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‘Might is Right’.

A study of the Cape Town/Crozets elephant seal oil trade (1832–1869).

BY

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A dissertation submitted in fulfilment
of the requirements for the award of the degree of
Master of Arts in Historical Studies.

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Compulsory Declaration.

This work has not been previously submitted in whole, or in part, for the award of any degree. It is my own work. Each significant contribution to, and quotation in, this dissertation from the work, or works, of other people has been attributed, and has been cited and referenced.

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Abstract

This thesis is the study of Cape involvement in the elephant seal oil trade on the Prince Edward Islands and Crozet Islands between the years 1832–1869. The Cape Town/Crozets elephant seal oil trade was a lucrative branch of the Cape Colony's fisheries yet no research has been done on the topic and this work attempts to fill this lacuna and positions Cape sea elephanting in a broader transnational context in a way similar to Briton Cooper Busch on American sealing and can be seen as a first step in determining the aggregate economic value of the sealing industry in the Antarctic region.

A thorough analysis of the contemporary local maritime journal of record, the *Cape of Good Hope and Port Natal Shipping and Mercantile Gazette*, has led to the discovery of 100 voyages that were made to the Crozets by Cape sealers. Through the use of shipping manifests and a variety of court cases and memoranda this thesis has obtained enough information on the amount of elephant seal oil returned to the Cape to use statistical models to determine the amount of elephant seals killed on the islands. This work has also incorporated research on elephant seal biology in order to determine the annual cycle of the southern elephant seals in order to demonstrate how Cape sealers adapted to this cycle in order to maximise their yields. The use of interdisciplinary research has allowed for a far richer analysis of the topic than would otherwise have been possible.

A quantitative and qualitative analysis of the Cape Town/Crozets elephant seal oil trade has allowed us to determine that the termination of the trade in 1869 was driven by economics rather than overharvesting of the stock. It has also allowed us to map the rise and fall of the merchants involved in the trade as well as allowing us an insight into what life was like for Cape sealers en route to and on the Crozets.

Despite the close link Cape Town has had historically with the sea, the writing of Cape history has followed the western historiographical canon laid down by the end of the nineteenth century in which history ended at the edge of the continents and dwelt almost exclusively on the interiors. This work attempts to erode this historiographical canon by emphasising the role of the ocean as an economic frontier in the context of the Cape Colony.

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Introduction

When this project began, the intention was to write the history of the nineteenth century sealing trade on the coast of southern Africa. However, it soon became clear that substantial work had already been done on this topic but almost nothing on a long forgotten sealing frontier – that of the elephant seal oil trade between Cape Town and the Prince Edward and Crozet Islands in the second third of the nineteenth century. This trade, known informally as ‘sea elephanting’, was considered by the contemporary press to be one of the major fishing industries at the Cape and was often mentioned in the local maritime journal of record the *Cape of Good Hope and Port Natal Shipping and Mercantile Gazette*. John Jearey, a merchant that had a near monopoly on the elephant seal oil trade between 1838–1858, was commended by the journal more than once for the success of his ‘sea elephant fishery at the Crozets’.¹ The *Gazette* even went so far as claiming in an article regarding the state of the Cape Colony’s industries that the fisheries branch was in a highly promising state due to Jearey’s fishery and that Jearey “may be called the founder of this lucrative branch”.² American sealers also remarked on the success of Jearey’s fisheries on the islands and Washington Fosdick of the *Emeline*, while on a sea elephanting voyage at the Crozets, stated in his journal that “all these islands have been worked at various times by a party of Englishmen from the Cape of Good Hope under the orders of an individual from that place, who has amassed a large

¹ *Cape of Good Hope Shipping List*, No. 174, 12 May 1843 and No. 194, 3 November 1843

² *Cape of Good Hope and Port Natal Shipping and Mercantile Gazette*, No. 108, 23 January 1846.

fortune”.³ Jearey’s sealing gangs were also often referred to by those shipwrecked on the islands and rescued by his gangs.⁴

Despite this, Cape involvement in the sea elephanting trade in the nineteenth century was soon forgotten. In Wardlaw Thompson’s history of the sea fisheries of the Cape Colony published in 1913, the sea elephanting trade is not even mentioned.⁵ So it is perhaps not surprising that otherwise thorough analysis of the exploitation of seals, elephant seals and whales at the Crozet Islands and the Prince Edward Islands by Rhys Richards make no mention of the Cape’s significant involvement in the elephant seal oil trade.⁶ The number of vessels sent by Cape merchants to the Crozets and the fact that they managed to repel American crews from ‘their’ beaches suggests that the Cape sealers influence on the islands was far larger than has hitherto been recognised. This lacuna extends to the secondary literature on the history of sealing in southern Africa by Best,⁷ Shaughnessy,⁸ and David and van Sittert,⁹ which has focused on the exploitation of fur seals along the South African coast. This thesis fills this lacuna and positions Cape sea elephanting in a

³ See *Cape of Good Hope and Port Natal Shipping and Mercantile Gazette*, No. 4, 26 January 1844 and Arthur C. Watson, ‘A Voyage on the Sealer *Emeline* and the journal from Washington Fosdick’s manuscript preserved in the museum of the old Dartmouth Historical Society at New Bedford’, *New York Zoological Society*, Vol. 9 (1931), pp. 475-549, at page 482.

⁴ See for example James Read’s letter to his father regarding the wreck of the *Richard Dart* on Prince Edward’s Island in 1849. *Cape of Good Hope and Port Natal Shipping and Mercantile Gazette*, No. 307, 16 November 1849

⁵ W. Wardlaw Thompson, *The Sea Fisheries of the Cape Colony From Van Riebeeck’s Days to the Eve of the Union*.

⁶ Rhys Richards, ‘The Commercial Exploitation of Sea Mammals at Iles Crozet and Prince Edward Islands before 1850’, *Polar Monographs 1* 1992.

⁷ P.B. Best, ‘Seals and Sealing in South and South West Africa’ in *South African Shipping News and Fishing Industry Review* 28 (12), pp. 49-57.

⁸ P.D. Shaughnessy, ‘The Status of Seals in South Africa and Namibia, Cape (South African) Fur Seal’ in *Mammals in the Seas: Volume II: Pinniped Species Summaries and Report on Sirenians*.

⁹ Jeremy David and Lance van Sittert, (Mar./Apr. 2008) ‘A reconstruction of the Cape (South African) fur seal harvest 1653-1899 and a comparison with the 20th-century harvest’ in *South African Journal of Science* 104, pp. 107-110.

broader transnational context in a way similar to Busch on American sealing.¹⁰ While most historical research on sealing in southern Africa has focussed on accurately determining the number of seals killed with a view to determining the historic population levels in order to provide policy guidelines for population management in the present, this thesis – while estimating the number of elephant seals killed by Cape sealers on the Crozets – also focuses on the social and economic aspects of sealing in order to elucidate what the main drivers behind the establishment and fall of the Cape sea elephanting trade were.

While the harvesting of elephant seals for their oil by Cape sealers was no doubt substantial, it is the contention of this thesis that shifts in demand and price were responsible for the termination of the Cape/Crozets elephant seal oil trade rather than the overexploitation of elephant seals. Basberg and Headland have pointed out how so far, no one has managed to work out the aggregate economic value of the sealing industry in the Antarctic region.¹¹ Their aim is to view the Antarctic as an economic region, but this cannot be done without making an inventory of all the vessels sent to the region and of their catches. This work will hopefully be one of many small steps needed in order to produce an inventory detailed enough to accurately estimate the economic significance of this region. Basberg and Headland's preliminary analysis on the subject suggests that oil extracted from elephant seals was more important economically relative to furs and whale

¹⁰ Briton Cooper Busch, *The War Against the Seals: A History of the North American Seal Fishery*.

¹¹ Bjørn L. Basberg and Robert K. Headland, 'The 19th Century Antarctic Sealing Industry: Sources, Data and Economic Significance', in *NHH Dept. of Economics Discussion Paper No. 21/2008*, at page 2.

oil than had been hitherto acknowledged.¹² This all suggests that the Cape sealing trade had a greater economic importance than the likes of Wardlaw Thompson accorded it.

That the sealing trade both on the southern African coast and at the Crozets developed in the first third of the nineteenth century should not come as a surprise considering that the Cape had recently been annexed by Britain. As has been pointed out by Hainsworth in his analysis of the New South Wales sealing industry between 1800–1821, most of those involved in the sealing trade in Australia (as was the case at the Cape) were Britons who had only recently left the metropole and who were conscious of British maritime tradition and saw the ocean as a more familiar and hopeful source of gain than the alien and mysterious interior.¹³ Despite the close link Cape Town has had historically with the sea, the writing of Cape history followed the western historiographical canon laid down by the end of the nineteenth century in which history began and ended at the edge of continents and dwelt almost exclusively on the interiors.¹⁴ This historiographical canon has slowly been eroded as work by the likes of Hainsworth and Young in Australia have begun to focus on the ocean as an economic frontier and this work aims to continue this tradition of emphasising the role of the ocean as an economic frontier in the context of the Cape Colony.¹⁵

¹² Bjørn L. Basberg and Robert K. Headland, 'The 19th Century Antarctic Sealing Industry: Sources, Data and Economic Significance', in *NHH Dept. of Economics Discussion Paper No. 21/2008*, at page 24.

¹³ D.R. Hainsworth, 'Exploiting the Pacific Frontier: The New South Wales Sealing Industry 1800–1821' in *The Journal of Pacific History*, Vol. 2, pp. 59–75.

¹⁴ John R. Gillis, 'Islands in the Making of an Atlantic Oceania, 1500-1800' in Jerry H. Bentley, Renate Bridenthal, and Kären Wigen (eds.), *Seascapes: Maritime Histories, Littoral Cultures, and Transoceanic Exchanges*, at page 22.

¹⁵ John M.R. Young, *Australia's Pacific frontier; economic and cultural expansion into the Pacific, 1795-1885*.

A recent upsurge in interest in the Prince Edward Islands has led to research being undertaken regarding the archaeological significance of sealing sites and shipwrecks by Boshoff,¹⁶ Cooper and Avery,¹⁷ and Graham.¹⁸ However, none of their works have tried to understand the lives of those responsible for leaving behind these remains and how they survived on the islands. Cooper and Avery as well as Graham have made incomplete lists of some of the vessels that sojourned on the Prince Edward Islands without recognising that the Prince Edward Islands were not seen by Cape sealers in isolation, but rather as part of a much larger field of operation that included the Crozet Islands. Hence many of the vessels listed as going to the Crozet Islands would also have worked the Prince Edward Islands. This thesis corrects these gaps in existing historical reconstructions through a close analysis of the Commercial Exchange Shipping Registers and *Cape of Good Hope and Port Natal Shipping and Mercantile Gazette*. Graham's thesis goes so far as to state that, due to the incomplete nature of the shipping manifests of vessels that went to the Crozets, it would be impossible to estimate how much oil was taken off the islands. However, through the use of statistical modelling and the literature on elephant seal biology, this thesis demonstrates that it is not only possible to estimate of how much oil was taken by Cape sealers, but also of how many elephant seals were killed in the process.

¹⁶ J.J. Boshoff & J.A. Van Schalkwyk, *The Archaeology of Sealing Sites on Marion Island*, Unpublished Report to the South African Heritage Resources Agency.

¹⁷ J. Cooper and G. Avery (eds.), *Historical Sites at the Prince Edward Islands*, South African National Scientific Programmes Report No. 128.

¹⁸ Tom Graham, *Cultural Resource Management of the Prince Edward Islands*.

Elephant seal biology is dealt with in the first chapter which contains a brief outline of the annual cycle of the southern elephant seal. By comparing current biology to that described by nineteenth century sources it is clear that the annual cycle of the southern elephant seal has not changed significantly. This cycle is also crucial to understanding the patterns in voyages made to the Crozet and Prince Edward Islands by Cape sealers. The latter adapted their production process to ensure that they were on the islands during those periods in the year when elephant seals were at their largest and most numerous.

The Cape Town/Crozets sea elephanting trade did not occur in a vacuum but formed part of a much larger sealing and whaling trade that was global in scope. Chapter 2 offers a periodisation of this trade in order to locate both the Southern Ocean and Cape Town in this broader context. Southern Ocean sealing was driven by publication of the voyages of discovery which identified new sealing grounds, though often, sealers themselves embarked on voyages of discovery in search of new rookeries. The age of exploration in other words was closely followed by the age of exploitation. By the time that Cape vessels appeared in the Southern Ocean, the majority of the sub-Antarctic islands had already been discovered and their fur seal populations hunted to the brink of extinction, leaving elephant seals (whose blubber was rendered down to produce oil used both for lighting and as an industrial lubricant) as the main exploitable resource. Cape-based sea elephanting voyages were confined almost entirely to the Prince Edward and Crozet Islands. The term 'Crozets' encompassed both island groups, which were viewed as a single field of enterprise by the Cape sealers.

Chapter 3 analyses the Cape shipping registers to divide the sea elephanting trade into three distinct periods. The first (1832–1838) was far from successful as Cape merchants entered the trade for the first time and failed due to a lack of knowledge and experience about how to conduct such an enterprise. The second period (1838–1858) was dominated by one man, the Cape Town merchant John Jearey, until the introduction of gas lighting to Cape Town, and various other financial setbacks caused him to withdraw from the Crozets in 1858. Towards the end of this period elephant seal oil became an export item, with the bulk of the Cape-produced oil in the late 1840s and 1850s being shipped to Britain as the demand in Cape Town dwindled. The final late revival in the trade (1865–1869) was in response to a spike in the price of oil in London and ended when the bubble burst.

Chapter 4 moves from a quantitative to a qualitative analysis of the elephant seal oil trade. This chapter examines the conditions that the sealers lived under - both on the vessels and on the islands - through an analysis of court cases and shipwreck narratives published in the Cape maritime press. Shipwreck narratives and logbooks of American and British vessels are also employed to demonstrate that knowledge of how to exploit the resources of the Crozets was crucial for the survival of sealers and the success of sea elephanting enterprises.

The final chapter of this work quantifies the number of elephant seals killed by the Cape based sealers on the Crozets. Due to the fact that not all Cape vessels returning from the islands listed the quantity of elephant seal oil, it was necessary to estimate the missing

cargoes. It is estimated that 4955 tons of elephant seal oil were produced by Cape sealers on the Crozets between the years 1832–1869. Statistical models have been developed to estimate the number of elephant seals necessary to produce this cargo. The thesis estimates a minimum harvest over the period 1832–1869 of 8258 elephant seals and a maximum take of 28931 animals.

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Chapter 1: The natural history of the southern elephant seal and its human hunters

1.1) Introduction

To understand sea elephanting, it is crucial to understand the annual cycle of the elephant seal. Their seasonal movements govern the movements of their human hunters. What follows is thus a summary of seal biology, with the focus being on the annual cycle of the southern elephant seal *Mirounga leonina*, one of eight seal species in the Southern Ocean. Four of these – the crabeater seal *Lobodon carcinophagus*, the leopard seal *Hydrurga leptonyx*, the Ross seal *Ommatophoca rossii* and the Weddell seal *Leptonychotes weddellii* – occur primarily south of the Antarctic Convergence, and were inaccessible to commercial sealers in the nineteenth century.¹⁹ Three Southern Ocean seal species were commercially hunted in the nineteenth century – the Antarctic (or Kerguelen) fur seal *Arctocephalus gazella*, the sub-Antarctic (also known as the Amsterdam) fur seal *Arctocephalus tropicalus*, and the southern elephant seal. The two fur seal species (whose fur was described as being “rich and the under fur thick and abundant” and was far more valuable than the “short and poor” quality fur of the South African fur seal *Arctocephalus pusillus*) were rarely taken by Cape-based sealers who only entered Southern Ocean sealing after fur seal populations had already been hunted to the brink of extinction.²⁰ The primary target of Cape sealers therefore was the southern elephant seal.

¹⁹ Marianne Riedman, *The Pinnipeds: Seals, Sea Lions and Walruses*, at page 77, and Donald B. Siniff, ‘An Overview of the Ecology of Antarctic Seals’, *American Zoologist*, Vol. No. 31, No. 1 (1991), pp. 143-149, at page 148.

²⁰ Henry Poland, *Fur-Bearing Animals in Nature and Commerce*, at pages 173 and 203.

The main reason for the late arrival of Cape sealers on the Southern Ocean sealing frontier was the monopolistic practice of the Dutch East India Company (VOC). The VOC prohibited colonists from chartering or outfitting their own ships for trade in Eastern waters and this prohibition was only lifted in 1792, two decades after the sealing trade first opened up on the sub-Antarctic islands in the Indian Ocean in the late 1770s.²¹ Under British administration, the position of Cape Town's merchant community remained parlous, due partly to the English East India Company's monopoly on eastern goods resulting in numerous bankruptcies among the British settlers in the town.²² These conditions were not conducive to Cape Town merchants entering Southern Ocean sealing, which required substantial start-up capital ventured at high risk. When Cape merchants finally moved onto the Southern Ocean frontier in the third decade of the nineteenth century, only the southern elephant seal remained in sufficient numbers for commercial exploitation.

1.2) The southern elephant seal *Mirounga leonine*

1.2.1) Nomenclature

The name '*Mirounga*' comes from the Australian native name for the elephant seal, which is Miouroung (a name given by the anatomist James Gray in 1827),²³ while

²¹ Robert Ross, 'The Cape of Good Hope and the World Economy' in Richard Elphick and Hermann Giliomee, *The Shaping of South African Society, 1652-1840*, at page 246, and Thomson C. Wyville, J. Marray, *The Voyage of the H.M.S. Challenger 1873-1876. Narrative Vol. 1*, at page 292.

²² Robert Ross, 'The Cape of Good Hope and the World Economy' in Richard Elphick and Hermann Giliomee, *The Shaping of South African Society, 1652-1840*, at page 266.

²³ Nigel Bonner, *Seals and Sea Lions of the World*, at page 121.

'*leonina*' means lion like (which refers to both their size and their roaring).²⁴ The loud roaring of the male elephant seal is made possible by its prominent proboscis, an inflatable nasal sac which, when limp, overhangs the mouth but when inflated, acts as a resonating chamber (Fig. 1.1).²⁵ This sound explains why the regal lion's name was appropriated for this rather less regal creature of the sub-Antarctic. Nigel Bonner, however, believes that '*leonina*' was applied due to confusion over Anson's description of a sea lion in the Falkland Islands (an animal which is certainly more lion-like than its neighbour the sea elephant).²⁶



*Figure 1.1: The distinctive proboscis of the male southern elephant seal.*²⁷

²⁴ John D. Skinner and Christian T. Chimimba, *The Mammals of the Southern African Subregion*, at page 519.

²⁵ Richard J. Harrison and Judith E. King, *Marine Mammals*, at page 115.

²⁶ Nigel Bonner, *Seals and Sea Lions of the World*, at page 121.

²⁷ *Ibid*, at page 122.

There are two species of elephant seal, the northern elephant seal *Mirounga angustirostris*, and the southern elephant seal *Mirounga leonina*. The former occurs mostly on the eastern side of the North Pacific Ocean along the western seaboard of the United States, while the latter occurs throughout the Southern Ocean (Fig. 1.2).²⁸ Since Cape sealers only hunted southern elephant seals, the term ‘elephant seal’ in the chapters that follow will refer to the southern elephant seal.

