14:26:00	0.15	0.14	###################	####################
CFDS/C-2	S-2016	2016/02/08	7	19:03:44	19:08:52	06:13:00	19:45:00	05:46:00	20:12:00	00:05:08	13:32:00	14:26:00	0.63	0.59	###################	####################
CFDS/C-2	S-2016	2016/02/09	1	17:39:35	17:39:36	06:14:00	19:44:00	05:47:00	20:11:00	00:00:01	13:30:00	14:24:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/02/09	2	19:09:30	19:14:02	06:14:00	19:44:00	05:47:00	20:11:00	00:04:32	13:30:00	14:24:00	0.56	0.52	###################	####################
CFDS/C-2	S-2016	2016/02/10	1	08:43:13	08:46:38	06:15:00	19:43:00	05:48:00	20:10:00	00:03:25	13:30:00	14:22:00	0.42	0.40	###################	####################
CFDS/C-2	S-2016	2016/02/10	2	10:05:49	10:10:22	06:15:00	19:43:00	05:48:00	20:10:00	00:04:33	13:30:00	14:22:00	0.56	0.53	###################	####################
CFDS/C-2	S-2016	2016/02/10	3	11:17:03	11:17:04	06:15:00	19:43:00	05:48:00	20:10:00	00:00:01	13:30:00	14:22:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/02/10	4	12:46:39	12:46:40	06:15:00	19:43:00	05:48:00	20:10:00	00:00:01	13:30:00	14:22:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/02/10	5	17:50:49	17:50:50	06:15:00	19:43:00	05:48:00	20:10:00	00:00:01	13:30:00	14:22:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/02/10	6	18:18:42	18:35:24	06:15:00	19:43:00	05:48:00	20:10:00	00:16:42	13:30:00	14:22:00	2.06	1.94	###################	####################
CFDS/C-2	S-2016	2016/02/11	1	06:21:08	06:22:18	06:16:00	19:42:00	05:49:00	20:09:00	00:01:10	13:26:00	14:20:00	0.14	0.14	###################	####################
CFDS/C-2	S-2016	2016/02/11	2	13:18:03	13:23:08	06:16:00	19:42:00	05:49:00	20:09:00	00:05:05	13:26:00	14:20:00	0.63	0.59	###################	####################
CFDS/C-2	S-2016	2016/02/11	3	18:58:07	18:59:34	06:16:00	19:42:00	05:49:00	20:09:00	00:01:27	13:26:00	14:20:00	0.18	0.17	###################	####################
CFDS/C-2	S-2016	2016/02/12	1	06:02:46	06:02:47	06:17:00	19:41:00	05:50:00	20:08:00	00:00:01	13:24:00	14:18:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/02/12	2	08:35:09	08:35:11	06:17:00	19:41:00	05:50:00	20:08:00	00:00:02	13:24:00	14:18:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/02/13	1	08:24:18	08:25:28	06:18:00	19:40:00	05:51:00	20:07:00	00:01:10	13:22:00	14:16:00	0.15	0.14	###################	####################
CFDS/C-2	S-2016	2016/02/13	2	10:00:27	10:05:24	06:18:00	19:40:00	05:51:00	20:07:00	00:04:57	13:22:00	14:16:00	0.62	0.58	###################	####################
CFDS/C-2	S-2016	2016/02/13	3	14:47:03	14:58:17	06:18:00	19:40:00	05:51:00	20:07:00	00:11:14	13:22:00	14:16:00	1.4	1.31	###################	####################
CFDS/C-2	S-2016	2016/02/13	4	17:48:29	17:48:30	06:18:00	19:40:00	05:51:00	20:07:00	00:00:01	13:22:00	14:16:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/02/14	1	10:41:42	10:43:05	06:19:00	19:39:00	05:52:00	20:06:00	00:01:23	13:20:00	14:14:00	0.17	0.16	###################	####################
CFDS/C-2	S-2016	2016/02/14	2	12:17:03	12:23:56	06:19:00	19:39:00	05:52:00	20:06:00	00:06:53	13:20:00	14:14:00	0.86	0.81	###################	####################
CFDS/C-2	S-2016	2016/02/14	3	14:07:30	14:08:40	06:19:00	19:39:00	05:52:00	20:06:00	00:01:10	13:20:00	14:14:00	0.15	0.14	###################	####################