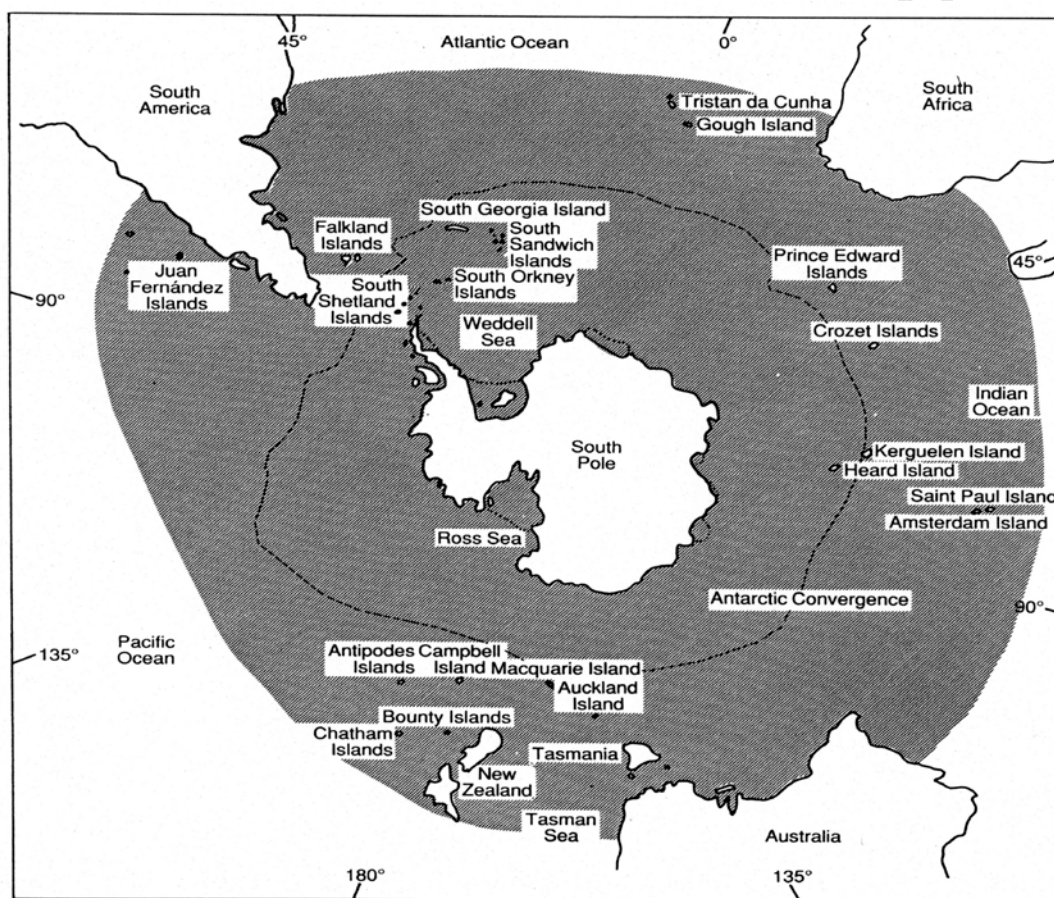


Figure 1.2: Distribution of the southern elephant seal.²⁹

²⁸ John D. Skinner and Christian T. Chimimba, *The Mammals of the Southern African Subregion*, at page 519.

²⁹ Marianne Riedman, *The Pinnipeds: Seals, Sea Lions and Walruses*, at page 76.

1.2.2) Distribution

Modern science recognises four distinct populations of southern elephant seals on the basis of their genetic divergence and the limited gene flow between them:³⁰ the Peninsula Valdés population in Argentina and the Falklands; the South Georgia population; the Kerguelen population, found throughout the southern Indian Ocean on Iles Crozet, Iles Kerguelen, Heard Island and the Prince Edward Islands; and the Macquarie population on Macquarie Island.³¹ Because there is no evidence that Cape sealers hunted substantial numbers of elephant seals at any islands other than the Prince Edward Islands, Crozet Islands, Kerguelen Island, and Heard Island,^{*} we can assume that Cape sea elephanting⁺ was concentrated on the so-called ‘Kerguelen population’.

Although a few voyages were made to Heard and Kerguelen Islands by Cape vessels in the nineteenth century, the large majority of Cape sea elephanting took place on the Prince Edward and Crozet Islands. The Prince Edward Islands consist of two islands. The larger, Marion Island, measures 24 km by 17 km, with a surface area of 290 km²,³² while Prince Edward Island, lying 22 km north-northeast, is one sixth the size of Marion with a

³⁰ See Clive McMahon, Harry R. Burton, Marthan N. Bester, ‘A Demographic Comparison of Two Southern Elephant Seal Populations’, *The Journal of Animal Ecology*, Vol. 72, No. 1 (Jan., 2003), pp. 61-74, at page 62 and Nicholas J. Gales, Mark Adams, and Harry Burton, ‘Genetic Relatedness of Two Populations of the Southern Elephant Seal *Mirounga Leonina*’, *Marine Mammal Science*, Vol. 5, Issue 1, pp. 57-67, at page 57.

³¹ See John D. Skinner and Christian T. Chimimba, *The Mammals of the Southern African Subregion*, at page 520, and Clive McMahon, Harry R. Burton, Marthan N. Bester, ‘A Demographic Comparison of Two Southern Elephant Seal Populations’, *The Journal of Animal Ecology*, Vol. 72, No. 1 (Jan., 2003), pp. 61-74, at page 62.

^{*} Two voyages were made to Gough island in 1869 and 1870.

⁺ ‘Elephanting’ was the term used to describe the hunting and killing of elephant seals for their blubber. Vessels sent out to hunt elephant seals were known as ‘sea elephanting’ vessels. See Bernadette Hince, *The Antarctic Dictionary: A Complete Guide to Antarctic English*, at page 13.

³² Rhys Richards, ‘The Commercial Exploitation of Sea Mammals at Iles Crozet and Prince Edward Islands before 1850’, *Polar Monographs 1 1992*, at page 3, and Kevin J. Gaston, Steven L. Chown, and Richard D. Mercer, ‘The animal species-body size distribution of Marion Island’ in *Proceedings of the National Academy of Sciences of the United States of America*, December 4, 2001, Vol. 98, No. 25, 14493-14496.

surface area of about 45 km².³³ The islands are 2400 km south east of Cape Town and the nearest point on the African mainland is Algoa Bay about 1600 km away.³⁴ The islands lie south of the sub-tropical Convergence, but north of the Antarctic Convergence, and have been described as bleak and windswept with little vegetation, similar climates, and rich in birdlife and seals.³⁵ The Crozet Islands lie 1067 km further east of the Prince Edward Islands and about 3300 km from Cape Town, halfway between southern Africa and Australia (Fig. 1.3).³⁶ They too lie south of the sub-tropical Convergence, but north of the Antarctic Convergence.³⁷

The Crozet Islands are made up of five volcanic islands as well as numerous rocks (Fig. 1.4).³⁸ Île de la Possession (Possession Island) is the largest of the islands with an area of 130 km².³⁹ The other two islands of a substantial area are Île aux Cochons (Hog Island, sometimes referred to as Pig Island), and Île de l'Est (East Island).⁴⁰ Hog Island has an area of 70 km², and East Island measures 120 km².⁴¹ These three islands are mountainous, those on East Island reaching 'about 5000 feet [1524 m] high and snow covered'.⁴² The

³³ Rhys Richards, 'The Commercial Exploitation of Sea Mammals at Iles Crozet and Prince Edward Islands before 1850', *Polar Monographs 1 1992*, at page 3.

³⁴ John H. Marsh, 'No Pathway Here', at page 20.

³⁵ Rhys Richards, 'The Commercial Exploitation of Sea Mammals at Iles Crozet and Prince Edward Islands before 1850', *Polar Monographs 1 1992*, at page 3.

³⁶ H.W. Tilman, 'Voyage to the Îles Crozet and Îles Kerguelen', *The Geographical Journal*, Vol. 127, No. 3 (Sep., 1961), pp. 310-316, at page 310.

³⁷ G.A. Knox, 'Littoral Ecology and Biogeography of the Southern Oceans', *Proceedings of the Royal Society of London. Series B, Biological Sciences*, Vol. 152, No. 949. A Discussion on the Biology of the Southern Cold Temperate Zone (Jul. 12, 1960), pp. 577-624, at page 582.

³⁸ Rhys Richards, 'The Commercial Exploitation of Sea Mammals at Iles Crozet and Prince Edward Islands before 1850', *Polar Monographs 1 1992*, at page 3.

³⁹ <http://www.worldwildlife.org/wildworld/profiles/terrestrial/an/an1104> accessed on 25 April 2010.

⁴⁰ Ian Church, *Survival on the Crozet Islands: The Wreck of the Strathmore in 1875*, at page 24, and H.W. Tilman, 'Voyage to the Îles Crozet and Îles Kerguelen', *The Geographical Journal*, Vol. 127, No. 3 (Sep., 1961), pp. 310-316, at page 310.

⁴¹ <http://www.worldwildlife.org/wildworld/profiles/terrestrial/an/an1104> accessed on 25 April 2010.

⁴² H.W. Tilman, 'Voyage to the Îles Crozet and Îles Kerguelen', *The Geographical Journal*, Vol. 127, No. 3 (Sep., 1961), pp. 310-316, at page 310.

two remaining islands are Îles des Pingouins - a rock 152 m high with one small outlier - and Île des Apôtres, a group of rocky pinnacles.⁴³



Figure 1.3: Distance of the Crozet Islands from the nearest land masses.⁴⁴

⁴³ H.W. Tilman, 'Voyage to the Îles Crozet and Îles Kerguelen', *The Geographical Journal*, Vol. 127, No. 3 (Sep., 1961), pp. 310-316, at page 310.

⁴⁴ <http://planetearth.nerc.ac.uk/news/story.aspx?id=305> accessed on the 07/03/2010.

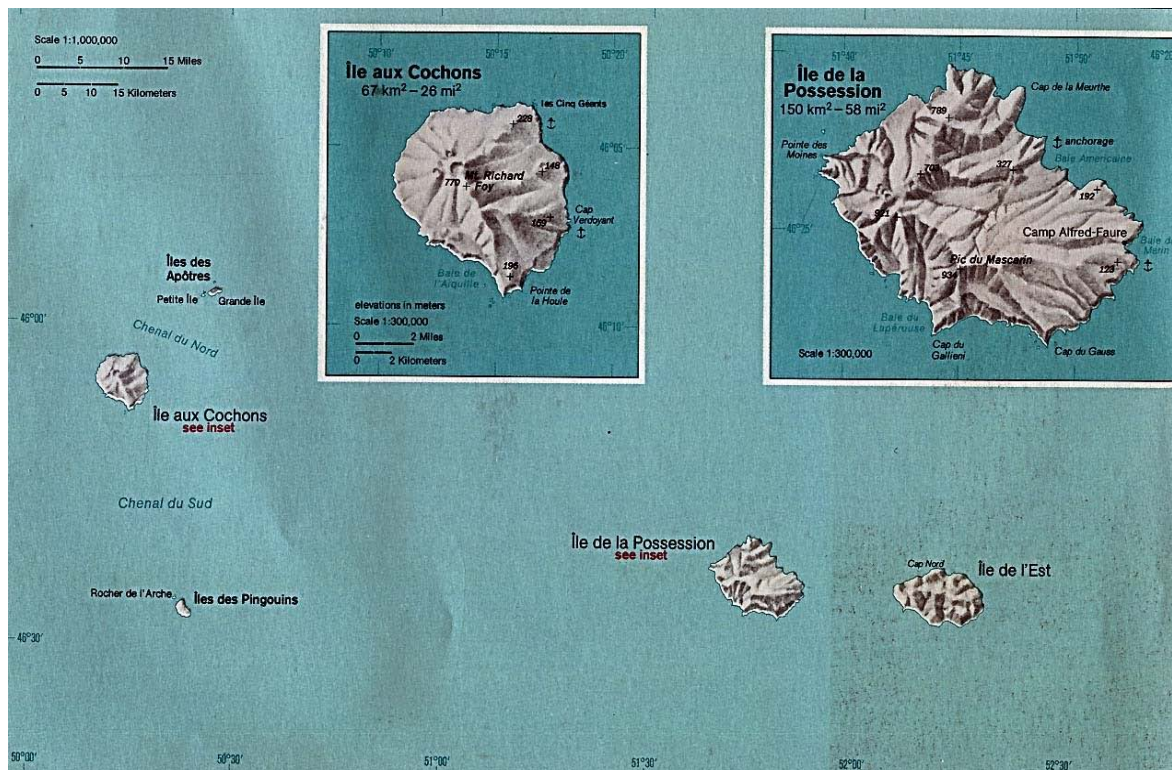


Figure 1.4: Position of the islands of the Crozet group.⁴⁵

The southern elephant seal's range is large, encompassing all of the Southern Ocean north of the pack-ice zone, including all the sub-Antarctic islands (Fig. 1.2).⁴⁶ The extent of its range makes estimating the total number of animals harvested from the Kerguelen population in the eighteenth and nineteenth centuries impossible without a global archival inventory. This thesis will thus focus only on Cape involvement in the southern elephant seal trade on the Prince Edward and Crozet Islands between the years 1832–1869. This will enable a detailed analysis of the practices and trends in elephant seal harvesting by Cape sealers on these islands over this period.

⁴⁵ http://www.biocrawler.com/w/images/7/7b/Map_of_Crozet_Islands.jpg accessed on the 02/03/2010.

⁴⁶ Julian Priddle, *Antarctic Whales and Seals*.

1.2.3) Appearance

The southern elephant seal is large. The maximum length of breeding males is 4.9 m and the maximum weight is 4 tons (comparable to that of the Asian elephant *Elephas maximus*, which averages 5 tons).⁴⁷ The female southern elephant seal is smaller than the male with length ranging between 2.6–2.8 m and a weight of 0.5–1 tons.⁴⁸ Figure 1.5 conveys the sheer size of the elephant seal. The large sexual dimorphism in size is visible by age three, when males are already beginning to develop the characteristic proboscis, a feature absent in females.⁴⁹

Southern elephant seals attain such impressive size for a number of reasons. Their body mass protects them from the cold, as their ratio of surface area to mass is small, they lose heat less quickly than small mammals.⁵⁰ Their thick layer of blubber also helps to smooth out their body contours, making them more streamlined and thus improving movement in water.⁵¹ The large blubber layer serves as an energy reservoir for the long periods of fasting they undertake every year.⁵² The females, although they have shorter fasts, use the fat from their blubber to produce large quantities of milk to feed their pups.⁵³ The elephant seal's blubber is also incompressible, an important physiological advantage allowing them to dive to great depths to feed (see Section 1.2.5).⁵⁴

⁴⁷ Nigel Bonner, *Seals and Sea Lions of the World*, at page 122 and Robert E. Martin, Ronald H. Pine, Anthony F. DeBlase, *A Manual of Mammalogy with they Keys to Families of the World*, at page 164.

⁴⁸ Julian Priddle, *Antarctic Whales and Seals*.

⁴⁹ Nigel Bonner, *Seals and Sea Lions of the World*, at page 122.

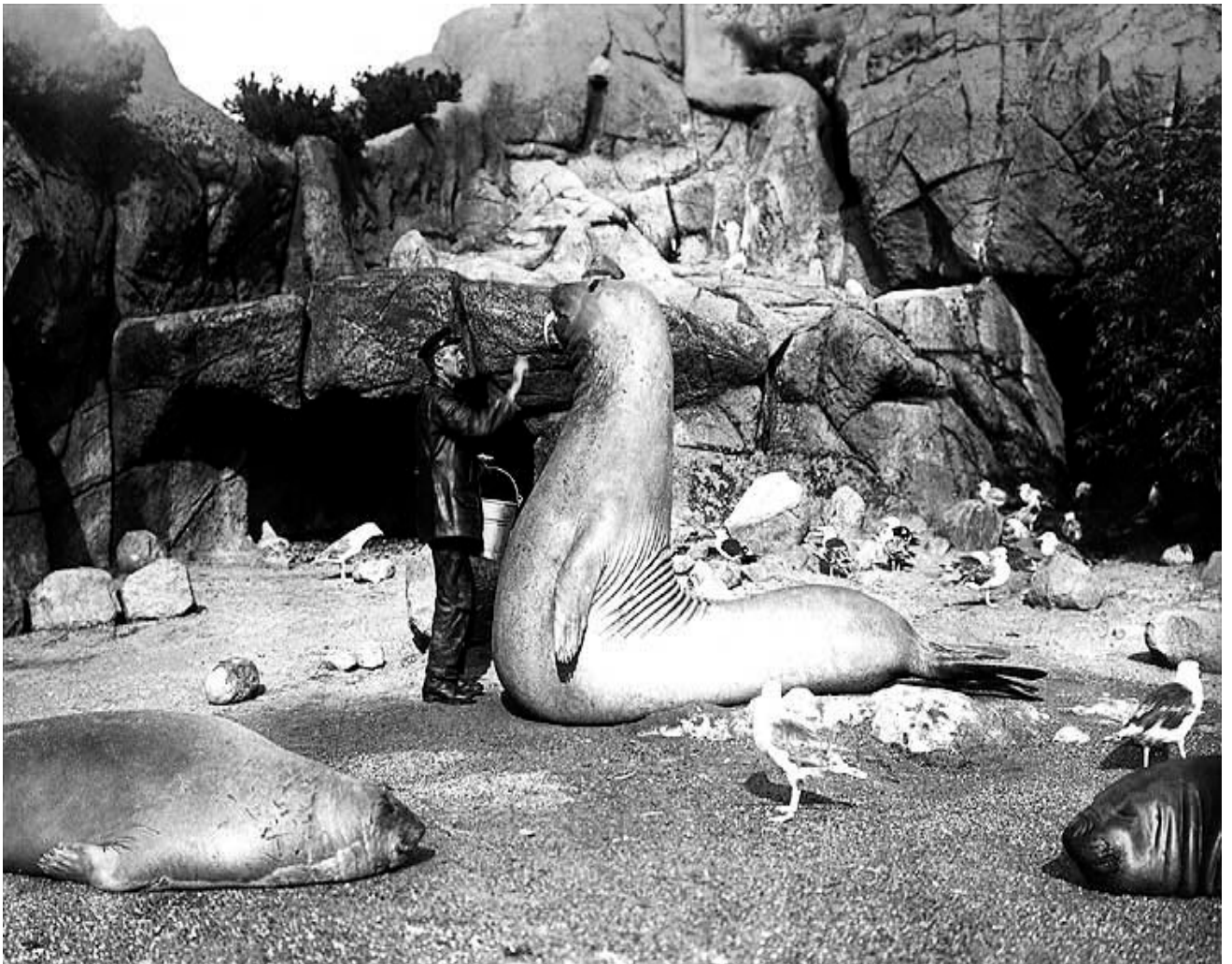
⁵⁰ Marianne Riedman, *The Pinnipeds: Seals, Sea Lions and Walruses*, at page 15.

⁵¹ Nigel Bonner, *Seals and Sea Lions of the World*, at page 25.

⁵² Marianne Riedman, *The Pinnipeds: Seals, Sea Lions and Walruses*, at page 16.

⁵³ Nigel Bonner, *Seals and Sea Lions of the World*, at page 25.

⁵⁴ *Ibid*, at page 25.



*Figure 1.5: A southern elephant seal being fed at Hagenbeck Zoo, Germany.*⁵⁵

⁵⁵ <http://www.zoochat.com/22/elephant-seal-exhibited-steel-pier-atlantic-126996> accessed on the 02/03/2010.

1.2.4) Breeding



Figure 1.6: Breeding distribution of the southern elephant seal (the Antarctic Convergence is shown by the dashed line).⁵⁶

Southern elephant seals are polygynous, and breed in dense colonies,⁵⁷ mostly on the islands on either side of the Antarctic Convergence (Fig. 1.6), although births have been recorded on the coasts of South Africa, Australia and New Zealand.⁵⁸ This optimises the

⁵⁶ Nigel Bonner, *Seals and Sea Lions of the World*, at page 124.

⁵⁷ Guy M. Kirwan (ed.), *Whales, Dolphins and Seals: A Field Guide to the Marine Mammals of the World*, at page 341, and Julian Priddle, *Antarctic Whales and Seals*.

⁵⁸ Nigel Bonner, *Seals and Sea Lions of the World*, at page 124-125.

reproductive success of the species due to the large, seasonally constant biomass of zooplankton in the circumpolar zone of the Antarctic Convergence.⁵⁹ The males reach sexual maturity at the age of four years, and females mature between two and six years of age.⁶⁰ Southern elephant seals gather on the breeding islands in the southern hemisphere spring between September and November.⁶¹ The first bulls arrive from late August, though most do not haul out until the cows start arriving, and all congregate mainly on open sandy beaches.⁶² According to Bonner, “the beaches used are traditional [with] cows returning to the same site (probably where they were born) year after year”.⁶³ This breeding site fidelity is greater for older females than younger ones.⁶⁴

Once on the beaches, males monopolise several females to form harems and then defend their territory against rival males.⁶⁵ These dominant males (known as ‘beachmasters’) may sometimes control up to 100 cows, but harems average around 30 females.⁶⁶ In order to retain control over their territory, ‘beachmasters’ are unable to go to sea to feed and must rely on stores of blubber laid down over the previous winter.⁶⁷ Breeding males fast for more than 100 days while fighting for social rank and competing for mates, their three

⁵⁹ J.D. Skinner and R.J. van Aarde, ‘Observations on the Trend of the Breeding Population of Southern Elephant Seals, *Mirounga Leonina*, at Marion Island’, *The Journal of Applied Ecology*, Vol. 20, No. 3 (Dec., 1983), pp. 707-712, at page 707.

⁶⁰ Guy M. Kirwan (ed.), *Whales, Dolphins and Seals: A Field Guide to the Marine Mammals of the World*, at page 341.

⁶¹ Mikael Sandell ‘The Evolution of Seasonal Delayed Implantation’, *The Quarterly Review of Biology*, Vol. 65, No. 1 (Mar., 1990), pp. 23-42, at page 28.

⁶² Guy M. Kirwan (ed.), *Whales, Dolphins and Seals: A Field Guide to the Marine Mammals of the World*, at page 341, and Nigel Bonner, *Seals and Sea Lions of the World*, at page 131.

⁶³ Nigel Bonner, *Seals and Sea Lions of the World*, at page 131.

⁶⁴ Clive R. McMahon and Corey J.A. Bradshaw, ‘Harem choice and breeding experience of female southern elephant seals influence offspring survival’, *Behavioral Ecology and Sociobiology*, Vol. 55, No. 4 (Feb., 2004), pp. 349-362, at page 349.

⁶⁵ Julian Priddle, *Antarctic Whales and Seals*.

⁶⁶ Guy M. Kirwan (ed.), *Whales, Dolphins and Seals: A Field Guide to the Marine Mammals of the World*, at page 341.

⁶⁷ Julian Priddle, *Antarctic Whales and Seals*.

month long fast ensuring beachmasters achieve 98% of all copulations, confirming the transmission of their genes to the next generation.⁶⁸ The distinctive roar of the sea elephant is used to mark their territory by warning off male intruders and advertising their presence to females.⁶⁹ In ritual combat, bulls raise the front part of their body clear of the ground and swipe at each other with open jaws (Fig. 1.7).⁷⁰ The resulting scar tissue causes the characteristic thick rough skin on their necks.⁷¹ Ironically, this threat display facilitated commercial hunting by exposing bulls' soft underbelly to sealers, making them relatively easy to kill by lancing them through the heart.⁷²



Figure 1.7: Two male elephant seals competing for beachmaster status.⁷³

⁶⁸ Burney J. Le Boeuf and Richard M. Laws, 'Elephant Seals: An Introduction to the Genus' in Burney J. Le Boeuf and Richard M. Laws (eds.), *Elephant Seals: Population Ecology, Behavior, and Physiology*, at page 19. and John D. Skinner and Christian T. Chimimba, *The Mammals of the Southern African Subregion*, at page 521.

⁶⁹ Nigel Bonner, *Seals and Sea Lions of the World*, at page 131.

⁷⁰ *Ibid.*

⁷¹ Richard J. Harrison and Judith E. King, *Marine Mammals*, at page 115.

⁷² Briton Cooper Busch, *The War Against the Seals: A History of the North American Seal Fishery*, at page 169.

⁷³ <http://www.taaf.fr/spip/spip.php?article175>, accessed on the 25/01/2010.

Due to the strain of the breeding season, beachmasters seldom enjoy more than a few breeding seasons of dominance.⁷⁴ The three month breeding season fast makes bulls “lean to the point of emaciation”.⁷⁵ They return to the ocean to feed and then haul out again for the annual moult from late December to mid-April.⁷⁶ Thereafter, they go back to sea to build up their reserves again for the next mating season. Due to the philopatric nature of the species (they return to their natal area to breed and/or moult), there is limited exchange between the different southern elephant seal populations.⁷⁷

By the end of October, the majority of the pups have been born after an approximately eleven month gestation period, including four months of delayed implantation, which allows birth and mating to take place at the same time.⁷⁸ This minimizes the female’s time on land and allows her time to recover from lactation.⁷⁹ At birth, a pup weighs about one fifteenth the weight of its mother (c. 46 kg).⁸⁰ After giving birth the females fast for about 24 days while nursing her pups.⁸¹ This allows the mother to transfer a great deal of milk energy to her pup in a short time, which frees her to forage without encumbrance in

⁷⁴ Nigel Bonner, *Seals and Sea Lions of the World*, at page 135.

⁷⁵ *Ibid.*

⁷⁶ T.W. Mulaudzi, G.J.G. Hofmeyr, M.N. Bester, S.P. Kirkman, P.A. Pistorius, F.C. Jonker, A.B. Makhado, J.H. Owen and R.J. Grimbeek, ‘Haulout site selection by southern elephant seals at Marion Island’ in *African Zoology*, Vol. 43, No. 1, April 2008, pp. 25-33, at page 25.

⁷⁷ Marianne Riedman, *The Pinnipeds: Seals, Sea Lions and Walruses*, at page 258, and P.A. Pistorius, M.N. Bester, S.P. Kirkman, ‘Survivorship of a Declining Population of Southern Elephant Seals, *Mirounga leonina*, in relation to age, sex and cohort’, *Oecologia*, Vol. 121, No. 2 (1999), pp. 201-211, at page 201.

⁷⁸ Mikael Sandell ‘The Evolution of Seasonal Delayed Implantation’, *The Quarterly Review of Biology*, Vol. 65, No. 1 (Mar., 1990), pp. 23-42, at page 28.

⁷⁹ Nigel Bonner, *Seals and Sea Lions of the World*, at page 162.

⁸⁰ *Ibid.*, at page 133.

⁸¹ A. Rus Hoelzel, Burney J. LeBoeuf, Joanne Reiter and Claudio Campagna, ‘Alpha-Male Paternity in Elephant Seals’, *Behavioral Ecology and Sociobiology*, Vol. 46, No. 5 (Oct., 1999), pp. 298-306, at page 299.

order to restore her reserves once her pup is weaned.⁸² After weaning, the mothers mate with the peak mating season occurring in November.⁸³ They then abandon their pups and return to sea for about 70 days to restore fat reserves before hauling out again from mid-December to mid-March for the energetically expensive annual moult.⁸⁴

The pups remain ashore for a further six weeks of fasting – a feat only made possible by trebling their birth mass during suckling.⁸⁵ By the time they finally depart the breeding site, pups will have lost, on average, one third of their weaning mass.⁸⁶ For this reason, it is generally the pups which are heaviest at weaning that survive the fast with sufficient reserves to find food once they leave the islands.⁸⁷ The importance of weight at weaning can be seen by the fact that pups weighing more than 135 kg at weaning have a 72% chance of first year survival whereas those weighing less than 95 kg only had a 54% chance of surviving their first twelve months.⁸⁸

Research also suggests that amongst northern elephant seals, older females (six years onwards) are better mothers. Females three to five years old successfully weaned 38% of

⁸² Burney J. Le Boeuf and Richard M. Laws, 'Elephant Seals: An Introduction to the Genus' in Burney J. Le Boeuf and Richard M. Laws (eds.), *Elephant Seals: Population Ecology, Behavior, and Physiology*, at page 19.

⁸³ Mikael Sandell 'The Evolution of Seasonal Delayed Implantation', *The Quarterly Review of Biology*, Vol. 65, No. 1 (Mar., 1990), pp. 23-42, at page 28.

⁸⁴ T.W. Mulaudzi, G.J.G. Hofmeyr, M.N. Bester, S.P. Kirkman, P.A. Pistorius, F.C. Jonker, A.B. Makhado, J.H. Owen and R.J. Grimbeek, 'Haulout site selection by southern elephant seals at Marion Island' in *African Zoology*, Vol. 43, No. 1, April 2008, pp. 25-33, at page 25, and Bernie McConnell, Mike Fedak, Harry. R. Burton, G.H. Engelhard, Peter J.H. Reijnders, 'Movements and Foraging Areas of Naïve, Recently Weaned Southern Elephant Seal Pups', *The Journal of Animal Ecology*, Vol. 71, No. 1 (Jan., 2002), pp. 65-78, at page 66.

⁸⁵ Bernie McConnell, Mike Fedak, Harry. R. Burton, G.H. Engelhard, Peter J.H. Reijnders, 'Movements and Foraging Areas of Naïve, Recently Weaned Southern Elephant Seal Pups', *The Journal of Animal Ecology*, Vol. 71, No. 1 (Jan., 2002), pp. 65-78, at page 66.

⁸⁶ *Ibid.*

⁸⁷ *Ibid.*

⁸⁸ *Ibid.*

their pups, compared to 73% weaning success by older females.⁸⁹ The average time spent weaning was five days longer in older females and the weight of the pups at weaning increased with the mother's age.⁹⁰ Recent research into the effects of breeding experience on offspring survival in southern elephant seals on Macquarie Island confirms these findings. McMahon and Bradshaw's results showed that the mean mass of females increased with age and that this in turn had a positive effect on first year pup survival rates.⁹¹ This may be due in part to older females producing milk with a higher protein content.⁹² McMahon and Bradshaw's study also showed that females chose to breed in larger harems as they aged and this may also contribute to the survival rate of pups by providing a better rearing environment.⁹³ In addition, Riedmann suggested that another factor accounting for the improved survival of pups produced by older females is that they have more mothering experience and this is important in successfully rearing young.⁹⁴ Age at birth may effect the survival rate of the mother as well as the pup.⁹⁵ As Marianne Riedman notes, "[s]imply put, the earlier a female elephant seal reproduces, the sooner she will probably die. Females that pupped for the first time at age four had a higher survival rate each year than those who pupped for the first time at three years of age".⁹⁶

⁸⁹ Marianne Riedman, *The Pinnipeds: Seals, Sea Lions and Walruses*, at page 295.

⁹⁰ *Ibid.*

⁹¹ Clive R. McMahon and Corey J.A. Bradshaw, 'Harem choice and breeding experience of female southern elephant seals influence offspring survival', *Behavioral Ecology and Sociobiology*, Vol. 55, No. 4 (Feb., 2004), pp. 349-362, at page 349.

⁹² Marianne Riedman, *The Pinnipeds: Seals, Sea Lions and Walruses*, at page 295.

⁹³ Clive R. McMahon and Corey J.A. Bradshaw, 'Harem choice and breeding experience of female southern elephant seals influence offspring survival', *Behavioral Ecology and Sociobiology*, Vol. 55, No. 4 (Feb., 2004), pp. 349-362, at page 359.

⁹⁴ Marianne Riedman, *The Pinnipeds: Seals, Sea Lions and Walruses*, at page 296.

⁹⁵ Nigel Bonner, *Seals and Sea Lions of the World*, at page 135.

⁹⁶ Marianne Riedman, *The Pinnipeds: Seals, Sea Lions and Walruses*, at page 241.

When the annual moult is complete, the majority of the elephant seals abandon the beaches for the winter.⁹⁷ However, young elephant seals of both sexes, and occasionally some adults, haul out on the islands again in what is known as the ‘resting’ or ‘winter haulout’.⁹⁸ These haulout periods are, according to Mulaudzi *et al*, characterized by a high degree of synchronization and annual regularity at Marion Island, and are similar to those occurring at other elephant seal breeding grounds.⁹⁹ Participation and timing of the different haulouts depend on the age, sex and social status of the animals.¹⁰⁰

1.2.5) Feeding

Relatively little is known about the feeding habits of the southern elephant seal. Studies have shown that they feed predominantly on cephalopods and fish, with crustaceans and other invertebrates constituting only a small part of their diet.¹⁰¹ However, where and how they catch their prey remains a mystery.¹⁰² Time-depth recorders attached to elephant seals have shed some light at least on their diving patterns. In 1983, a team of researchers from the University of California, Santa Cruz, attached recorders to two northern elephant seal cows, which revealed that they averaged 61 dives a day with a mean depth of 333 m and only 11% of their time was spent at the surface.¹⁰³ A study of eight bull northern elephant seals in 1990 recorded maximum dive depths of 1529 m (the

⁹⁷ Guy M. Kirwan (ed.), *Whales, Dolphins and Seals: A Field Guide to the Marine Mammals of the World*, at page 341.

⁹⁸ T.W. Mulaudzi, G.J.G. Hofmeyr, M.N. Bester, S.P. Kirkman, P.A. Pistorius, F.C. Jonker, A.B. Makhado, J.H. Owen and R.J. Grimbeek, ‘Haulout site selection by southern elephant seals at Marion Island’ in *African Zoology*, Vol. 43, No. 1, April 2008, pp. 25-33, at page 25.

⁹⁹ *Ibid.*

¹⁰⁰ *Ibid.*

¹⁰¹ John D. Skinner and Christian T. Chimimba, *The Mammals of the Southern African Subregion*, at page 521.

¹⁰² Nigel Bonner, *Seals and Sea Lions of the World*, at page 126.

¹⁰³ *Ibid.*, at page 127.

greatest depth known for any seal), with each dive averaging between 21 to 24 minutes.¹⁰⁴ A female southern elephant seal at Macquarie Island registered a dive that lasted 120 minutes.¹⁰⁵ Elephant seals at Macquarie Island spent approximately 90% of total time at sea diving while approximately 99% of surface times between dives were less than 10 minutes duration.¹⁰⁶ Due to the fact that the main diet of elephant seals is squid, their diving patterns appear to mirror the movements of their main prey.¹⁰⁷ Squid migrate towards the surface at night, descending again at dawn.¹⁰⁸

The feeding habits of the elephant seal, along with the fact that there is no evidence that they sleep while at sea (some scientists suggest that they sleep with only one side of the brain at a time to maximise available foraging time), means they remain submerged for long periods, and this protected them historically from pelagic sealing, unlike many of the commercially harvested fur seal species.¹⁰⁹

¹⁰⁴ Nigel Bonner, *Seals and Sea Lions of the World*, at page 128.

¹⁰⁵ David J. Slip, Mark A. Hindell, and Harry R. Burton, 'Diving Behavior of Southern Elephant Seals from Macquarie Island: An Overview' in Burney J. Le Boeuf and Richard M. Laws (eds.), *Elephant Seals: Population Ecology, Behavior, and Physiology*, at pages 259 and 263.

¹⁰⁶ David J. Slip, Mark A. Hindell, and Harry R. Burton, 'Diving Behavior of Southern Elephant Seals from Macquarie Island: An Overview' in Burney J. Le Boeuf and Richard M. Laws (eds.), *Elephant Seals: Population Ecology, Behavior, and Physiology*, at pages 259 and 263.

¹⁰⁷ Nigel Bonner, *Seals and Sea Lions of the World*, at page 128.

¹⁰⁸ *Ibid.*

¹⁰⁹ Nigel Bonner, *Seals and Sea Lions of the World*, at page 128, and David J. Slip, Mark A. Hindell, and Harry R. Burton, 'Diving Behavior of Southern Elephant Seals from Macquarie Island: An Overview' in Burney J. Le Boeuf and Richard M. Laws (eds.), *Elephant Seals: Population Ecology, Behavior, and Physiology*, at page 265.

1.2.6) *Hunting elephant seals*

Unlike fur seals, elephant seals do not take refuge in the sea at the first sign of danger. They often ignored sealers, preferring to keep a watchful eye on their harems instead.¹¹⁰ According to Fanning, sealers killed younger elephant seals with a club and older ones with a lance; the largest bulls were killed with a musket shot through the roof of their upper jaw or by holding the gun near their head and firing a shot into the brain.¹¹¹ In order to economise their stored energy (blubber) while on land elephant seals – when not fighting, mating, or nursing – sleep.¹¹² Because the loudest noises often did not wake the animals, the hunter could proceed through the whole rookery shooting and lancing as many elephant seals as he wanted.¹¹³ Sometimes, after being lanced, the animals would take up to 30 minutes to die.¹¹⁴ This rather brutal process led L. Harrison Matthews, who worked as an elephanter, to state that this slaughter “always degrades and brutalises those who do it”.¹¹⁵

Elephant seals were not completely defenceless, however, being surprisingly fast on land and biting if cornered.¹¹⁶ They also sometimes grabbed hold of the lance with their teeth and if the sealer did not release it in time, “you [would] pick yourself up about twenty

¹¹⁰ Briton Cooper Busch, *The War Against the Seals: A History of the North American Seal Fishery*, at page 165.

¹¹¹ Briton Cooper Busch, ‘Elephants and Whales: New London and Desolation, 1840-1900’, *The American Neptune: a quarterly journal of maritime history* Vol. 40 (1980), pp. 117-126, at page 122.

¹¹² Burney J. Le Boeuf and Richard M. Laws, ‘Elephant Seals: An Introduction to the Genus’ in Burney J. Le Boeuf and Richard M. Laws (eds.), *Elephant Seals: Population Ecology, Behavior, and Physiology*, at page 20.

¹¹³ Briton Cooper Busch, *The War Against the Seals: A History of the North American Seal Fishery*, at page 165.

¹¹⁴ Rhys Richards, ‘The Commercial Exploitation of Sea Mammals at Iles Crozet and Prince Edward Islands before 1850’, *Polar Monographs 1 1992*, at page 7.

¹¹⁵ Briton Cooper Busch, ‘Elephants and Whales: New London and Desolation, 1840-1900’, *The American Neptune: a quarterly journal of maritime history* Vol. 40 (1980), pp. 117-126, at page 123.

¹¹⁶ J.H. Kidder, ‘The Natural History of Kerguelen Island’, *The American Naturalist*, Vol. 10, No. 8 (aug., 1876), pp. 481-484, at page 483.

feet distant, and when you come to look at your lance, you will find the tip of it gone”.¹¹⁷

Though, in general, even if the elephant seal did attempt to bite their attacker, men with a reasonable amount of agility were able to avoid it.¹¹⁸

Once the elephant seals had been killed, the sealers would begin butchering. The blubber was cut away in situ and then carried or transported by boat to where large cauldrons (known as try-pots) were located.¹¹⁹ Fosdick claimed this process was “heartily despised by the men” because the loads were heavy and they had to be carried across the rocks and tussock bogs that lay between the spot where the elephant seal was killed and the production site.¹²⁰

Oil production required only a low level of technology.¹²¹ According to Fosdick, large pits were dug and filled with water near the try-pots so that once the blubber arrived it could be washed clean of blood and sand.¹²² The blubber was then cut into smaller pieces five–eight cm² at a mincing table, where as much as possible of the skin was detached.¹²³

¹¹⁷ J.H. Kidder, ‘The Natural History of Kerguelen Island’, *The American Naturalist*, Vol. 10, No. 8 (aug., 1876), pp. 481-484, at page 483.

¹¹⁸ Arthur C. Watson, ‘A Voyage on the Sealer *Emeline* and the journal from Washington Fosdick’s manuscript preserved in the museum of the old Dartmouth Historical Society at New Bedford’, *New York Zoological Society*, Vol. 9 (1931), pp. 475-549, at page 485.

¹¹⁹ Rhys Richards, ‘The Commercial Exploitation of Sea Mammals at Iles Crozet and Prince Edward Islands before 1850’, *Polar Monographs 1 1992*, at page 6.

¹²⁰ Arthur C. Watson, ‘A Voyage on the Sealer *Emeline* and the journal from Washington Fosdick’s manuscript preserved in the museum of the old Dartmouth Historical Society at New Bedford’, *New York Zoological Society*, Vol. 9 (1931), pp. 475-549, at page 485.

¹²¹ K. Townrow, ‘Sealing Sites on Macquarie Island: An Archaeological Survey’, *Papers and Proceedings of the Royal Society of Tasmania* Volume 122(1), 1988, pp. 15-25, at page 24.

¹²² Arthur C. Watson, ‘A Voyage on the Sealer *Emeline* and the journal from Washington Fosdick’s manuscript preserved in the museum of the old Dartmouth Historical Society at New Bedford’, *New York Zoological Society*, Vol. 9 (1931), pp. 475-549, at page 507.

¹²³ Briton Cooper Busch, *The War Against the Seals: A History of the North American Seal Fishery*, at page 166.

It was then put in the try-pots where it was boiled to extract the oil.¹²⁴ The oil was decanted into casks which were then coopered and stored on the vessel for the return voyage.¹²⁵

1.2.7) Has the annual cycle of the southern elephant seal been altered by commercial exploitation?