CFDS/C-2	S-2016	2016/02/14	4	14:36:53	14:42:02	06:19:00	19:39:00	05:52:00	20:06:00	00:05:09	13:20:00	14:14:00	0.64	0.60	###################	####################
CFDS/C-2	S-2016	2016/02/15	1	10:55:23	10:57:53	06:20:00	19:38:00	05:53:00	20:05:00	00:02:30	13:18:00	14:12:00	0.31	0.29	###################	####################
CFDS/C-2	S-2016	2016/02/15	2	13:20:52	13:24:13	06:20:00	19:38:00	05:53:00	20:05:00	00:03:21	13:18:00	14:12:00	0.42	0.39	###################	####################
CFDS/C-2	S-2016	2016/02/15	3	13:46:41	13:48:00	06:20:00	19:38:00	05:53:00	20:05:00	00:01:19	13:18:00	14:12:00	0.16	0.15	###################	####################
CFDS/C-2	S-2016	2016/02/15	4	16:17:12	16:20:30	06:20:00	19:38:00	05:53:00	20:05:00	00:03:18	13:18:00	14:12:00	0.41	0.39	###################	####################
CFDS/C-2	S-2016	2016/02/15	5	18:07:43	18:07:45	06:20:00	19:38:00	05:53:00	20:05:00	00:00:02	13:18:00	14:12:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/02/15	6	19:37:40	19:42:49	06:20:00	19:38:00	05:53:00	20:05:00	00:05:09	13:18:00	14:12:00	0.65	0.60	###################	####################
CFDS/C-2	S-2016	2016/02/16	1	06:33:25	06:35:46	06:21:00	19:37:00	05:54:00	20:03:00	00:02:21	13:16:00	14:09:00	0.3	0.28	###################	####################
CFDS/C-2	S-2016	2016/02/16	2	11:46:14	11:48:54	06:21:00	19:37:00	05:54:00	20:03:00	00:02:40	13:16:00	14:09:00	0.34	0.31	###################	####################
CFDS/C-2	S-2016	2016/02/16	3	18:22:10	18:23:50	06:21:00	19:37:00	05:54:00	20:03:00	00:01:40	13:16:00	14:09:00	0.21	0.20	###################	####################
CFDS/C-2	S-2016	2016/02/17	1	06:41:55	06:47:45	06:22:00	19:36:00	05:55:00	20:02:00	00:05:50	13:14:00	14:07:00	0.73	0.69	###################	####################
CFDS/C-2	S-2016	2016/02/17	2	07:15:54	07:15:56	06:22:00	19:36:00	05:55:00	20:02:00	00:00:02	13:14:00	14:07:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/02/17	3	08:39:54	08:45:04	06:22:00	19:36:00	05:55:00	20:02:00	00:05:10	13:14:00	14:07:00	0.65	0.61	###################	####################
CFDS/C-2	S-2016	2016/02/17	4	15:28:37	15:28:38	06:22:00	19:36:00	05:55:00	20:02:00	00:00:01	13:14:00	14:07:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/02/17	5	17:04:23	17:07:29	06:22:00	19:36:00	05:55:00	20:02:00	00:03:06	13:14:00	14:07:00	0.39	0.37	###################	####################
CFDS/C-2	S-2016	2016/02/17	6	18:46:53	18:46:54	06:22:00	19:36:00	05:55:00	20:02:00	00:00:01	13:14:00	14:07:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/02/18	1	08:20:42	08:23:52	06:22:00	19:35:00	05:56:00	20:01:00	00:03:10	13:13:00	14:05:00	0.4	0.37	###################	####################
CFDS/C-2	S-2016	2016/02/18	2	11:21:20	11:23:19	06:22:00	19:35:00	05:56:00	20:01:00	00:01:59	13:13:00	14:05:00	0.25	0.23	###################	####################
CFDS/C-2	S-2016	2016/02/18	3	17:26:27	17:26:28	06:22:00	19:35:00	05:56:00	20:01:00	00:00:01	13:13:00	14:05:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/02/18	4	18:16:07	18:19:41	06:22:00	19:35:00	05:56:00	20:01:00	00:03:34	13:13:00	14:05:00	0.45	0.42	###################	####################
CFDS/C-2	S-2016	2016/02/19	1	07:58:05	07:58:06	06:23:00	19:34:00	05:57:00	20:00:00	00:00:01	13:11:00	14:03:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/02/19	2	11:44:38	11:44:40	06:23:00	19:34:00	05:57:00	20:00:00	00:00:02	13:11:00	14:03:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/02/19	3	12:16:01	12:18:30	06:23:00	19:34:00	05:57:00	20:00:00	00:02:29	13:11:00	14:03:00	0.31	0.29	###################	####################
CFDS/C-2	S-2016	2016/02/19	4	12:53:11	12:53:12	06:23:00	19:34:00	05:57:00	20:00:00	00:00:01	13:11:00	14:03:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/02/19	5	14:20:04	14:20:05	06:23:00	19:34:00	05:57:00	20:00:00	00:00:01	13:11:00	14:03:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/02/19	6	14:50:11	14:50:13	06:23:00	19:34:00	05:57:00	20:00:00	00:00:02	13:11:00	14:03:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/02/19	7	16:17:57	16:19:42	06:23:00	19:34:00	05:57:00	20:00:00	00:01:45	13:11:00	14:03:00	0.22	0.21	###################	####################
CFDS/C-2	S-2016	2016/02/20	1	06:47:32	06:48:42	06:24:00	19:33:00	05:58:00	19:59:00	00:01:10	13:09:00	14:01:00	0.15	0.14	###################	####################
CFDS/C-2	S-2016	2016/02/20	2	07:51:36	07:53:54	06:24:00	19:33:00	05:58:00	19:59:00	00:02:18	13:09:00	14:01:00	0.29	0.27	###################	####################
CFDS/C-2	S-2016	2016/02/20	3	08:05:35	08:06:44	06:24:00	19:33:00	05:58:00	19:59:00	00:01:09	13:09:00	14:01:00	0.15	0.14	###################	####################
CFDS/C-2	S-2016	2016/02/20	4	08:21:34	08:22:43	06:24:00	19:33:00	05:58:00	19:59:00	00:01:09	13:09:00	14:01:00	0.15	0.14	###################	####################
CFDS/C-2	S-2016	2016/02/20	5	10:02:34	10:03:44	06:24:00	19:33:00	05:58:00	19:59:00	00:01:10	13:09:00	14:01:00	0.15	0.14	###################	####################

CFDS/C-2	S-2016	2016/02/20	6	13:06:31	13:06:32	06:24:00	19:33:00	05:58:00	19:59:00	00:00:01	13:09:00	14:01:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/02/20	7	14:45:51	14:48:03	06:24:00	19:33:00	05:58:00	19:59:00	00:02:12	13:09:00	14:01:00	0.28	0.26	###################	####################
CFDS/C-2	S-2016	2016/02/20	8	15:41:03	15:41:05	06:24:00	19:33:00	05:58:00	19:59:00	00:00:02	13:09:00	14:01:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/02/20	9	16:08:17	16:08:19	06:24:00	19:33:00	05:58:00	19:59:00	00:00:02	13:09:00	14:01:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/02/20	10	16:37:02	16:38:12	06:24:00	19:33:00	05:58:00	19:59:00	00:01:10	13:09:00	14:01:00	0.15	0.14	###################	####################
CFDS/C-2	S-2016	2016/02/20	11	17:41:07	17:42:27	06:24:00	19:33:00	05:58:00	19:59:00	00:01:20	13:09:00	14:01:00	0.17	0.16	###################	####################
CFDS/C-2	S-2016	2016/02/20	12	18:39:16	18:40:46	06:24:00	19:33:00	05:58:00	19:59:00	00:01:30	13:09:00	14:01:00	0.19	0.18	###################	####################
CFDS/C-2	S-2016	2016/02/21	1	14:42:53	14:42:54	06:25:00	19:32:00	05:59:00	19:58:00	00:00:01	13:07:00	13:59:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/02/21	2	16:29:21	16:30:36	06:25:00	19:32:00	05:59:00	19:58:00	00:01:15	13:07:00	13:59:00	0.16	0.15	###################	####################
CFDS/C-2	S-2016	2016/02/22	1	11:04:54	11:05:01	06:26:00	19:31:00	06:00:00	19:56:00	00:00:07	13:05:00	13:56:00	0.01	0.01	###################	####################
CFDS/C-2	S-2016	2016/02/22	2	11:26:30	11:30:24	06:26:00	19:31:00	06:00:00	19:56:00	00:03:54	13:05:00	13:56:00	0.5	0.47	###################	####################