The earliest detailed account of the annual cycle of elephant seals on the Crozet and Prince Edward Islands comes not from a naturalist but from Charles Medyett Goodridge, who was shipwrecked on the Crozet Islands for two years in the early 1820s. The boredom of maroon life led Goodridge and those marooned with him to study elephant seals more closely than they otherwise would have done. They gave names to certain of the animals which they recognised by their scars and in this way they were able to identify them when they reappeared at different times of the year.¹²⁶

According to Goodridge, the male elephant seals would make their appearance in about the middle of August while the females arrived in September to have their pups, which they suckled for about five weeks before returning to the sea in mid October having lost nearly all their fat.¹²⁷ He similarly reported the males leaving the islands from the beginning of December being “nearly reduced to skeletons”.¹²⁸ According to Goodridge, the males started returning in February (though the fact that Goodridge states that South-

¹²⁴ J.J. Boshoff; D. Hart; J. Looock, *Survey of Historical Sites on Marion Island*, at page 6.

¹²⁵ Arthur C. Watson, ‘A Voyage on the Sealer *Emeline* and the journal from Washington Fosdick’s manuscript preserved in the museum of the old Dartmouth Historical Society at New Bedford’, *New York Zoological Society*, Vol. 9 (1931), pp. 475-549, at page 507.

¹²⁶ Charles Medyett Goodridge, *Narrative of a Voyage to the South Seas and the Shipwreck of the Princess of Wales Cutter, with an Account of Two Years Residence on an Uninhabited Island*, at page 70.

¹²⁷ *Ibid*, at page 71.

¹²⁸ *Ibid*, at page 71.

seamen called these bulls ‘March Bulls’, suggests that the majority of them only arrived in March).¹²⁹ The close agreement between Goodridge’s historical account and modern observation of elephant seal behaviour suggests that the animal’s annual cycle has not been significantly altered by commercial hunting.

1.3) The effect of the annual cycle of the southern elephant seal on the Cape Town elephant seal hunters

With an understanding of the annual cycle of the southern elephant seal, we can now appreciate how closely adapted the Cape Town sealers operations were to it. Table 1.1 summarises the annual haulout patterns of the southern elephant seal, while Figure 1.8 shows the results of a 14 month study by Hindell and Burton of the haulout patterns of southern elephant seals on Macquarie Island in 1984–1985.¹³⁰ Figure 1.9 integrates the results of the research done by Hindell and Burton as well as that of Laws to provide an indication of the number of elephant seals that can be found ashore on a typical rookery throughout the annual cycle.

¹²⁹ Charles Medyett Goodridge, *Narrative of a Voyage to the South Seas and the Shipwreck of the Princess of Wales Cutter, with an Account of Two Years Residence on an Uninhabited Island*, at page 71.

¹³⁰ Mark A. Hindell and Harry R. Burton, ‘Seasonal Haul-Out Patterns of the Southern Elephant Seal (*Mirounga leonina* L.), at Macquarie Island’ in *Journal of Mammology*, Vol. 69, No. 1 (Feb., 1988), pp. 81-88, at page 83.

Table 1.1: The months in which southern elephant seals can be found ashore on the sub-Antarctic islands.

	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Bulls	Green	Green	Green	Green				Blue	Blue	Blue	Blue	Green
Cows	Green	Green	Green						Red	Red	Magenta	Green
Juveniles	Green	Green	Grey	Grey	Grey	Grey	Grey	Grey			Green	Green
Underyearling Pups	Yellow								Yellow	Yellow	Yellow	Yellow

Key.

Red	Pupping season
Magenta	Mating season
Blue	Bulls haul-out
Green	Moulting period
Grey	Winter/resting haul-out

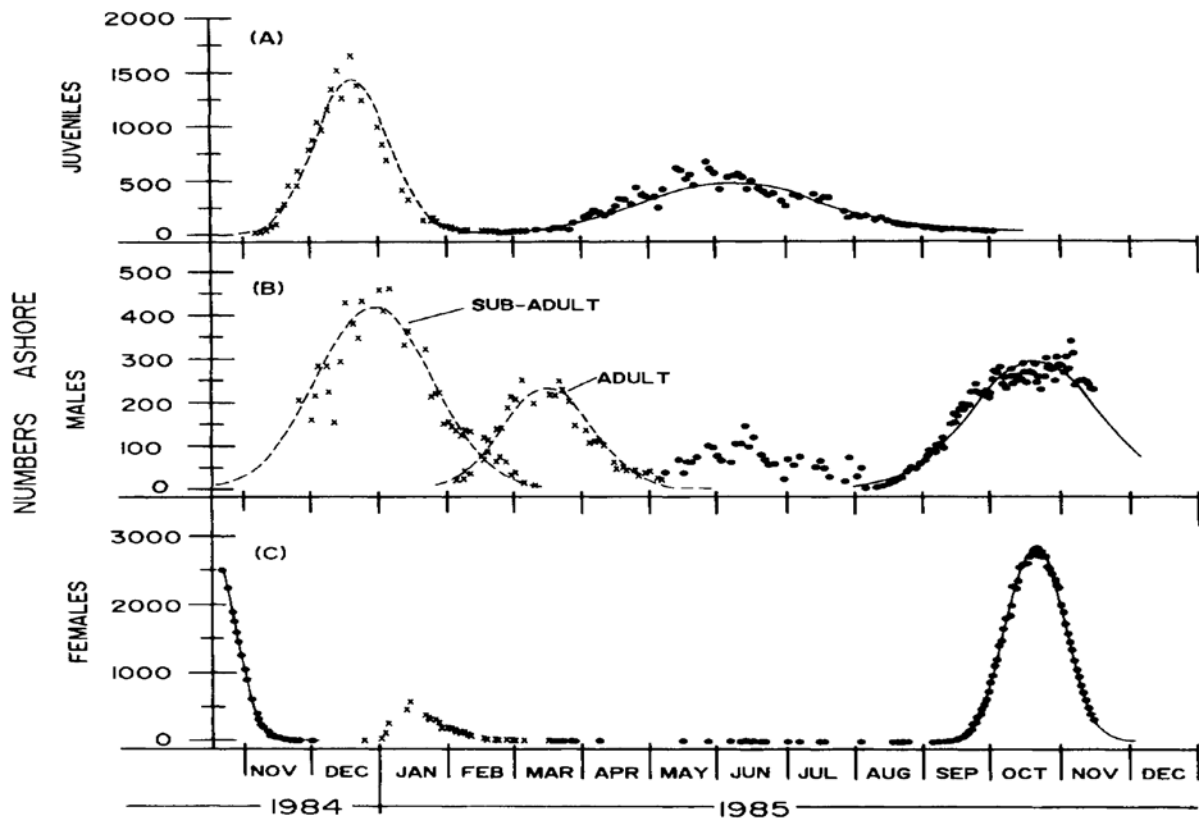


Figure 1.8: Number of southern elephant seals hauled out over 14 months in a rookery on Macquarie Island.¹³¹

¹³¹ Mark A. Hindell and Harry R. Burton, 'Seasonal Haul-Out Patterns of the Southern Elephant Seal (*Mirounga leonina* L.), at Macquarie Island' in *Journal of Mammology*, Vol. 69, No. 1 (Feb., 1988), pp. 81-88, at page 83.

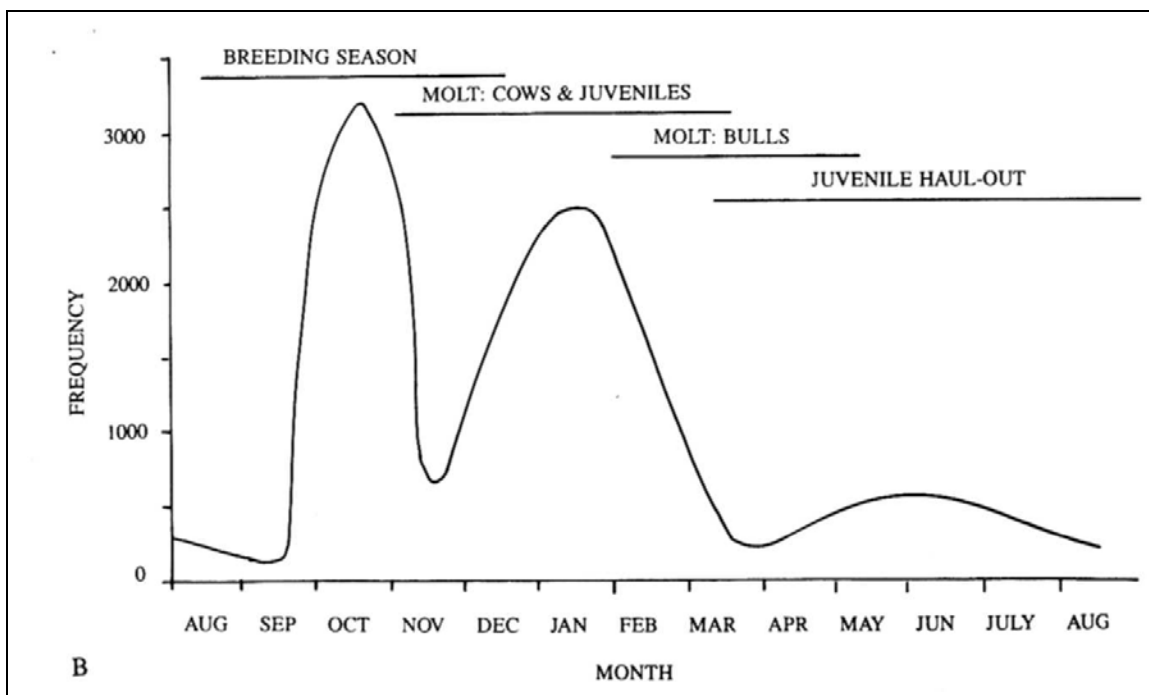


Figure 1.9: The relative number of southern elephant seals present on a typical rookery during the annual cycle.¹³²

Cape sealing voyages to the Crozet Islands and Prince Edward Islands between the years 1832–1869 clearly mirrored the elephant seal’s annual cycle (Fig. 1.10 and 1.11).

Voyages to the Crozets peaked in August–October and December–February. When one considers that the down run could last for anything between two to three weeks depending on winds and visibility, the vessels leaving Cape Town in August would arrive at the islands just as the bulls and cows began hauling-out for the pupping and mating season. The next peak in December to February coincided with the annual moult. These are the periods when elephant seals were at their fattest and most numerous on the islands, having re-built their blubber reserves before both haulouts.

¹³² Burney J. Le Boeuf and Richard M. Laws, ‘Elephant Seals: An Introduction to the Genus’ in Burney J. Le Boeuf and Richard M. Laws (eds.), *Elephant Seals: Population Ecology, Behavior, and Physiology*, at page 11. This is based on data from Laws (1956) as well as Hindell and Burton (1988).

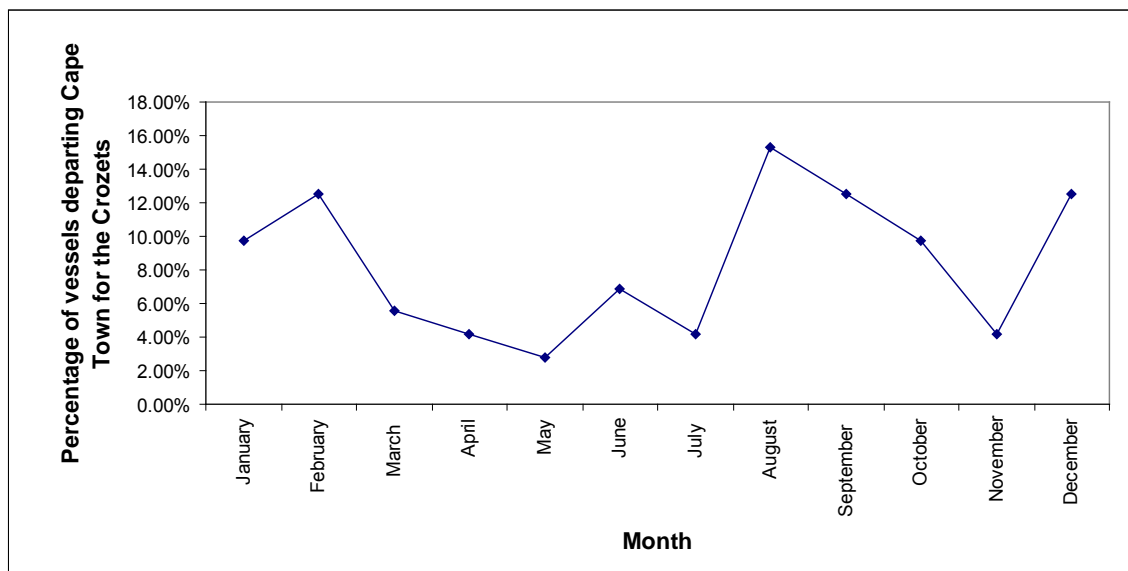


Figure 1.10: The percentage of total voyages departing Cape Town to the Crozets per month, 1832–1869.

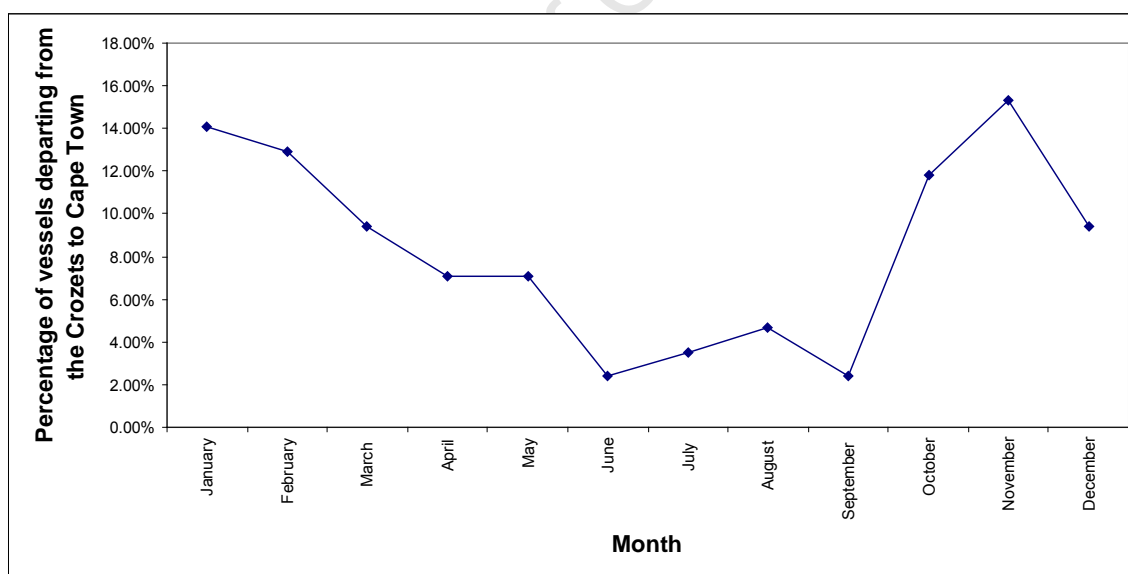


Figure 1.11: The percentage of total voyages returning from the Crozets to Cape Town per month, 1832–1869.

We can see in Figure 1.11 that the very large majority of vessels would depart the Crozets in October and November when the number of elephant seals remaining on the islands would begin to fall and those left on the islands would have already lost large amounts of their blubber reserves during the breeding fast. There is a similar increase in vessels departing the Crozets in January and February, when once again the number of elephant seals on the islands began to dwindle and whatever elephant seals remained would have lost large portions of their blubber reserves due to the moulting fast. Figure 1.10 also clearly shows that very few vessels departed for the islands during the winter haulout, which suggests that not enough animals hauled out during this period to make sending multiple vessels to the Crozets worthwhile. Although some sealing gangs wintered on the islands, this was done not primarily to produce oil, but to secure ‘ownership’ of prime beaches against foreign competitors for the next summer hunting season. This explains why the average quantity of oil returned was highest for vessels leaving Cape Town to arrive at the Crozets during the breeding and moulting seasons (Fig. 1.12).

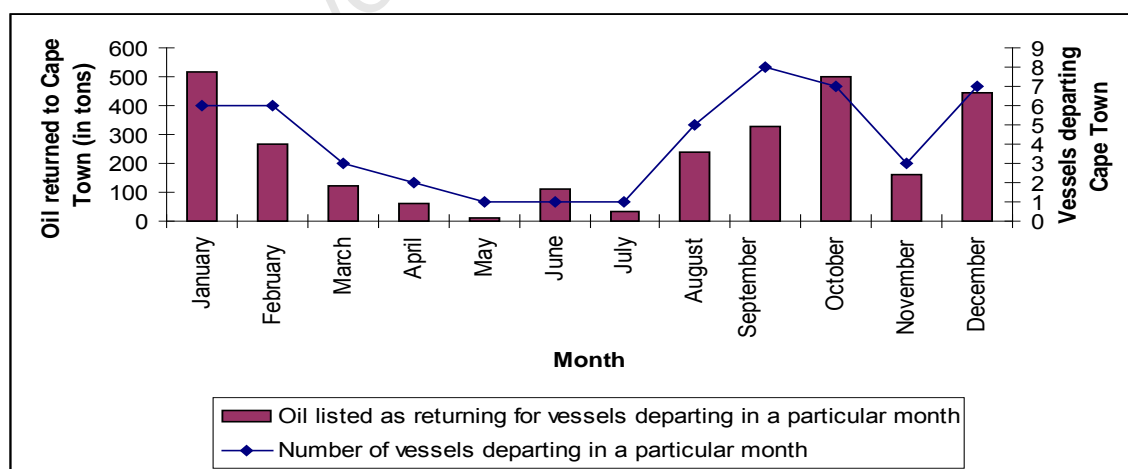


Figure 1.12: The amount of oil returned (in tons) to Cape Town by voyages departing Table Bay in a particular month.

Figure 1.12 clearly shows that the number of vessels sent to the islands was highest during the breeding and moulting haulouts and there was a corresponding increase in the amount of oil returned by these vessels. When looking at Figure 1.12 however, one must keep in mind that the date of departure for many of the vessels is not given in any of the archival sources while some of the vessels where the departure date was known did not list the amount of oil that they returned with. Because of this, only 50% of all the voyages made could be used when compiling Figure 1.12. Despite this, one can clearly see that the number of vessels and the amount of oil procured from the islands would peak at the same time as the number of elephant seals on the islands peaked.

1.4) Conclusion

The fixed haulout patterns and breeding site fidelity of elephant seals was important for the Cape Town based owners of the sea elephanting vessels as, once they knew the annual movements of the elephant seal and where they could be found, the sealers could easily adapt their movements to dovetail with those of the elephant seals. The fixed haulout patterns meant that the sea elephanting trade was a seasonal one with the large majority of vessels sent to the islands in early spring and summer. This allowed the owners of the sea elephanting vessels to employ their vessels for other pursuits during the winter months. In addition to this, the spring and summer haulout pattern of the elephant seal aided the sealers because, although the weather on the islands remained extremely changeable, the average temperature was higher, and there were more hours of daylight,

making for a warmer and longer working day.¹³³ The habits of the elephant seals while on land during the haulout periods also played into the hands of sealers. The sealers knew that once the elephant seals hauled out they would remain on land for a lengthy period of time and, because the elephant seals had no natural predators on land, the only competition the sealers faced was that of rival sealing gangs. Elephant seals behaviour on land – raising their bodies in combat, their preoccupation with maintaining their harems, and the deep sleeps they entered in order to store energy – meant that despite their great size, they were easy to kill. The elephant seals habits while at sea though did protect them from the pelagic sealing that played a role in the decimation of fur seal species and meant that the almost all of the elephant seals killed by sealers would have been transferred into oil.

¹³³ B.R. Schulze, 'The Climate of Marion Island' in E.M. van Zinderen Bakker, J.M. Winterbottom and R.A. Dyer (eds.), *Marion and Prince Edward Islands: Report on the South African Biological and Geological Expedition 1965-66*, at pages 19 and 24.

Chapter 2: The history of sealing in the Southern Ocean with a particular focus on the Prince Edward Islands and the Crozet Islands

2.1) Introduction

In the previous chapter, the annual cycle of the elephant seal was sketched in order to contextualise the analysis of the Cape elephant seal oil trade that follows. This chapter provides a brief history of the global fur seal and elephant seal oil trades for the same purpose and examines two of the Southern Ocean island ‘factories’ where the oil was produced.

2.2) The rise of the fur seal trade

2.2.1) The Canton trade

While human exploitation of pinnipeds goes back to the Pleistocene, it was only in the 1770s that sealing became a major commercial enterprise.¹³⁴ Sealing in the Southern Ocean emerged in response to two drivers; the first was the demand for fur seal skins in Canton (modern China) and the second was the discovery of fur seal rookeries on the islands of the Southern Ocean. While some of these islands were discovered by sealers themselves in search for new hunting grounds, the majority were reconnoitred by the voyages of maritime exploration launched by competing European nation states in the late eighteenth century. Published accounts of these voyages made the approximate

¹³⁴ D. Gifford-Gonzalez, S.D. Newsome, P.L. Koch, T. P. Guilderson, J.J. Snodgrass and R.K. Burton., ‘Archaeofaunal Insights on Pinniped-Human Interactions in the Northeastern Pacific’ in Gregory G. Monks (ed.) *The Exploitation and Cultural Importance of Sea Mammals*, pp. 19-38 at page 19, and Ian W.G. Smith, *The New Zealand sealing industry: History, archaeology, and heritage management*, at page 3.

position of new islands public knowledge.¹³⁵ Colonial expansion also played an indirect part in the increase of southern hemisphere sealing as the establishment of ports in South America, South Africa and Australasia created forward bases that provisioned and refitted the whaling and sealing vessels in the Southern Ocean.¹³⁶ In some of these regions, such as New Zealand, the exploitation of seals for fur and oil was the first settler industry and an important reason for a sustained European presence there during the late eighteenth and early nineteenth centuries.¹³⁷

Although the American, British and French whaling industries were well established by the 1780s, it was only after the end of the American War of Independence (1775–1783) that the sealing trade boomed.¹³⁸ The American War of Independence was disastrous for American whaling. Not only was there a whale oil glut in the American market which depressed prices, but Britain also placed an import duty on whale oil from foreign producers thus closing off a potential alternative market.¹³⁹ The search for a new commodity and buyers led to fur seals and the Chinese market.

Fur seal skins were in demand in Canton because the Chinese had developed an economical method of separating the coarse outer hair of the fur seal from the soft undercoat to render the skin thin and flexible.¹⁴⁰ This method, which was first developed

¹³⁵ James Kirker, *Adventures to China: Americans in the Southern Oceans 1792–1812*, at page 14.

¹³⁶ Ian W.G. Smith, *The New Zealand sealing industry: History, archaeology, and heritage management*, at page 4.

¹³⁷ *Ibid.*, at page 1.

¹³⁸ Arthur C. Watson, 'A Voyage on the Sealer *Emeline* and the journal from Washington Fosdick's manuscript preserved in the museum of the old Dartmouth Historical Society at New Bedford', *New York Zoological Society*, Vol. 9 (1931), pp. 475-549, at page 476.

¹³⁹ Alan Gurney, *Below the convergence: Voyages Towards Antarctica, 1699-1839*, at page 146.

¹⁴⁰ James Kirker, *Adventures to China: Americans in the Southern Oceans 1792–1812*, at page 17.

in the mid-eighteenth century, allowed seal pelts to be used for clothing, and made Canton the first global market for seal skins.¹⁴¹ Cook's account of his last Pacific voyage (published in 1783 and 1785) described the enormous demand and high prices for furs in North China.¹⁴² This provided the intelligence about both the product and the market that the sealing trade required.

In 1784, the year the first American ship sailed for Canton, Captain Benjamin Hussey left on a sealing voyage in the vessel *United States* to the Falkland Islands.¹⁴³ He returned to New York in 1786 with thirteen thousand fur seal skins as an experiment to test their value, and 300 tons of elephant seal oil.¹⁴⁴ Hussey sold his skins in New York for \$6,500 and they were shipped to Canton on the brig *Eleanora* where they sold for \$65,000, initiating the China trade in fur seal skins from the southern hemisphere.¹⁴⁵ This triggered an indiscriminate slaughter as vessels sought to procure as many skins as possible for the Canton market.¹⁴⁶ The skins taken to Canton were exchanged for teas, silks, and other well-known Asian products for re-sale on the North Atlantic rim.¹⁴⁷ These profits did not go unnoticed and in 1791 there were no less than 102 vessels, manned by 3,000 sailors,

¹⁴¹ Ian W.G. Smith, *The New Zealand sealing industry: History, archaeology, and heritage management*, at page 3.

¹⁴² *Ibid.*

¹⁴³ James Kirker, *Adventures to China: Americans in the Southern Oceans 1792–1812*, at page 10.

¹⁴⁴ Edouard A. Stackpole, *Voyage of the Huron and the Huntress: The American sealers and the discovery of the Continent of Antarctica*, at page 75 and Briton Cooper Busch, *The War Against the Seals: A History of the North American Seal Fishery*, at page 6.

¹⁴⁵ Edouard A. Stackpole, *Voyage of the Huron and the Huntress: The American sealers and the discovery of the Continent of Antarctica*, at page 75 and Alan Gurney, *Below the convergence: Voyages Towards Antarctica, 1699-1839*, at page 147.

¹⁴⁶ Arthur C. Watson, 'A Voyage on the Sealer *Emeline* and the journal from Washington Fosdick's manuscript preserved in the museum of the old Dartmouth Historical Society at New Bedford', *New York Zoological Society*, Vol. 9 (1931), pp. 475-549, at page 476.

¹⁴⁷ Dr. J.A. Allen, 'Fur seal hunting in the Southern Hemisphere' in *The fur seals and fur-seal islands of the North Pacific Ocean*, Part 3, (1899) pp. 307-317, at page 307.

engaged in securing fur seals and oil in the Southern Ocean.¹⁴⁸ Canton remained the major market until 1803 when oversupply caused a price crash (Fig. 2.1).¹⁴⁹ However, in the interim, the prices of seal skins in Britain had improved dramatically after 1796.¹⁵⁰

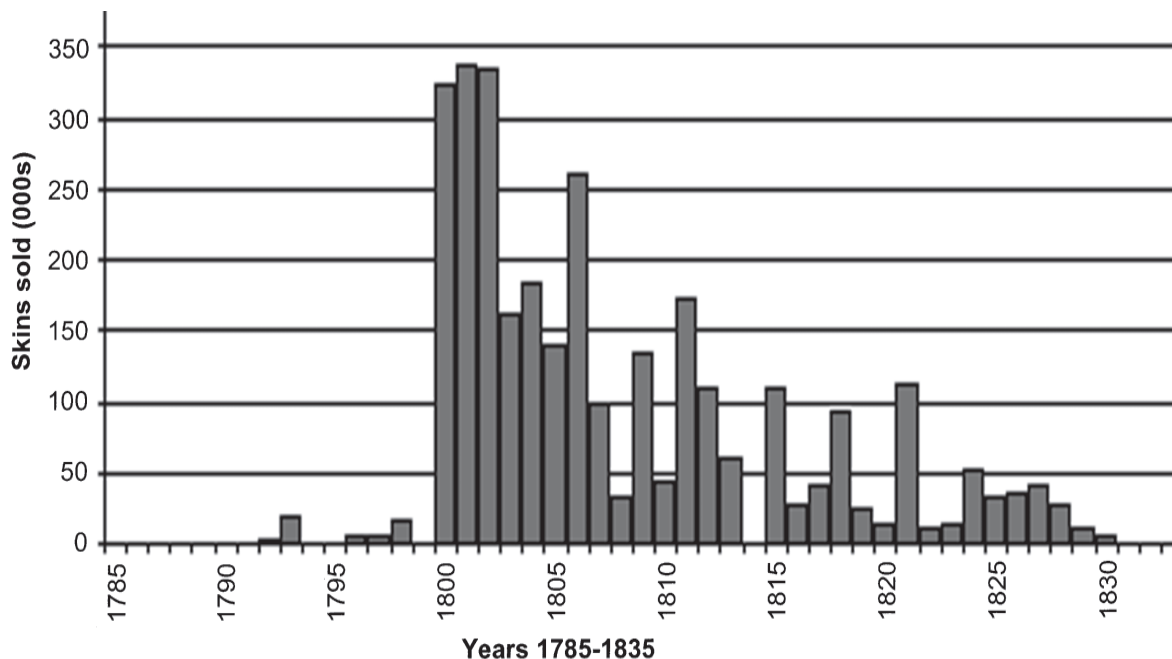


Figure 2.1: Estimate of numbers of Southern fur seal skins sold at Canton between 1788–1833.¹⁵¹

¹⁴⁸ H.R. Mills, *The Siege of the South Pole*, at page 88.

¹⁴⁹ Ian W.G. Smith, *The New Zealand sealing industry: History, archaeology, and heritage management*, at page 3.

¹⁵⁰ *Ibid.*, at page 4.

¹⁵¹ Rhys Richards, 'New market evidence on the depletion of southern fur seals' in *New Zealand Journal of Zoology*, Vol. 30, pp. 1-9, at page 5.

A huge number of fur seals were killed in the Southern Ocean to supply the northern hemisphere skin trade. These seals had evolved without terrestrial predators, so that when sealers arrived they were naïve about the threat.¹⁵² This helps to explain the huge numbers of seals taken in such a short period of time. According to Kirker, in the peak years of 1800 and 1803, over a million skins from the southern hemisphere were exchanged on the Canton market for nine hundred thousand dollars in teas and other merchandise.¹⁵³ The price of skins varied depending on “their quality and condition, the number currently offered or just previously sold, the time of the year, and the strength of competition from the Russians”.¹⁵⁴ As a result, the price of the skins in Canton fluctuated from a low of forty-two cents per skin in 1792, to a high of one dollar and twelve cents in 1801.¹⁵⁵ These high prices led to the rapid depletion of known colonies and a continual search for new hunting grounds.¹⁵⁶

2.2.2) *London enters the fray*

Until 1796, only the Chinese knew how to remove the fur seals’ long stiff guard hairs and retain the soft inner fur.¹⁵⁷ However, in 1796, an employee of Thomas Chapman (a skinner and trunkmaster from Bermondsey in east London) devised and patented an equivalent method of removing the guard hairs.¹⁵⁸ This patented process also allowed for the separation of salt and oil from the fur which enabled sealers to salt the fur seal skins immediately after taking them, “[t]his not only increased their commodity value, but also

¹⁵² James Kirker, *Adventures to China: Americans in the Southern Oceans 1792-1812*, at page 16.

¹⁵³ *Ibid*, at page 167.

¹⁵⁴ *Ibid*, at page 167.

¹⁵⁵ *Ibid*, at page 167.

¹⁵⁶ Ian W.G. Smith, *The New Zealand sealing industry: History, archaeology, and heritage management*, at page 4.

¹⁵⁷ Alan Gurney, *Below the convergence: Voyages Towards Antarctica, 1699-1839*, at page 147.

¹⁵⁸ <http://www.merchantnetworks.com.au/periods/lists.htm>, accessed on the 01/02/2010.

made it possible to preserve the skins for storage and transport by salting, rather than drying”, an important consideration in the cold and wet Southern Ocean.¹⁵⁹ Chapman’s method helped London to partly displace Canton as the main market for fur seal skins. But by the end of the first decade of the nineteenth century, the price of fur seals in London also decreased sharply due to oversupply and a national economic crisis.¹⁶⁰ This downturn was exacerbated between 1810 and 1820 by the depletion of fur seal stocks, war with the United States, and a decline in trade with Canton.¹⁶¹

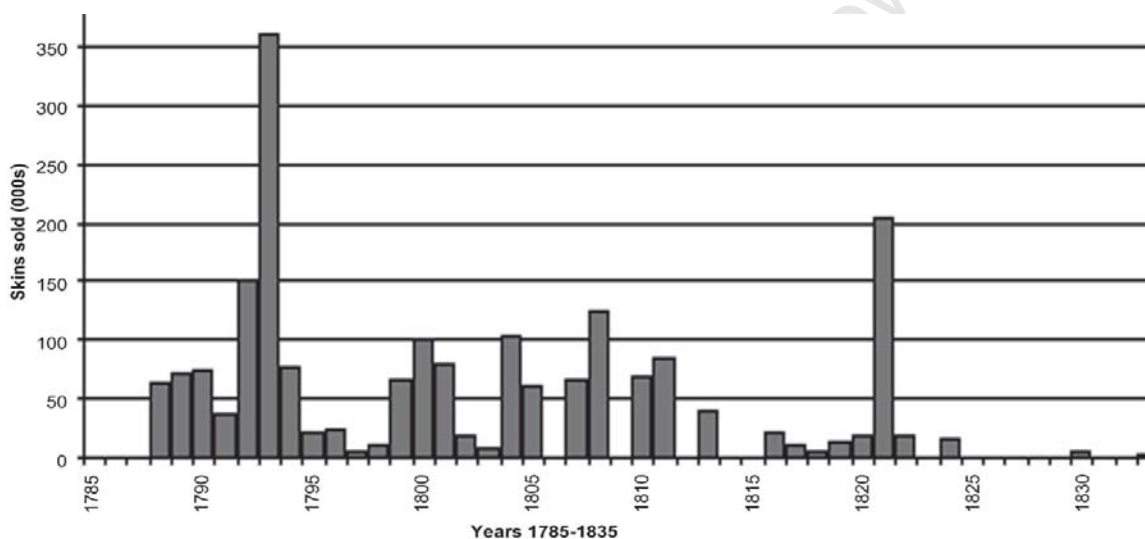


Figure 2.2: Southern fur seal skins sold at London as listed in the London Custom Ledgers between 1788–1833.¹⁶²

¹⁵⁹ Ian W.G. Smith, *The New Zealand sealing industry: History, archaeology, and heritage management*, at page 4.

¹⁶⁰ *Ibid.*

¹⁶¹ Rhys Richards, ‘The Maritime Fur Trade: sealers and other residents of St Paul and Amsterdam’, *The Great Circle: journal of the Australian Association for Maritime History* Vol. 6, 1984, pages 93-109, at page 93.

¹⁶² Rhys Richards, ‘New market evidence on the depletion of southern fur seals’ in *New Zealand Journal of Zoology*, Vol. 30, pp. 1-9, at page 5.

2.2.3) *The spread of sealers across the Southern Ocean*

Before the price of fur seal skins collapsed, large profits could be made in the sealing trade. Sealers therefore valued secrecy above all else so as to keep newly discovered hunting grounds to themselves for as long as possible. Jeremiah Reynolds stated before the U.S. House of Representatives in 1836 that for sealers, “secrecy is what they know has been deemed a part, and a most important part, of their capital”.¹⁶³ This was so because most islands could only be worked for a few seasons before they were completely abandoned by seals.¹⁶⁴ So when a new hunting ground was found, the slaughter even by a single crew could be enormous, as seen by the 100,000 skin haul of the *Betsey* in 1798 at Mas-á-Fuera off the coast of Chile.¹⁶⁵

In the absence of international control over newly discovered islands, sealers enjoyed a free hand and, as Kurk Dorsey has noted in his analysis of sealing in the Pribilofs, “in a system with no rewards for forbearance, the harvesters will quickly exhaust the natural resource in question”.¹⁶⁶ In a textbook case of Garret Hardin’s ‘tragedy of the commons’ seals were killed regardless of age or sex and those that survived did so only due to the inaccessible nature of their haunts.¹⁶⁷

¹⁶³ Alan Gurney, *Below the convergence: Voyages Towards Antarctica, 1699-1839*, at page 148.

¹⁶⁴ James Kirker, *Adventures to China: Americans in the Southern Oceans 1792-1812*, at page 21.

¹⁶⁵ Alan Gurney, *Below the convergence: Voyages Towards Antarctica, 1699-1839*, at page 147.

¹⁶⁶ Kurk Dorsey, ‘Putting a Ceiling on Sealing: Conservation and Cooperation in the International Arena, 1909-1911’, *Environmental History Review*, Vol. 15, No. 3 (Autumn, 1991), pp. 27-45, at page 28.

¹⁶⁷ Dr. J.A. Allen, ‘Fur seal hunting in the Southern Hemisphere’ in *The fur seals and fur-seal islands of the North Pacific Ocean*, Part 3, (1899) pp. 307-317, at page 307.

The sealers' effectiveness in locating seal rookeries was impressive, and by 1810, almost all of the fur and elephant seal breeding islands were being exploited.¹⁶⁸ Sealing on a commercial scale began on the Falkland Islands around 1774, with Mas-á-Fuera and Juan Fernandez being worked in 1793 followed by South Georgia as well as the Chilean and Patagonian coasts and the islands around these coasts (such as Tierra del Fuego, St. Mary's Island and the St. Felix group) in about 1800.¹⁶⁹ Not long after Cook's discovery of South Georgia, both British and American sealers descended on the islands. The extent of the slaughter here can be gauged from one Captain Fanning's catch in 1800. While master of the *Aspasia* (one of 18 sealing vessels on the island at the time) Fanning and his crew took 57,000 skins.¹⁷⁰ Captain James Weddell claimed that 20,000 tons of elephant seal oil was also taken from the island before his arrival, as British sealers focused on oil at this time because furriers in England still had no method of dressing fur seal skins and the Americans dominated the Canton market.¹⁷¹ Unsurprisingly, the seal populations on South Georgia were quickly depleted by this slaughter. In 1825, Weddell estimated that 1.2 million seals had been harvested there in just over three decades, and all species of seal on the island were "almost extinct".¹⁷² Indeed, the historian of American sealing, Briton Cooper Busch reports no record of any American sealing voyages to South Georgia between 1830 and 1870.¹⁷³

¹⁶⁸ Ian W.G. Smith, *The New Zealand sealing industry: History, archaeology, and heritage management*, at page 4.

¹⁶⁹ Dr. J.A. Allen, 'Fur seal hunting in the Southern Hemisphere' in *The fur seals and fur-seal islands of the North Pacific Ocean*, Part 3, (1899) pp. 307-317, at page 307.

¹⁷⁰ Robert Cushman Murphy, 'The Status of Sealing in the Subantarctic Atlantic', *The Scientific Monthly*, Vol. 7, No. 2 (Aug., 1918), pp. 112-119, at page 113.

¹⁷¹ *Ibid.*, at page 114.

¹⁷² *Ibid.*, at page 114 .

¹⁷³ Briton Cooper Busch, *The War Against the Seals: A History of the North American Seal Fishery*, at page 167.

The fur seal and elephant seal oil trade in the Indian Ocean had already been opened by the time of the pinniped slaughter on South Georgia. The first islands worked by sealers here were St. Paul and Amsterdam as well as Kerguelen and the Prince Edward Islands in the early 1790s. Sealers then moved on to the coast of Australia and in 1803, landed on the Crozet Islands.¹⁷⁴ Well before this date however, dwindling fur seal numbers forced sealers to embark on longer voyages and engage in more extensive hunting. In 1799 the orders to a New England sealing captain specifically mentioned “the Falklands, South Georgia, Island of Amsterdam, and Más Afuera”, with instructions to visit “all or either.”¹⁷⁵

The fur seal trade underwent a brief revival with William Smith’s discovery of the South Shetland Islands in 1819 while on a voyage from Buenos Aires to Valparaiso.¹⁷⁶ The *Hersilia*, the first vessel to go sealing at the South Shetlands, took 9,000 pelts in 15 days before she ran out of salt.¹⁷⁷ Soon after, numerous American and British sealers arrived and Weddell estimated that during the years 1821 and 1822, 320,000 seals were killed and 940 tons of elephant seal oil produced.¹⁷⁸ He also estimated that a further 100,000 seal pups perished due to the loss of their mothers.¹⁷⁹ The large number of seals killed

¹⁷⁴ Dr. J.A. Allen, ‘Fur seal hunting in the Southern Hemisphere’ in *The fur seals and fur-seal islands of the North Pacific Ocean*, Part 3, (1899) pp. 307-317, at page 307.

¹⁷⁵ James Kirker, *Adventures to China: Americans in the Southern Oceans 1792-1812*, at page 13.

¹⁷⁶ Edouard A. Stackpole, *Voyage of the Huron and the Huntress: The American sealers and the discovery of the Continent of Antarctica*, at page 7.

¹⁷⁷ *Ibid.*

¹⁷⁸ Robert Cushman Murphy, ‘The Status of Sealing in the Subantarctic Atlantic’, *The Scientific Monthly*, Vol. 7, No. 2 (Aug., 1918), pp. 112-119, at page 115.