CFDS/C-2	S-2016	2016/02/22	3	11:53:23	11:53:24	06:26:00	19:31:00	06:00:00	19:56:00	00:00:01	13:05:00	13:56:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/02/22	4	12:07:28	12:10:43	06:26:00	19:31:00	06:00:00	19:56:00	00:03:15	13:05:00	13:56:00	0.41	0.39	###################	####################
CFDS/C-2	S-2016	2016/02/22	5	13:25:48	13:25:49	06:26:00	19:31:00	06:00:00	19:56:00	00:00:01	13:05:00	13:56:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/02/22	6	17:53:09	17:54:18	06:26:00	19:31:00	06:00:00	19:56:00	00:01:09	13:05:00	13:56:00	0.15	0.14	###################	####################
CFDS/C-2	S-2016	2016/02/22	7	18:52:11	18:52:13	06:26:00	19:31:00	06:00:00	19:56:00	00:00:02	13:05:00	13:56:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/02/23	1	10:27:41	10:29:29	06:27:00	19:29:00	06:01:00	19:55:00	00:01:48	13:02:00	13:54:00	0.23	0.22	###################	####################
CFDS/C-2	S-2016	2016/02/23	2	10:46:34	10:47:52	06:27:00	19:29:00	06:01:00	19:55:00	00:01:18	13:02:00	13:54:00	0.17	0.16	###################	####################
CFDS/C-2	S-2016	2016/02/23	3	16:17:10	16:17:11	06:27:00	19:29:00	06:01:00	19:55:00	00:00:01	13:02:00	13:54:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/02/23	4	18:03:35	18:06:02	06:27:00	19:29:00	06:01:00	19:55:00	00:02:27	13:02:00	13:54:00	0.31	0.29	###################	####################
CFDS/C-2	S-2016	2016/02/24	1	06:59:12	07:00:21	06:28:00	19:28:00	06:02:00	19:54:00	00:01:09	13:00:00	13:52:00	0.15	0.14	###################	####################
CFDS/C-2	S-2016	2016/02/24	2	11:12:54	11:24:49	06:28:00	19:28:00	06:02:00	19:54:00	00:11:55	13:00:00	13:52:00	1.53	1.43	###################	####################
CFDS/C-2	S-2016	2016/02/24	3	14:36:04	14:36:06	06:28:00	19:28:00	06:02:00	19:54:00	00:00:02	13:00:00	13:52:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/02/24	4	15:44:50	15:47:44	06:28:00	19:28:00	06:02:00	19:54:00	00:02:54	13:00:00	13:52:00	0.37	0.35	###################	####################
CFDS/C-2	S-2016	2016/02/24	5	17:26:50	17:26:51	06:28:00	19:28:00	06:02:00	19:54:00	00:00:01	13:00:00	13:52:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/02/25	1	09:10:51	09:10:52	06:29:00	19:27:00	06:03:00	19:53:00	00:00:01	12:58:00	13:50:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/02/25	2	10:34:06	10:36:20	06:29:00	19:27:00	06:03:00	19:53:00	00:02:14	12:58:00	13:50:00	0.29	0.27	###################	####################
CFDS/C-2	S-2016	2016/02/25	3	12:07:18	12:17:28	06:29:00	19:27:00	06:03:00	19:53:00	00:10:10	12:58:00	13:50:00	1.31	1.22	###################	####################
CFDS/C-2	S-2016	2016/02/25	4	14:12:09	14:12:10	06:29:00	19:27:00	06:03:00	19:53:00	00:00:01	12:58:00	13:50:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/02/25	5	14:24:00	14:25:18	06:29:00	19:27:00	06:03:00	19:53:00	00:01:18	12:58:00	13:50:00	0.17	0.16	###################	####################
CFDS/C-2	S-2016	2016/02/25	6	18:48:00	18:48:02	06:29:00	19:27:00	06:03:00	19:53:00	00:00:02	12:58:00	13:50:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/02/26	1	11:04:29	11:04:30	06:30:00	19:26:00	06:04:00	19:51:00	00:00:01	12:56:00	13:47:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/02/26	2	11:50:30	11:50:32	06:30:00	19:26:00	06:04:00	19:51:00	00:00:02	12:56:00	13:47:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/02/26	3	14:52:51	14:52:53	06:30:00	19:26:00	06:04:00	19:51:00	00:00:02	12:56:00	13:47:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/02/26	4	16:26:29	16:26:31	06:30:00	19:26:00	06:04:00	19:51:00	00:00:02	12:56:00	13:47:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/02/27	1	08:10:49	08:10:51	06:31:00	19:25:00	06:05:00	19:50:00	00:00:02	12:54:00	13:45:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/02/27	2	09:42:08	09:43:18	06:31:00	19:25:00	06:05:00	19:50:00	00:01:10	12:54:00	13:45:00	0.15	0.14	###################	####################