¹⁷⁹ Alan Gurney, *Below the convergence: Voyages Towards Antarctica, 1699-1839*, at page 178.

confirms the indiscriminate nature of the harvest.¹⁸⁰ The fur seal herds on the South Shetlands were commercially extinct by 1822, just three years after their discovery.¹⁸¹

2.3) The rise of the elephant seal oil trade

British and American whalers had encountered elephant seals on the Falkland Islands before the American War of Independence, but they were largely ignored because the price of elephant seal oil was considerably less than that of seal skins.¹⁸² Sealing voyages, however, often included the hunting of elephant seals, though during the fur seal bonanza, elephant seal oil was very much “a cargo for disappointed fur sealers or even successful ones wishing to fill the last corner of their holds before heading home”.¹⁸³

After the collapse of the London seal skin market in 1809 and the rapid devastation of the fur seal population, the roles were reversed with sealers focus shifting to the elephant seal so that by 1820, elephant seals were the primary target and fur seals the filler whenever available.¹⁸⁴ A second wave of sealing moving eastwards thus passed through the

¹⁸⁰ Alan Gurney, *Below the convergence: Voyages Towards Antarctica, 1699-1839*, at page 233.

¹⁸¹ R.I. Lewis Smith and H.W. Simpson, ‘Early Nineteenth Century Sealers’ Refuges on Livingstone Island, South Shetland Islands’, *British Antarctic Survey*, Vol. 74, 1987, pp. 49-72, at page 52.

¹⁸² Rhys Richards, ‘The Commercial Exploitation of Sea Mammals at Iles Crozet and Prince Edward Islands before 1850’, *Polar Monographs 1 1992*, at page 6, and Briton Cooper Busch, ‘Elephants and Whales: New London and Desolation, 1840-1900’, *The American Neptune: a quarterly journal of maritime history* Vol. 40 (1980), pp. 117-126, at page 119.

¹⁸³ Arthur C. Watson, ‘A Voyage on the Sealer *Emeline* and the journal from Washington Fosdick’s manuscript preserved in the museum of the old Dartmouth Historical Society at New Bedford’, *New York Zoological Society*, Vol. 9 (1931), pp. 475-549, at page 476 and Briton Cooper Busch, *The War Against the Seals: A History of the North American Seal Fishery*, at page 165.

¹⁸⁴ K. Townrow, ‘Sealing Sites on Macquarie Island: An Archaeological Survey’, *Papers and Proceedings of the Royal Society of Tasmania* Volume 122(1), 1988, pp. 15-25, at page 16, and Tom Graham, *Cultural Resource Management of the Prince Edward Islands*, B.A. Honours dissertation, Department of Archaeology, University of Cape Town, 1989, at page 11.

Southern Ocean in the first half of the nineteenth century in search of elephant seals.¹⁸⁵

As the South American coast, the Falklands, Tristan da Cunha, the South Orkneys, South Shetlands and South Georgia were cleared of elephant seals, the trade moved to the islands of the Indian Ocean.¹⁸⁶ This shift occurred at different times on different islands, depending on when they were discovered and where they were located.

The thick blubber of the elephant seal yielded a white oil similar to that of the right whale and commanded a price slightly higher than that of right whale oil.¹⁸⁷ The oil was used as a lubricant, and was valued as an odourless and smoke-free fuel for lighting.¹⁸⁸ In addition, it was 'slow of combustion and never became rancid'.¹⁸⁹ The skins of the elephant seal were also used in the manufacture of carriages and harness.¹⁹⁰ The industrial revolution in Europe and North America created a growing demand for oil as a lubricant in machinery, as well as for softening wool in the manufacture of cloths.¹⁹¹ Factories also required elephant seal oil for lighting as did the streets of the expanding

¹⁸⁵ Briton Cooper Busch, 'Elephants and Whales: New London and Desolation, 1840-1900', *The American Neptune: a quarterly journal of maritime history* Vol. 40 (1980), pp. 117-126, at page 119.

¹⁸⁶ Robert Cushman Murphy, 'The Status of Sealing in the Subantarctic Atlantic', *The Scientific Monthly*, Vol. 7, No. 2 (Aug., 1918), pp. 112-119, at page 116.

¹⁸⁷ Rhys Richards, 'The Commercial Exploitation of Sea Mammals at Iles Crozet and Prince Edward Islands before 1850', *Polar Monographs 1 1992*, at page 6.

¹⁸⁸ Ian W.G. Smith, *The New Zealand sealing industry: History, archaeology, and heritage management*, at page 3.

¹⁸⁹ Nathaniel W. Taylor, M.D., *Life on a Whaler or Antarctic Adventures in the Isle of Desolation*, Howard Palmer (ed.), at page 144.

¹⁹⁰ *Ibid.*, at page 143.

¹⁹¹ Alan Gurney, *Below the convergence: Voyages Towards Antarctica, 1699-1839*, at page 197 and Nathaniel W. Taylor, M.D., *Life on a Whaler or Antarctic Adventures in the Isle of Desolation*, Howard Palmer (ed.), at page 144.

urban centres.¹⁹² Due to its multiple uses, there was a steady demand and price for elephant seal oil in many markets.¹⁹³

Although elephant seal oil was always a saleable commodity, the industry was also prone to the same boom-bust cycles as the earlier seal skin trade.¹⁹⁴ In the words of Zarankin and Senatore:

“The discovery and exploitation of new colonies of maritime mammals produced an overabundance of derived products such as oil and furs in international markets. This overabundance resulted in the fall of international prices, which forced an increase in the volume of exploitation. As overexploitation reduced the mammal population, the companies moved elsewhere in search of greater profits. This 4- or 5-year cycle was repeated several times during the nineteenth century”.¹⁹⁵

Despite the sometimes episodic nature of the industry, elephanting voyages brought excellent returns until the 1870s, when diminished demand for animal oils following the introduction of coal-oil, as well as dwindling elephant seal numbers brought the global trade to a close.¹⁹⁶

¹⁹² Alan Gurney, *Below the convergence: Voyages Towards Antarctica, 1699-1839*, at page 197.

¹⁹³ Briton Cooper Busch, *The War Against the Seals: A History of the North American Seal Fishery*, at page 175.

¹⁹⁴ *Ibid*, at page 165.

¹⁹⁵ Andrés Zarankin and María Ximena Senatore, ‘Archaeology in Antarctica: Nineteenth-Century Capitalism Expansion Strategies’, in *International Journal of Historical Archaeology*, Vol. 9, No. 1, March 2005, at page 44.

¹⁹⁶ J.H. Kidder, ‘The Natural History of Kerguelen Island’, *The American Naturalist*, Vol. 10, No. 8 (aug., 1876), pp. 481-484, at page 484 and Arthur C. Watson, ‘A Voyage on the Sealer *Emeline* and the journal from Washington Fosdick’s manuscript preserved in the museum of the old Dartmouth Historical Society at New Bedford’, *New York Zoological Society*, Vol. 9 (1931), pp. 475-549, at page 478.

2.4) A short history of sealing on the Prince Edward and Crozet Islands

When the first sealers arrived on the Prince Edward Islands is unclear, but it would appear to be soon after the account of Cook's final voyage of exploration was published in the late 1780s. According to Thomson and Murray, who wrote a narrative of the voyage of the *H.M.S. Challenger* in 1885, "[f]rom 1776 to the present time both islands have been much frequented by whalers and sealers".¹⁹⁷ While the Prince Edward Islands began being exploited soon after news of their rediscovery was made public, the Crozets do not appear to have been visited by sealers until 1803.¹⁹⁸ The first men to set foot on the Crozet Islands (as neither Cook nor Du Fresne had been able to land due to poor weather) are generally assumed to be the crew of the New York ship *Catherine* under Henry Fanning.¹⁹⁹ The *Catherine* went in search of the Crozet Islands in mid-1803, the year "the manuscript of the discoverer of [the Crozet Islands] was received".²⁰⁰ Fanning stopped at the Prince Edward Islands and dropped off a sealing gang before setting out in search of the Crozet Islands. Fanning's account is also the first record of a sealing gang being stationed on the Prince Edward Islands, though it is unlikely to have been the first group left to hunt there.

Fanning finally located and landed on Possession Island (the largest of the Crozet Islands) in late 1804, owing to the meagre and inaccurate sailing directions at his disposal, the islands being found more than 100 miles south of the latitude laid down in

¹⁹⁷ Wyville Thomson C, Murray J, *The Voyage of the H.M.S. Challenger 1873-1876. Narrative Vol. 1*, at page 292.

¹⁹⁸ *Ibid.*, at page 319.

¹⁹⁹ Briton Cooper Busch, *The War Against the Seals*, at page 26.

²⁰⁰ James Kirker, *Adventures to China: Americans in the Southern Oceans 1792-1812*, at page 62.

the charts.²⁰¹ After obtaining a fine cargo of skins, Fanning left a sealing gang on the Island and sailed for Canton.²⁰² While Fanning was in Asia, two other American vessels also rediscovered the Crozet Islands. The *Favourite*, a Nantucket vessel, found the islands in 1805 after searching for a few months,²⁰³ and took between 17,080 and 25,000 skins.²⁰⁴ The other vessel, *Criterion* which arrived at about the same time, took some 13,000 seal skins.²⁰⁵ Once the real location of the Crozet Islands became better known, they “became the scene of a massive slaughter of seals during 1805 and 1806”, one of the more important centres of the fur-seal fishery and later, when the fur seal numbers began to dwindle, the elephant seal fishery.²⁰⁶

As explained above, sealers turned their attention to the oil-bearing elephant seals as fur seal numbers and the market price of their skin declined. Members of the crew of the American vessel *Pickering*, left on the Prince Edward Islands for two years in 1818, were the first on record to have been instructed to harvest both skins and oil.²⁰⁷ This shift is unsurprising because when Goodridge arrived at the Prince Edward Islands in November

²⁰¹ Arthur C. Watson, ‘A Voyage on the Sealer *Emeline* and the journal from Washington Fosdick’s manuscript preserved in the museum of the old Dartmouth Historical Society at New Bedford’, *New York Zoological Society*, Vol. 9 (1931), pp. 475-549, at page 479 and Rhys Richards, ‘The Commercial Exploitation of Sea Mammals at Iles Crozet and Prince Edward Islands before 1850’, *Polar Monographs 1 1992*, at page 4.

²⁰² James Kirker, *Adventures to China: Americans in the Southern Oceans 1792-1812*, at page 62.

²⁰³ *Ibid.*, at page 64.

²⁰⁴ Rhys Richards, ‘The Commercial Exploitation of Sea Mammals at Iles Crozet and Prince Edward Islands before 1850’, *Polar Monographs 1 1992*, at page 4.

²⁰⁵ *Ibid.*

²⁰⁶ Rhys Richards, ‘The Commercial Exploitation of Sea Mammals at Iles Crozet and Prince Edward Islands before 1850’, *Polar Monographs 1 1992*, at page 4 and Arthur C. Watson, ‘A Voyage on the Sealer *Emeline* and the journal from Washington Fosdick’s manuscript preserved in the museum of the old Dartmouth Historical Society at New Bedford’, *New York Zoological Society*, Vol. 9 (1931), pp. 475-549, at page 481.

²⁰⁷ Tom Graham, *Cultural Resource Management of the Prince Edward Islands*, at page 11.

1820 on board the *Princess of Wales*, he found the fur seals to be ‘very scarce’ whereas there were elephant seals in great numbers.²⁰⁸

By the 1830s, the expansion of the French whale fishery led to some vessels arriving at the Crozet Islands specifically to take elephant seals and American whaleships also began visiting the ‘Crozettes Grounds’,* with many listing the area as their main whaling ground.²⁰⁹ American whaleships in this area were so numerous during the 1840s that one emigrant vessel on its way from the Cape to Tasmania reported that “hardly 24 hours elapsed without our passing a vessel occupied in flensing (‘cutting-in’) a whale”.²¹⁰ These whalers however would “seldom or never communicate with the shore”.²¹¹

According to Rhys Richards, a slump in the price of seal skins in the late 1830s, despite their increasing scarcity, led to a growth in the number of vessels hunting elephant seals on the islands, which peaked in the latter half of the 1840s.²¹²

By the end of the 1840s, whales on the ‘Crozettes Grounds’ were in decline and the abundance of whales on the north west coast of America, the California gold rush of 1849 and economic problems in New England combined to divert the attention of American

²⁰⁸ Rhys Richards, ‘The Maritime Fur Trade: sealers and other residents of St Paul and Amsterdam, *The Great Circle: Journal of the Australian Association for Maritime History* Vol. 6, 1984, pages 93-109, at page 99.

* The ‘Crozettes Grounds’ consisted of the area surrounding the Crozet and Prince Edward Islands.

²⁰⁹ Rhys Richards, ‘The Commercial Exploitation of Sea Mammals at Iles Crozet and Prince Edward Islands before 1850’, *Polar Monographs 1 1992*, at pages 9 and 10.

²¹⁰ *Ibid.*

²¹¹ Jeremiah Hughes (ed.), *Niles’ National Register containing Political, Historical, Geographical, Scientific, Statistical, Economical, and Biographical Documents, Essays and Facts: together with Notices of the Arts and Manufactures and a Record of the Events of the Times*, at page 262.

²¹² Rhys Richards, ‘The Commercial Exploitation of Sea Mammals at Iles Crozet and Prince Edward Islands before 1850’, *Polar Monographs 1 1992*, at page 14.

whalers elsewhere.²¹³ American sea elephanting voyages to the Southern Ocean also relocated from the Crozets to Kerguelen, which had large numbers of elephant seals and also boasted safer harbours.²¹⁴ There was also a diminishing demand for elephant seal oil with the introduction of coal oil into general use.²¹⁵ The declining number of American vessels at the islands by the late 1840's saw the elephant oil trade at the Crozets pass largely into the hands of the Cape based sealers, led for the most part by a man named John Jearey.²¹⁶

2.5) Nomenclature issues regarding the Prince Edward and Crozet Islands

The Prince Edward Islands were discovered by Barent Barends Lam, commander of the Dutch East Indiaman *Maarsseveen* on the 4 March 1663, while en route to Java. Upon their discovery, he named the two islands 'Dina' and 'Maarsseveen'.²¹⁷ The islands were rediscovered almost a century later on 13 January 1772 by Marion Du Fresne when he was in charge of a surveying expedition on the frigate *Le Mascarin*.²¹⁸ Du Fresne, convinced he had discovered the long sought after southern continent, named the one island 'Isle de l'Esperance' (Isle of Hope), while the other island was named 'Ile de la Caverne' (Cavern Isle) after a large cave that was clearly visible on its north east side.²¹⁹ But once he discovered his error, he changed their name to 'Iles de Froides' (The Frigid

²¹³ Rhys Richards, 'The Commercial Exploitation of Sea Mammals at Iles Crozet and Prince Edward Islands before 1850', *Polar Monographs 1 1992*, at page 11.

²¹⁴ *Ibid*, at page 17.

²¹⁵ J.H. Kidder, 'The Natural History of Kerguelen Island', *The American Naturalist*, Vol. 10, No. 8 (aug., 1876), pp. 481-484, at page 484.

²¹⁶ Rhys Richards, 'The Commercial Exploitation of Sea Mammals at Iles Crozet and Prince Edward Islands before 1850', *Polar Monographs 1 1992*, at page 18.

²¹⁷ Tom Graham, *Cultural Resource Management of the Prince Edward Islands*, at page 6.

²¹⁸ John H. Marsh, 'No Pathway Here', at page 22.

²¹⁹ Tom Graham, *Cultural Resource Management of the Prince Edward Islands*, at page 7.

Islands).²²⁰ After failing to land on the islands, Du Fresne sailed eastwards and discovered the Crozet Islands. The honour of naming the islands however fell to Captain James Cook.²²¹ In March 1775, Cook met Julien Crozet (who was second in command under du Fresne) while at the Cape and he was given a chart showing the discoveries made by Du Fresne as well as those of Captain Kerguelen (the discoverer of Kerguelen Island).²²² Because the islands had no names on the French Chart that Cook received, he named the Prince Edward's Islands after the fourth son of King George III and the "four others [islands] which lie from nine to 12 degrees of longitude more to the east, and nearly in the same latitude... by the name of Marion's and Crozet's Islands, to commemorate their discoveries".²²³ This suggests that Cook did not name either of the two islands that today form the Prince Edward Island group 'Marion' (Fig. 2.3).

²²⁰ John H. Marsh, *No Pathway Here*, at page 23.

²²¹ H.W. Tilman, 'Voyage to the Îles Crozet and Îles Kerguelen', *The Geographical Journal*, Vol. 127, No. 3 (Sep., 1961), pp. 310-316, at page 310.

²²² James Cook, *The Voyages of Captain James Cook in two volumes*, Vol. 1, at page 587.

²²³ *Three Voyages of Captain James Cook Round the World complete in Seven Volumes*, Vol. 5, at page 137.

‘Crozet’s Isles’ when referring to the Crozet Island group.²²⁶ The inconsistency with regards to the nomenclature of these islands was not helped by the inexact nature of the maps used during the nineteenth century, which often placed the islands at the incorrect longitude. As late as 1820, these errors led the crew of the *Princess of Wales* to believe that the islands of Dina and Maarsseveen were different to the Prince Edward Islands as they only steered for the Prince Edward Islands after unsuccessfully searching for Dina and Maarsseveen.²²⁷

By the time Cape vessels entered the sea elephant oil trade in the early 1830s, the term ‘Crozet’s’ included both the Prince Edward and Crozet Islands. For example, the *Mary*, one of the first vessels to leave the Cape on an elephanting voyage to the Southern Ocean, is listed in the 1833 Commercial Exchange shipping register as returning from the Crozets,²²⁸ though from her logbook it seems she may have also reconnoitred the Prince Edward Islands.²²⁹ On her second voyage to ‘the Crozets’, the *Mary* was wrecked on Prince Edward Island on 4 September, 1833, and her master reported that he had been sent to the Prince Edward Islands to establish a ‘sea elephant oil fishery’ for Messrs William Liesching and George Twycross.²³⁰

²²⁶ John Purdy, *Tables of the Positions or of the latitudes, of places, composed to accompany the ‘oriental navigator,’ or sailing directions for the East-Indies, China, Australia, etc.*, at page 32.

²²⁷ Charles Medyett Goodridge, *Narrative of a Voyage to the South Seas and the Shipwreck of the Princess of Wales Cutter, with an Account of Two Years Residence on an Uninhabited Island*, at page 35.

²²⁸ *Commercial Exchange Shipping List*, CC 2/12.

²²⁹ *Cape Archives*, CSC 2/1/1/28 Ref 32, Record of Proceedings of Illiquid Case. John Russel, John Young, and William Saunders Versus William Leisching and George Twycross. Payment for Breach of Contract and Loss of Profits, 1834.

²³⁰ *Commercial Exchange Shipping List*, CC 2/12, and *Cape Archives*, CO Vol. No. 3992 Ref 139, Memorial received. John Curran. Protection of the Fisheries Established by Him on the Prince Edward Islands. 1837.

Similarly the *Conservative* left Table Bay in August, 1855, for the Crozets but was wrecked two months later at the Prince Edward Islands, and the *Maria* left for the Crozets in May, 1857 only to suffer shipwreck two weeks later while unloading stores at Prince Edward Island.²³¹ The Crozet and Prince Edward Islands were thus intimately linked, even though separated by more than 1000 kilometres of open ocean, constituting a unified field of operation for nineteenth century Cape sealers. For this reason, I shall use the term ‘the Crozets’ throughout, as it was used by Cape sealers, to denote both island groups.

²³¹ *Cape of Good Hope and Port Natal Shipping and Mercantile Gazette*, No. 640, 4 April 1856, and No. 733, 15 January 1858.

Chapter 3: The Cape Town/Crozets elephant seal oil Trade (1832–1869)

3.1) Introduction

Between the years of 1832 and 1869, Cape Town vessels made at least 100 voyages between the Cape and the Crozets to hunt for elephant seals. This chapter traces the history of this trade and considers the factors that shaped it. The Cape Town/Crozets sea elephanting trade can be broken down into three distinct phases: pioneering (from 1832–1838); the Jearey era (c 1838–1858); and a brief revival (1865–1869). A complete list of all Cape based vessels that departed to and/or returned from the Crozets can be found in Appendix A.

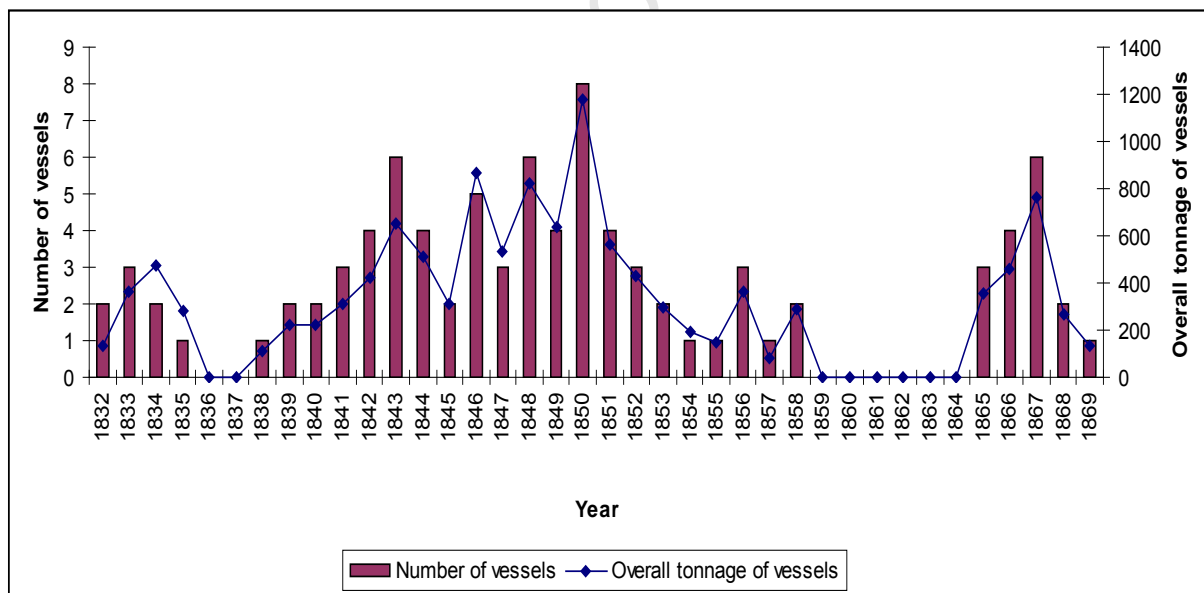


Figure 3.1: The number and overall tonnage of Cape based vessels returning to Cape Town from the Crozets for each year from 1832–1869.

3.2) Testing the waters (1832-1838)

The rise of the elephant seal oil trade at the Crozets discussed in the previous chapter did not go unnoticed at the Cape, but local merchants lacked the cartographic intelligence necessary to locate the Crozets. The accidental arrival of Captain Samuel Lingard at the Cape was to change this. Lingard was master of the brig *Hebe*, which was wrecked on the Crozets on 16th August 1831, and he arrived in Table Bay on the 20 February 1832 after being rescued by the *Phocion*.²³² Soon after his arrival, Lingard was placed in charge of the *Flamingo* (whose agents were the Cape Town merchants Thomson and Co.), and made the first recorded voyage by a Cape based vessel to the Crozets for elephant seal oil. The *Flamingo* returned to the Cape on 15 June, 1832, with an unknown quantity of oil.²³³ The maiden voyage appears to have been a success as five more voyages were made by Cape based vessels to the Crozets over the course of the following eighteen months.²³⁴

However, it seems the Cape merchants who pioneered the elephant seal oil trade from Table Bay were unable to earn a sufficient or consistent profit from their Crozet enterprises. Thomson and Co. left the trade after the second voyage of the *Flamingo*, and may have been financing Lingard rather than venturing on their own account. Samuel Lingard was described as the ‘master, agent, and overseer of the fishermen at the Crozets’

²³² *Commercial Exchange Shipping List*. CC 2/12.

²³³ *Ibid.*

²³⁴ These vessels were the *George 4th*, the *Flamingo*, the *Mary*, and the *St. Helena*.

when the *Hebe* was sent there,²³⁵ and it is likely that he organised the *Flamingo's* voyages to the Crozets to relieve some of his crew from the *Hebe* who had stayed behind elephanting, probably under the command of the *Hebe's* Chief Mate, John McDonald. Soon after Lingard returned from the Crozets in the middle of 1833, he ran into financial difficulties and died at Cape Town an insolvent two years later.²³⁶ After his death, Thomson and Co. temporarily withdrew from the elephant seal oil trade.

The second vessel to leave Cape Town for the Crozets was the *George 4th*, which had William Liesching and George Twycross listed as her agents. Both had earlier been involved in the coastal sealing trade, and entered the Crozets sea elephanting trade in 1832.²³⁷ Their voyages were a disaster, plagued by deficient logistics, mutinous labour and very little oil. Part of the reason for Liesching and Twycross' failure was their gang's inability to live off the land, making the sealers ill and unable, or unwilling to work. In all, their enterprise produced about 70 tons of elephant seal oil, and after deducting costs Liesching and Twycross were left with a profit of about 440 rixdollars.²³⁸ From this they had to pay labour, the legal costs from a court case arising from the undertaking, and deduct losses caused by the wreck of the *Mary*, which went down off Prince Edward Island in September, 1833. In the face of these poor returns and reverses, Liesching and

²³⁵ *Cape Archives*. CSC Volume No. 2/1/1/31 Reference 18. Record of Proceedings of Illiquid Case. Harrison Watson, Trustee of Insolvent Estate of Samuel Lingard Versus John MacDonald. Debt. 1835.

²³⁶ See *Cape Archives*. MOOC Volume No. 6/9/5 Reference 973. Lingard, Samuel. Death Notice. 1835, and *Cape Archives*. CSC Volume No. 2/1/1/31 Reference 18. Record of Proceedings of Illiquid Case. Harrison Watson, Trustee of Insolvent Estate of Samuel Lingard Versus John MacDonald. Debt. 1835.

²³⁷ See *Cape Archives*. CO Volume No. 3945 Reference 923. Memorials Received. George Twycross. Privilege of Sealing on Robben Stein. 1829, and *Cape Archives*. CO Volume No. 3964 Reference 102. Memorials Received. W. Liesching. Tender for Lease of Dyer's Island. 1833., and CO Volume No. 3951 Reference 238. Memorials Received. Willem Liesching. Request Pertaining to Seals. 1831.

²³⁸ *Cape Archives*. CSC Volume No. 2/1/1/28 Reference 32. Record of Proceedings of Illiquid Case. John Russel, John Young, and William Saunders Versus William Leisching and George Twycross. Payment for Breach of Contract and Loss of Profits. 1834.

Twycross soon abandoned sea elephanting on the Crozets. For Liesching however, the economic damage was too great and he was declared bankrupt in 1836.²³⁹

The master of the *Mary* on her Crozet voyages, John Curran, continued elephanting on Prince Edward Island after his principals withdrew. Curran claimed that when Liesching and Twycross abandoned the Crozets in 1834, they made him a present of all their property that remained on the islands “in consideration of his faithful services”.²⁴⁰ Curran appears to have continued the fishery on his own account, claiming to have invested £1500 in a house, tryworks and cooperage and another £1,000 on outfitting costs but that the fishery “has been visited and worked much to my [Curran’s] injury by the American Barque ‘White Oak’ of New York”.²⁴¹ Curran accordingly asked the Governor to afford him “an exclusive Right or Protection from the intrusions of foreigners” on the grounds that Cook’s discovery of the islands made them British territory.²⁴² His request was bluntly refused, with a reply that summed up the nature of life and sealing on the sub-Antarctic islands: “...the Island is not a dependency of the Cape of Good Hope...It is a part of the Right of Nations where ‘might is right’”.²⁴³ This suggests that although the Cape Government was unwilling to recognise it, Cape sealers had already begun to view the Crozets as an extension of the Cape frontier.

²³⁹ *Cape Archives*. MOOC Volume No. 13/1/69 Reference 24. Liesching, William. Liquidation and Distribution Account. 1836. Unfortunately this liquidation and distribution account could not be found at the National Archives in Cape Town.

²⁴⁰ *Cape Archives*. CSC Volume No. 2/6/1/19 Reference 128. Motion. Petition of John Curran in Re J. Curran Versus John Dean and William George Anderson. 1840.

²⁴¹ *Cape Archives*. CO Volume No. 3992 Reference 139. Memorials Received. John Curran. Protection of the Fisheries Established by Him on the Prince Edward Islands. 1837.

²⁴² *Ibid.*

²⁴³ *Ibid.*

Curran returned to the Crozets in 1837 after entering a contract with John Deane and George Herbert.²⁴⁴ Only three vessels are listed as returning from the Crozets between 1834 and 1838 and the only cargo enumerated was the meagre 10 tons of oil and 2 tons of blubber returned in 1834 by the *Matchless*, hardly a successful voyage. Curran returned to Table Bay in 1838 to discover that George Herbert had left for England and William George Anderson, a sleeping partner in the business, advertised the sale of the house, tryworks and other stores on the island which were sold for seven shillings and six pence to Mr John Jearey.²⁴⁵

3.3) The Jearey years (1838–1858)

Jearey was to dominate the elephant seal oil trade for well over two decades and the *Cape of Good Hope and Port Natal Shipping and Mercantile Gazette* described him as ‘the founder’ of the fisheries branch at the Cape.²⁴⁶ The extent of Jearey’s domination of the Crozets trade is evident from the fact that he dispatched over two thirds (69) of the voyages sent from the Cape to the Crozets between 1832–1869. Between the years 1838–1858 his domination of the trade was almost total, of all the voyages made during these two decades, only 4 of the 73 voyages made did not have Jearey listed as the agent or consignee.

²⁴⁴ *Cape Archives*. CSC Volume No. 2/6/1/19 Reference 128. Motion. Petition of John Curran in Re J. Curran Versus John Dean and William George Anderson. 1840.

²⁴⁵ *Ibid.*

²⁴⁶ *Cape of Good Hope and Port Natal Shipping and Mercantile Gazette*, No. 108, 23 January 1846.

John Jearey* was born in 1800 in Norfolk, England. It is unclear when he first became a sailor, but it must have been at a relatively young age as in 1822 he was master of the *Sir Edward Paget* when she stopped off at the Cape bound from England to Calcutta.²⁴⁷

Jearey first applied to remain in the Colony in order to create what he called ‘a boating business’, presumably offloading cargo from vessels that put in at Table Bay.²⁴⁸ It is unclear whether this request was granted as Jearey remained master of the *Sir Edward Paget* until 1828. Jearey’s first foray into the sealing industry came in 1829 when he sent men to hunt on the Robben Steen at the mouth of the Oliphants River.²⁴⁹ He was forced to abandon this venture, however, as the islet had already been leased to George Twycross.²⁵⁰ There is no indication that Jearey again tried to enter the coastal sealing trade and this may have been due to the fact that competition for fur seals amongst the coastal islands was fierce and by the 1840s, the African guano rush had severely disrupted seal populations on these islands.²⁵¹ By 1832, Jearey had added an inn called the ‘Ship Tavern’ to his boating business, allowing him to keep a watchful eye on the shipping and seamen making landfall in Table Bay.²⁵² Jearey also bought the remains of shipwrecks and salvaged what he could from them. For example, in 1834, he purchased the remains of the French ship *L’Aigle* from which he saved seven tons of whale oil

* There are various spellings of his surname, ranging from Jerry to Jeary to Geary and even Jeavey, but for the sake of consistency I shall be using Jearey as this is the name that appears most often in the archival records

²⁴⁷ *The African Court Calendar, 1823.*

²⁴⁸ *Cape Archives.* CO Volume No. 3926 Reference 48. Memorials Received. John Jerry. Requesting a Colonial Passpot. 1824.

²⁴⁹ *Cape Archives.* CO Volume No. 3943 Reference 461. Memorials Received. John Jerry. Permission to Seal on Robben Steen Island. 1829.

²⁵⁰ *Cape Archives.* CO Volume No. 3943 Reference 459. Memorials Received. John Jearey. Lease of Robben Steen Island. 1829.

²⁵¹ Jeremy David and Lance van Sittert, ‘A Reconstruction of the Cape (South African) fur seal harvest 1653–1899 and a comparison with the 20th-century harvest’ in *South African Journal of Science*, 104, March/April 2008, pp. 107-110, at page 109.

²⁵² *Cape Archives.* CO Volume No. 3957 Reference 20. Memorials Received. John Jeary. Remission of Fine. 1832.

which he exported.²⁵³ By 1837 he had acquired a vessel of his own, the *Friends Good Will*.²⁵⁴

3.3.1) 'Might is right', re-establishing the Cape Town/Crozets elephant seal oil trade

The captain of the *Friends Good Will* was John McDonald,* almost certainly the same John McDonald who had been Chief Mate on the *Hebe* under Samuel Lingard when it was wrecked on the Crozets in 1831 and subsequently the leader of a sealing gang encountered by the crew of the *Mary* in 1833. McDonald returned to the Cape, being called as a witness in a court case regarding the insolvent estate of Samuel Lingard in 1835.²⁵⁵ By December, he had signed as the master of *Friends Good Will*, whose agents at the time were Dickson and Co.²⁵⁶ McDonald remained in charge of the vessel after its ownership passed to John Jearey. We can only speculate on the reasons Jearey decided to enter the Crozets elephanting trade when those before him had tried and failed but John McDonald's elephanting experience on the islands was no doubt crucial to his decision. Thus less than a year after John McDonald entered his employ Jearey decided to purchase the sealing station on Prince Edward Island and McDonald commanded Jearey's first six voyages to the Crozets beginning in December 1838. The line of descent from Lingard, via Curran to McDonald confirms that cartographic knowledge and practical experience were paramount for merchants who wished to enter the elephant seal oil trade. Few

²⁵³ *Cape Archives*. CO Volume No. 3971 Reference 22. Memorials Received. John Jeavey. Request to Sell Seven Tons of Oil to the Public. 1834.

²⁵⁴ *Commercial Exchange Shipping List*. CC 2/14.

* He is also sometimes referred to as John MacDonald.

²⁵⁵ *Cape Archives*. CSC Volume No. 2/1/1/31 Reference 18. Record of Proceedings of Illiquid Case. Harrison Watson, Trustee of Insolvent Estate of Samuel Lingard Versus John MacDonald. Debt. 1835.

²⁵⁶ *Commercial Exchange Shipping List*. CC 2/12.

masters knew how to find the islands, navigate safely around them, and live off the land when ashore.

Jearey took care to conserve this valuable capital by promoting people through the ranks who had been elephanting on the Crozets under John McDonald. In this way information and experience was retained in the business, expanded, and passed from one master to the next. An example of this was George Whitley. Whitley entered Jearey's employ in 1836 with over a decade of experience as a mariner. He first worked 'before the mast' for Jearey before being promoted to mate, and then master.²⁵⁷ He made his first voyage as the captain of a vessel in August, 1841, and made another 12 voyages to the Crozets until 1847. No less a navigator than Sir James Clark Ross, commanding the *HMS's Erebus* and *Terror*, reported that that the Crozet Islands were not where they had been laid out on the charts and that they would have lost much time searching for them had a more accurate description of their whereabouts not been provided by a Cape Town merchant (probably Jearey), at whose request Ross undertook to convey some provisions to Possession or East Island for the sealing gangs he had left there.²⁵⁸

Sailing to the islands was made even more difficult by the conditions experienced en route. Fernández-Armesto has described the sea as being the most hostile type of environment in the biosphere, apart from permanent ice.²⁵⁹ Those involved in the Cape

²⁵⁷ *Cape Archives*. CSC Volume No. 2/1/1/58 Reference 24. Record of Proceedings of Illiquid Case. James Bance Versus John Jearey. Delivery of Goods. 1847.

²⁵⁸ Sir James Clark Ross, *Voyage of Discovery and Research in the Southern and Antarctic Regions During the Years 1839-43, Vol 1*, at page 49.

²⁵⁹ Felipe Fernández-Armesto, 'Maritime History and World History' in Daniel Finamore (ed.) *Maritime History as World History*, at page 8.

Town/Crozets elephant seal oil trade worked in extreme conditions. Not only did they have to deal with the constant gales of the ‘roaring forties’, where 50-80 kilometre per hour winds were common with gusts more than twice this speed often arriving without warning.²⁶⁰ They also had to deal with the 4 or 5°C temperature drop that occurs after crossing the sub-tropical Convergence.²⁶¹ The area between the Antarctic and the sub-tropical Convergence is known as the sub-Antarctic region and this is where the Crozet and Prince Edward Islands are located (Fig. 3.2).²⁶² The sealers had to stay warm in this environment with nothing but the clothes on their back as no fire was used on vessels except for cooking food, and for trying out the blubber at the islands.²⁶³

In addition to the wind and the cold, the region around the Crozets is often cloudy or is covered in dense fog that made sailing in the vicinity of the islands a dangerous task. The fog became so thick around the Crozets that there have even been instances of vessels colliding with each other.²⁶⁴ The dense fog was one of the main reasons for the wreck of the *Richard Dart* in 1849, and the wreck of the *Strathmore* in 1875.²⁶⁵ Vessels

²⁶⁰ Intergovernmental Oceanographic Commission of UNESCO, <http://ioc.unesco.org/glossafrica/Reports/NATIONAL%20REPORTS-%20OTHER%20COUNTRIES.doc> accessed on the 03/04/2010.

²⁶¹ G.A. Knox, ‘Littoral Ecology and Biogeography of the Southern Oceans’ *Proceedings of the Royal Society of London. Series B, Biological Sciences*, Vol. 152, No. 949, A Discussion on the Biology of the Southern Cold Temperate Zone (Jul. 12, 1960), pp. 577-624, at page 581. If one continues south, another line will be crossed where the temperature decreases by another 2 or 3°C known as the Antarctic Convergence.

²⁶² G.A. Knox, ‘Littoral Ecology and Biogeography of the Southern Oceans’ *Proceedings of the Royal Society of London. Series B, Biological Sciences*, Vol. 152, No. 949, A Discussion on the Biology of the Southern Cold Temperate Zone (Jul. 12, 1960), pp. 577-624, at page 581.

²⁶³ Edward Swift Balch, ‘Stonington Antarctic Explorers’, *Bulletin of the American Geographical Society*, Vol. 41, No. 8 (1909), pp. 473-492 at page 490.

²⁶⁴ Arthur C. Watson, ‘A Voyage on the Sealer *Emeline* and the journal from Washington Fosdick’s manuscript preserved in the museum of the old Dartmouth Historical Society at New Bedford’, *New York Zoological Society*, Vol. 9 (1931), pp. 475-549, at page 504.