CFDS/C-2	S-2016	2016/02/27	3	13:43:19	13:43:21	06:31:00	19:25:00	06:05:00	19:50:00	00:00:02	12:54:00	13:45:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/02/27	4	15:38:54	15:41:56	06:31:00	19:25:00	06:05:00	19:50:00	00:03:02	12:54:00	13:45:00	0.39	0.37	###################	####################
CFDS/C-2	S-2016	2016/02/27	5	18:28:24	18:30:03	06:31:00	19:25:00	06:05:00	19:50:00	00:01:39	12:54:00	13:45:00	0.21	0.20	###################	####################
CFDS/C-2	S-2016	2016/02/28	1	10:46:10	10:46:12	06:31:00	19:23:00	06:06:00	19:49:00	00:00:02	12:52:00	13:43:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/02/28	2	14:24:55	14:25:01	06:31:00	19:23:00	06:06:00	19:49:00	00:00:06	12:52:00	13:43:00	0.01	0.01	###################	####################
CFDS/C-2	S-2016	2016/02/28	3	14:56:57	14:56:58	06:31:00	19:23:00	06:06:00	19:49:00	00:00:01	12:52:00	13:43:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/02/28	4	15:35:32	15:35:33	06:31:00	19:23:00	06:06:00	19:49:00	00:00:01	12:52:00	13:43:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/02/28	5	18:51:54	18:53:02	06:31:00	19:23:00	06:06:00	19:49:00	00:01:08	12:52:00	13:43:00	0.15	0.14	###################	####################
CFDS/C-2	S-2016	2016/02/29	1	14:30:21	14:30:23	06:32:00	19:22:00	06:07:00	19:48:00	00:00:02	12:50:00	13:41:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/02/29	2	18:34:37	18:35:50	06:32:00	19:22:00	06:07:00	19:48:00	00:01:13	12:50:00	13:41:00	0.16	0.15	###################	####################
CFDS/C-2	S-2016	2016/03/01	1	08:27:46	08:29:03	06:33:00	19:21:00	06:08:00	19:46:00	00:01:17	12:48:00	13:38:00	0.17	0.16	###################	####################
CFDS/C-2	S-2016	2016/03/01	2	09:04:40	09:05:48	06:33:00	19:21:00	06:08:00	19:46:00	00:01:08	12:48:00	13:38:00	0.15	0.14	###################	####################
CFDS/C-2	S-2016	2016/03/01	3	14:32:23	14:32:24	06:33:00	19:21:00	06:08:00	19:46:00	00:00:01	12:48:00	13:38:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/03/01	4	16:00:45	16:00:46	06:33:00	19:21:00	06:08:00	19:46:00	00:00:01	12:48:00	13:38:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/03/01	5	16:12:02	16:15:15	06:33:00	19:21:00	06:08:00	19:46:00	00:03:13	12:48:00	13:38:00	0.42	0.39	###################	####################
CFDS/C-2	S-2016	2016/03/01	6	17:14:17	17:14:18	06:33:00	19:21:00	06:08:00	19:46:00	00:00:01	12:48:00	13:38:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/03/01	7	18:24:15	18:24:16	06:33:00	19:21:00	06:08:00	19:46:00	00:00:01	12:48:00	13:38:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/03/02	0	00:00:00	00:00:00	06:34:00	19:20:00	06:09:00	19:45:00	00:00:00	12:46:00	13:36:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/03/03	0	00:00:00	00:00:00	06:35:00	19:18:00	06:09:00	19:44:00	00:00:00	12:43:00	13:35:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/03/04	0	00:00:00	00:00:00	06:36:00	19:17:00	06:10:00	19:42:00	00:00:00	12:41:00	13:32:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/03/05	1	13:45:00	13:46:14	06:37:00	19:16:00	06:11:00	19:41:00	00:01:14	12:39:00	13:30:00	0.16	0.15	###################	####################
CFDS/C-2	S-2016	2016/03/06	1	09:20:42	09:38:56	06:37:00	19:15:00	06:12:00	19:40:00	00:18:14	12:38:00	13:28:00	2.41	2.26	###################	####################
CFDS/C-2	S-2016	2016/03/06	2	10:41:32	10:45:19	06:37:00	19:15:00	06:12:00	19:40:00	00:03:47	12:38:00	13:28:00	0.5	0.47	###################	####################
CFDS/C-2	S-2016	2016/03/06	3	12:26:32	12:28:32	06:37:00	19:15:00	06:12:00	19:40:00	00:02:00	12:38:00	13:28:00	0.26	0.25	###################	####################
CFDS/C-2	S-2016	2016/03/06	4	13:16:31	13:16:32	06:37:00	19:15:00	06:12:00	19:40:00	00:00:01	12:38:00	13:28:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/03/07	1	09:11:36	09:11:37	06:38:00	19:13:00	06:13:00	19:38:00	00:00:01	12:35:00	13:25:00	0	0.00	###################	####################

CFDS/C-2	S-2016	2016/03/07	2	09:40:11	09:40:12	06:38:00	19:13:00	06:13:00	19:38:00	00:00:01	12:35:00	13:25:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/03/07	3	13:02:03	13:02:05	06:38:00	19:13:00	06:13:00	19:38:00	00:00:02	12:35:00	13:25:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/03/08	1	11:26:56	11:26:57	06:39:00	19:12:00	06:14:00	19:37:00	00:00:01	12:33:00	13:23:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/03/08	2	17:41:23	17:41:24	06:39:00	19:12:00	06:14:00	19:37:00	00:00:01	12:33:00	13:23:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/03/09	1	17:51:04	17:51:05	06:40:00	19:11:00	06:15:00	19:36:00	00:00:01	12:31:00	13:21:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/03/10	1	09:14:06	09:14:07	06:41:00	19:09:00	06:15:00	19:34:00	00:00:01	12:28:00	13:19:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/03/10	2	13:02:26	13:02:28	06:41:00	19:09:00	06:15:00	19:34:00	00:00:02	12:28:00	13:19:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/03/10	3	15:19:00	15:19:02	06:41:00	19:09:00	06:15:00	19:34:00	00:00:02	12:28:00	13:19:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/03/10	4	18:28:28	18:28:29	06:41:00	19:09:00	06:15:00	19:34:00	00:00:01	12:28:00	13:19:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/03/11	1	08:17:41	08:17:42	06:41:00	19:08:00	06:16:00	19:33:00	00:00:01	12:27:00	13:17:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/03/11	2	18:35:46	18:35:47	06:41:00	19:08:00	06:16:00	19:33:00	00:00:01	12:27:00	13:17:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/03/12	0	00:00:00	00:00:00	06:42:00	19:07:00	06:17:00	19:32:00	00:00:00	12:25:00	13:15:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/03/13	1	09:21:16	09:22:25	06:43:00	19:05:00	06:18:00	19:30:00	00:01:09	12:22:00	13:12:00	0.15	0.15	###################	####################
CFDS/C-2	S-2016	2016/03/13	2	11:15:10	11:15:11	06:43:00	19:05:00	06:18:00	19:30:00	00:00:01	12:22:00	13:12:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/03/13	3	13:40:18	13:40:20	06:43:00	19:05:00	06:18:00	19:30:00	00:00:02	12:22:00	13:12:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/03/14	1	11:15:25	11:15:27	06:44:00	19:04:00	06:19:00	19:29:00	00:00:02	12:20:00	13:10:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/03/14	2	11:40:27	11:40:48	06:44:00	19:04:00	06:19:00	19:29:00	00:00:21	12:20:00	13:10:00	0.05	0.04	###################	####################
CFDS/C-2	S-2016	2016/03/15	1	08:28:05	08:28:06	06:45:00	19:03:00	06:20:00	19:28:00	00:00:01	12:18:00	13:08:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/03/15	2	11:00:00	11:00:01	06:45:00	19:03:00	06:20:00	19:28:00	00:00:01	12:18:00	13:08:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/03/16	0	00:00:00	00:00:00	06:45:00	19:01:00	06:20:00	19:26:00	00:00:00	12:16:00	13:06:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/03/17	0	00:00:00	00:00:00	06:46:00	19:00:00	06:21:00	19:25:00	00:00:00	12:14:00	13:04:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/03/18	1	07:31:12	07:31:13	06:47:00	18:59:00	06:22:00	19:23:00	00:00:01	12:12:00	13:01:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/03/18	2	08:58:27	08:58:29	06:47:00	18:59:00	06:22:00	19:23:00	00:00:02	12:12:00	13:01:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/03/19	1	10:29:33	10:29:34	06:48:00	18:57:00	06:23:00	19:22:00	00:00:01	12:09:00	12:59:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/03/19	2	11:09:12	11:19:11	06:48:00	18:57:00	06:23:00	19:22:00	00:09:59	12:09:00	12:59:00	1.37	1.28	###################	####################
CFDS/C-2	S-2016	2016/03/20	0	00:00:00	00:00:00	06:48:00	18:56:00	06:24:00	19:21:00	00:00:00	12:08:00	12:57:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/03/21	0	00:00:00	00:00:00	06:49:00	18:54:00	06:24:00	19:19:00	00:00:00	12:05:00	12:55:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/03/22	1	09:20:31	09:20:32	06:50:00	18:53:00	06:25:00	19:18:00	00:00:01	12:03:00	12:53:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/03/23	1	17:08:03	17:08:04	06:51:00	18:52:00	06:26:00	19:17:00	00:00:01	12:01:00	12:51:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/03/24	1	11:09:19	11:09:20	06:52:00	18:50:00	06:27:00	19:15:00	00:00:01	11:58:00	12:48:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/03/24	2	12:26:03	12:26:04	06:52:00	18:50:00	06:27:00	19:15:00	00:00:01	11:58:00	12:48:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/03/25	1	17:39:48	17:40:00	06:52:00	18:49:00	06:27:00	19:14:00	00:00:12	11:57:00	12:47:00	0.03	0.03	###################	####################
CFDS/C-2	S-2016	2016/03/26	0	00:00:00	00:00:00	06:53:00	18:48:00	06:28:00	19:13:00	00:00:00	11:55:00	12:45:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/03/27	1	10:50:14	10:51:37	06:54:00	18:46:00	06:29:00	19:11:00	00:01:23	11:52:00	12:42:00	0.19	0.18	###################	####################
CFDS/C-2	S-2016	2016/03/27	2	11:22:00	11:22:01	06:54:00	18:46:00	06:29:00	19:11:00	00:00:01	11:52:00	12:42:00	0	0.00	###################	####################
CFDS/C-2	S-2016	2016/03/27	3	11:23:18	11:24:26	06:54:00	18:46:00	06:29:00	19:11:00	00:01:08	11:52:00	12:42:00	0.16	0.15	###################	####################
CFDS/C-2	S-2016	2016/03/28	1	15:20:14	15:25:38	06:55:00	18:45:00	06:30:00	19:10:00	00:05:24	11:50:00	12:40:00	0.7	0.71	###################	####################
CFDS/C-2	S-2016	2016/03/28	2	16:57:38	17:00:01	06:55:00	18:45:00	06:30:00	19:10:00	00:02:23	11:50:00	12:40:00	0.31	0.31	###################	####################
CFDS/C-2	S-2016	2016/03/29	1	08:11:19	08:11:20	06:55:00	18:44:00	06:30:00	19:09:00	00:00:01	11:49:00	12:39:00	0	0.00	###################	####################

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