²⁶⁵ For more on these two shipwrecks see the *Cape of Good Hope and Port Natal Shipping and Mercantile Gazette*, No. 307, 16 November 1849, and Ian Church, *Survival on the Crozet Islands: The Wreck of the Strathmore in 1875*.

bound to the Crozets also had to beware of icebergs which provided another dangerous and unpredictable hazard. While cruising between the Prince Edward and Crozet Islands in mid-summer 1842, the *Ontario* of Sag Harbour frequently sighted icebergs amid the fogs and gales.²⁶⁶

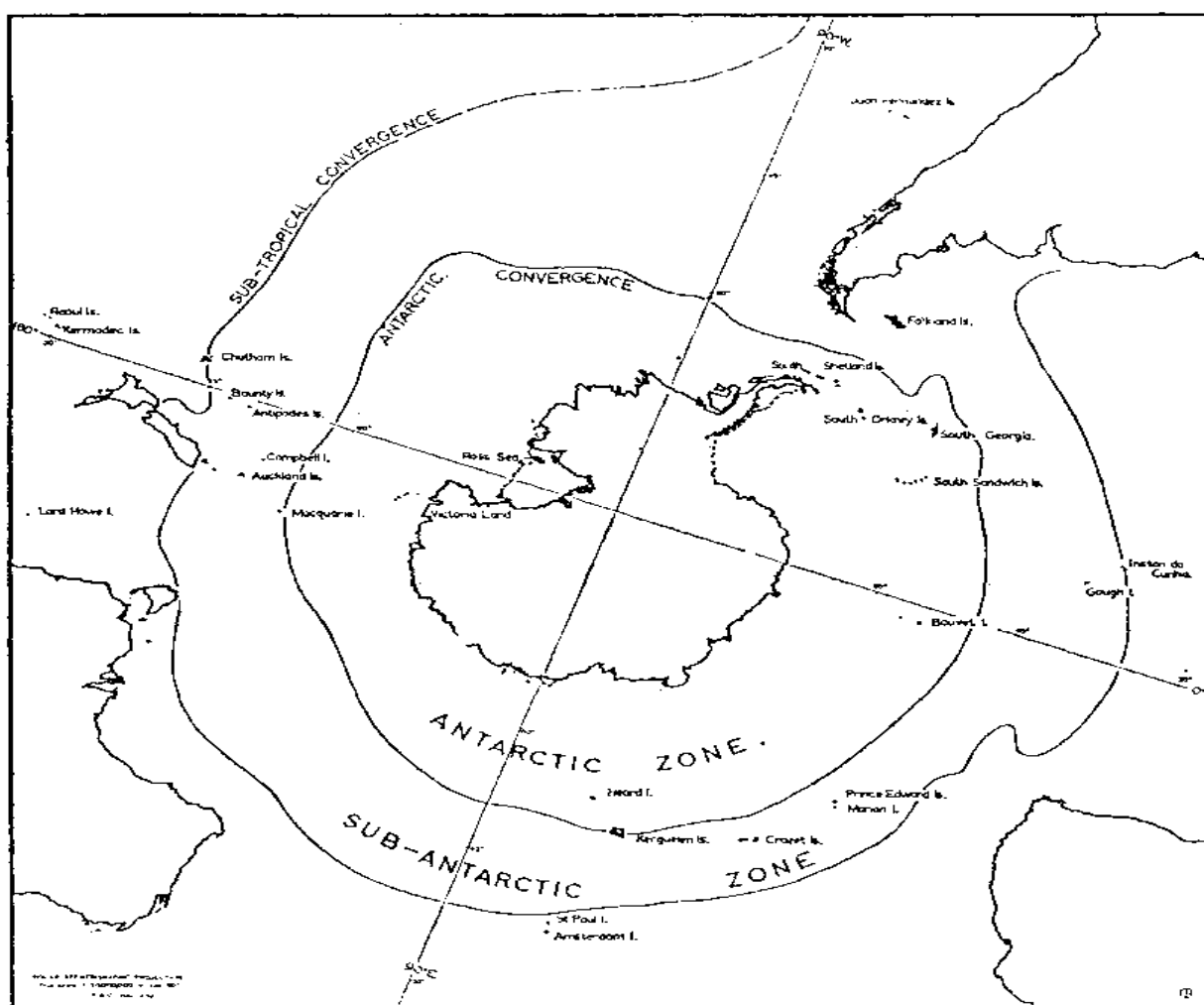


Figure 3.2: The mean positions of the Antarctic and sub-tropical Convergences.²⁶⁷

²⁶⁶ Rhys Richards, 'The Commercial Exploitation of Sea Mammals at Iles Crozet and Prince Edward Islands before 1850', *Polar Monographs* 1 1992, at page 11.

²⁶⁷ Knox, G.A. (Jul. 12, 1960) 'Littoral Ecology and Biogeography of the Southern Oceans' in *Proceedings of the Royal Society of London. Series B, Biological Sciences*, Vol. 152. No. 949, A Discussion on the Biology of the Southern Cold Temperate Zone, pp. 577-624 at page 582.

The strong winds often proved to be the most dangerous hazard of all. Van Zinderen Bakker Sr., while on Marion Island as part of the South African Biological and Geological Expedition of 1965–1966, described how a scene of calm could abruptly change “into a turmoil of wind and water while enormous waves will crash against the steep shores, dissolving into clouds of spray. Under these conditions the ship has for safety reasons to leave without delay and ride out the storm, away from the treacherous shores, to return perhaps on a perfect sunny day”.²⁶⁸ He and the rest of the team calculated that for 150 days of the year, the windspeed at the island reached moderate or full gale force with gusts of 130–200 km per hour and that the steadiness of the circumpolar winds were constantly interrupted by cyclones which passed the islands in a south-east direction.²⁶⁹ During such weather, a certain Captain Dixon while at the Crozet Islands described the sea breaking on:

“stark, pinnacled cliffs...with a fury that is absolutely hellish. You had to see it to appreciate the blood-chilling fury of it. Terrific walls of water smash against the cliffs in a thunderous rage. It is a stupendous spectacle, a maelstrom of spray and leaping water”.²⁷⁰

The logbook of the *Mary* in 1833 constantly remarks on the ‘hard gales’, ‘heavy seas’, ‘squalls of wind and hail’, and ‘thick fog’ she endured on her voyage to the Crozets and on more than one occasion she tore some of her sails.²⁷¹ Curran, the Captain of the vessel, described how at times, the sea would break completely over the vessel, which

²⁶⁸ E.M. van Zinderen Bakker, Sr, ‘Introduction’ in E.M. van Zinderen Bakker Sr., J.M. Winterbottom and R.A. Dyer (eds.), *Marion and Prince Edward Islands: Report on the South African Biological and Geological Expedition 1965-1966*, at page 1.

²⁶⁹ *Ibid*, at page 5.

²⁷⁰ Ian Church, *Survival on the Crozet Islands: The Wreck of the Strathmore in 1875*, at page 93.

²⁷¹ Logbook of the *Mary*, CSC Volume No. 2/1/1/28 Reference 32. Record of Proceedings of Illiquid Case. John Russel, John Young and William Saunders Versus William Leishing and George Twycross. Payment for Breach of Contract and Loss of Profits. 1834.

required them to pump the ship every hour to remove the water, and on the 17 April 1833, ‘strong gales carried away some of the bulwark forward on the larboard side’ while on the 12 April ‘some of the bulwark [was] carried away’.

More than one vessel fell foul of the tempestuous winds in the vicinity of the Crozets in the nineteenth century. At the best of times calculating one’s position at sea was a difficult proposition made even more difficult by the sky being three-fourths or more obscured by clouds throughout the year.²⁷² Another factor to keep in mind is that in the lower latitudes the length of day is only 8.6 hours long in winter.²⁷³ Being in the vicinity of the islands in the dark was a grim affair. There was a chance of being blown right past the islands or worse still, of hitting one of the islands, or the many submerged rocks along their shores.²⁷⁴ This happened to the *Conservative*, which was lost on the Prince Edward Islands in 1855 “during a dark night and a heavy sea”.²⁷⁵ On the 28th October 1841, the American vessel *Uxor* was wrecked on Marion Island after a gale caused her to part from her moorings while the *Fluminence* was also wrecked in the same gale with the loss of 14 of her 19 man crew.²⁷⁶ The report of the wreck of the *Maria* on Prince Edward Island in 1857 contained an account written by the Captain of the vessel which gives a good idea of just how difficult it must have been to sail a ship in this region. According to Captain Hamilton, the *Maria* set sail on the 2nd May 1857, and soon entered the roaring forties

²⁷² B.R. Schulze, ‘The Climate of Marion Island’ in E.M. van Zinderen Bakker Sr., J.M. Winterbottom and R.A. Dyer (eds.), *Marion and Prince Edward Islands: Report on the South African Biological and Geological Expedition 1965-1966*, at page 20.

²⁷³ E.M. van Zinderen Bakker, Sr, ‘Introduction’ in E.M. van Zinderen Bakker Sr., J.M. Winterbottom and R.A. Dyer (eds.), *Marion and Prince Edward Islands: Report on the South African Biological and Geological Expedition 1965-1966*, at page 6.

²⁷⁴ H.W. Tilman, ‘Voyage to the Îles Crozet and Îles Kerguelen’, *The Geographical Journal*, Vol. 127, No. 3 (Sep., 1961), pp. 310-316, at page 311.

²⁷⁵ *Cape of Good Hope and Port Natal Shipping and Mercantile Gazette*, No. 640, 4 April 1856.

²⁷⁶ *Cape of Good Hope Shipping List*, No.117, 29 March 1842.

where ‘thick weather prevailed’. But the weather cleared when they reached the Prince Edward Islands at which point Captain Hamilton:

“Steered between the islands, and brought up at the Cave at 20:30 p.m., in 17 fathoms water, with the wind from the N.E. At 6 p.m., the wind shifted to the N.W., blowing a heavy gale. On the 15th, at noon, the wind shifted to the S.W., and the ship drove off the bank. At midnight, the wind moderated, and the ship was then steered for North Island. At 9 a.m., May 16, the wind being light from the W.S.W., anchored in 13 fathoms water and commenced taking off the produce, stores etc. At midnight it was calm with swell from the southward. Sunday, May 17th, at 4 a.m., a breeze sprung up from the S.E., with showers of snow, the sea making. At 5, the best bower cable parted, let go the small bower which brought her up, as she was close to the rocks. At 5:20, she parted and went broadside onto the rocks, the sea making a clean breach over her”.²⁷⁷

The boats were then lowered, but the sea rolled so violently that the crews had no command over them, with one being driven onto the rocks and the other capsizing, forcing the crew to swim for their lives.²⁷⁸ Fortunately, none were lost. The wreck of the *Prince* in June 1866, occurred in similar circumstances. The *Prince* was at anchor on the 21st June when a severe N.E. gale came up and at 10 a.m. the next morning, the vessel finally parted from her anchors and was driven ashore.²⁷⁹

Just as the sudden appearance of gale force winds could lead to shipwreck, so could the sudden cessation of wind. When the *Princess of Wales* was anchored off one of the Crozet Islands in 1821, a gale accompanied by a heavy swell came in and the Captain decided to stand out to sea. But before they had gone any great distance from the Island, the wind died away so the crew lost all command of the vessel and, since the swell

²⁷⁷ *Cape of Good Hope and Port Natal Shipping and Mercantile Gazette*, No. 734, 22 January 1858.

²⁷⁸ *The Cape Argus*, 16 January 1858.

²⁷⁹ *The Cape Argus*, 30 October 1866.

continued, aided by a strong current, the vessel was driven towards the numerous rocks protruding into the sea upon which it was eventually wrecked. According to Goodridge, the crew were “not a sacrifice to the violence of a present storm, but victims to the unspent power of a raging sea, lashed into fury by winds which now seemed hushed into breathless silence, the more calmly to witness the effects of the agitation raised by them in the bosom of this immense ocean”.²⁸⁰

Knowing when and where to anchor and when to beat out to sea were crucial. Sometimes this knowledge was gained only through bitter experience. Hickley (who was in charge of the sealing gang left on Possession Island by John McDonald) told Sir James Clark Ross that the western coast of Possession Island was unapproachable for ships of any size on account of the heavy swell that constantly rolled in upon its shores.²⁸¹ One of the boats belonging to McDonald’s party and all six members of its crew was lost there while searching for elephant seals.²⁸² According to Hickley and his men however, the eastern side of the Island had three bays, America Bay, Lively Bay, and Ship Bay (also known as Navire Bay),²⁸³ where vessels at anchor were well protected from the prevailing westerly winds.²⁸⁴ Hickley warned however that at Lively Bay and Ship Bay, as soon as an easterly wind sprang up vessels should leave as America Bay was the only bay where

²⁸⁰ Charles Medyett Goodridge, *Narrative of a Voyage to the South Seas and the Shipwreck of the Princess of Wales Cutter, with an Account of Two Years Residence on an Uninhabited Island*, at page 43.

²⁸¹ Sir James Clark Ross, *Voyage of Discovery and Research in the Southern and Antarctic Regions During the Years 1839-43, Vol 1*, at page 49.

²⁸² *Cape of Good Hope Shipping List*, No. 7, 18 Feb 1840.

²⁸³ W.H. Rosser, and J.F. Imray, F.R.G.S., *The Seaman’s Guide to the Navigation of the Indian Ocean and China Sea*, at page 494.

²⁸⁴ Sir James Clark Ross, *Voyage of Discovery and Research in the Southern and Antarctic Regions During the Years 1839-43, Vol 1*, at page 55.

there was room for a ship to beat out when such a wind arose.²⁸⁵ Hickley claimed that two English whalers were wrecked in Ship Bay by trying to ride out easterly gales there.²⁸⁶ These dangerous S.E. winds were reported as rarely blowing between November and the end of February.²⁸⁷ This was the kind of local knowledge acquired only through experience.

Once a vessel was safely anchored near one of the islands of the Crozets, the sealers still had to make their way onto the islands themselves. This was done by using rowing boats between the vessel and the shore. The terrain at most of the potential landing places was extremely rugged and landing through the surf was dangerous and sometimes led to loss of life.²⁸⁸ The travails of the men sent sea elephanting to the Crozets did not end once they had safely landed on the islands, as they still had to find ways to survive the rough conditions and lack of stores that often awaited them once ashore.

Knowledge of where to live and work on the islands and how to live off the land in order to conserve and supplement scarce provisions was also important for both sealer and merchant. Subsisting off the islands could drastically reduce the cost of provisions, and thus the total cost of the voyage, and also ensure that the gangs remained mentally and physically fit for work under harsh and lonely conditions (see Chapter 4).

²⁸⁵ Sir James Clark Ross, *Voyage of Discovery and Research in the Southern and Antarctic Regions During the Years 1839-43, Vol 1*, at page 55.

²⁸⁶ *Ibid.*

²⁸⁷ W.H. Rosser, and J.F. Imray, F.R.G.S., *The Seaman's Guide to the Navigation of the Indian Ocean and China Sea*, at page 495.

²⁸⁸ Nigel Bonner, *Seals and Sea Lions of the World*, at page 188.

Finding and landing on the Crozets did not guarantee a cargo of elephant seal oil as competition for the elephant seals was intense, and hence control of the breeding beaches was crucial. At a time when few sealing vessels had a crew of more than twenty hands, Jearey relied on permanent occupation and numbers ashore to assert his control of key sites on the Crozets commons. Washington Fosdick's journal of his Southern Ocean sealing voyage aboard the Connecticut schooner *Emeline* in 1843 records that Hog Island was inhabited "by a party of forty Englishmen from the Cape".²⁸⁹ One startled New England master, Ellery Nash of the Stonington bark *Bolton*, intent on joining them on Long Beach (Hog Island) was bluntly informed by Jearey's men that half of the beach belonged to them and the other half to John Barnum, the master of the Stonington schooner *United States*. A member of Jearey's gang stated that "they would defend it and no one would take blubber off the beach but them as long as they could hold a lance".²⁹⁰ The response Nash received from Captain Barnum was no less belligerent. Barnum told Nash that if he put any men on Long Beach he would work against him "in every shape".²⁹¹

When Nash proceeded to land his men regardless, as there were no prospects for 'sea elephants' other than on Long Beach, Barnum's gang took their blubber while the Cape men took both their blubber and 28 unskinned elephant seals off them.²⁹² In addition they drove the rest of the elephant seals into the surf rather than letting Nash's men hunt them

²⁸⁹ Arthur C. Watson, 'A Voyage on the Sealer *Emeline* and the journal from Washington Fosdick's manuscript preserved in the museum of the old Dartmouth Historical Society at New Bedford', *New York Zoological Society*, Vol. 9 (1931), pp. 475-549, at page 483.

²⁹⁰ Rhys Richards, 'The Commercial Exploitation of Sea Mammals at Iles Crozet and Prince Edward Islands before 1850', *Polar Monographs 1* 1992, at page 17.

²⁹¹ *Ibid.*

²⁹² *Ibid.*

and told Nash that his “voyage was up”.²⁹³ This finally persuaded Nash to relocate to Penguin Beach where elephant seals were scarce and he only managed to secure 43 barrels of blubber on Hog Island.²⁹⁴ At the start of 1844 Nash left Hog Island, “[t]he opposition being so strong and the elephants so scarce”, and moved to East Island where he remained for close to two months and took about 66 tons of elephant seal oil.²⁹⁵

When the *White Oak* under Captain Nory joined the *Emeline* at Possession Island later in the season, Nash and the shore party of the *Emeline* marched to American Bay, spear in hand, to take possession of the beach.²⁹⁶ However, Nory’s men had killed all the elephant seals in Little American Bay and 50 in Shallop Bay in order to secure them, but left them unskinned, conduct that Fosdick denounced as “unmanly and outrageous.”²⁹⁷

The relations between sealing gangs were fluid and alliances would change over time as can be seen by the collaboration between Jearey and Barnum. This collaboration, so successful in repelling the *Emeline* from Hog Island, was not without its tensions as Jearey sued the American in the Cape courts in 1850 over a disputed cargo of oil. The evidence put forward in this case included a letter from Barnum addressed to ‘the Headman of ‘S.W. Bay’ (East Island)’ stating that Barnum intended to get oil in S.W.

²⁹³ Briton Cooper Busch, *The War Against the Seals: A History of the North American Seal Fishery*, at page 169-170.

²⁹⁴ Rhys Richards, ‘The Commercial Exploitation of Sea Mammals at Iles Crozet and Prince Edward Islands before 1850’, *Polar Monographs 1 1992*, at page 17.

²⁹⁵ Rhys Richards, ‘The Commercial Exploitation of Sea Mammals at Iles Crozet and Prince Edward Islands before 1850’, *Polar Monographs 1 1992*, at page 17 and *Cape of Good Hope and Port Natal Shipping and Mercantile Gazette*, No. 10, 9 Mar 1844.

²⁹⁶ Arthur C. Watson, ‘A Voyage on the Sealer *Emeline* and the journal from Washington Fosdick’s manuscript preserved in the museum of the old Dartmouth Historical Society at New Bedford’, *New York Zoological Society*, Vol. 9 (1931), pp. 475-549, at page 517.

²⁹⁷ *Ibid.*, at page 521.

Bay without being troubled by the Cape party.²⁹⁸ Barnum went on to state that ‘I do not wish to make any threats about what I am going to do [if hampered in his attempts to kill elephant seals]’.²⁹⁹ It would seem that Barnum also poached some of Jearey’s men as he stated that “...you may depend as I tell you I shall, I shall ship some more of your men if I can but that will not hurt your party for you have nothing to eat for what is left of your party now”.³⁰⁰

Nash’s strategy of moving to East Island suggests that Jearey did not have men on all the islands simultaneously. Rather, it would seem that he focussed his efforts on a couple of islands at a time, moving on when elephant seal numbers began to dwindle. When Clark Ross arrived at Possession Island in 1840, the leader of Jearey’s gang reported that the weather had been so tempestuous that they had been unable to launch a boat for the five weeks prior to his arrival with the result that production of oil had been poor. The men were disappointed to find that they were not to be removed to ‘Pig Island’ for the winter, where they felt that elephant seal numbers would be more numerous.³⁰¹ When the *Cape Argus* reported the loss of the *Maria* at Prince Edward Island on 17 May, 1858, it stated that “[a] gang of eleven men had been employed on the islands for two years engaged in capturing sea elephants and seals. After taking their produce on board, the *Maria* was to have removed the gang to the Crozetts, and then returned to Table Bay”.³⁰² When the *Richard Dart* was shipwrecked on Prince Edward Island on 19 June, 1849, it took the

²⁹⁸ *Cape Archives*. CSC Volume No. 2/1/1/64 Reference 19. Record of Proceedings of Illiquid Case. John Jearey Versus John Barnum. Debt. 1850.

²⁹⁹ *Ibid.*

³⁰⁰ *Ibid.*

³⁰¹ Sir James Clark Ross, *Voyage of Discovery and Research in the Southern and Antarctic Regions During the Years 1839-43, Vol 1*, at page 53.

³⁰² *The Cape Argus*, January 16, 1858.

survivors 44 days before they came across two members of Jearey's sealing gang (which consisted of 12 men), suggesting that sealing gangs split up on the Prince Edward Islands.³⁰³ This was perhaps due to the scattered nature of elephant seal herds or the limitations of local subsistence on those islands. Being on the beaches before any competitors could be crucial to the success of an elephanting enterprise and without this advantage, they would have to "share the cream".³⁰⁴

3.4) The effect of elephant seal oil prices in Cape Town and London on the Cape Town/Crozets elephant seal oil trade

Needless to say the price of elephant seal oil was also a key factor in Jearey's decision to embark on a elephant seal fishery at the Crozets. In 1837 the price of whale oil in London peaked at £40 per ton (elephant seal oil was a close substitute for whale oil, and consequently the price of elephant seal oil was almost identical).³⁰⁵ Unfortunately, we only have the price of 'Sea Elephant Oil' in Cape Town for the years 1844–1861, but the number and tonnage of Jearey's voyages to the Crozets closely correlated to the prevailing market price of elephant seal oil in Cape Town and when that price collapsed in 1852, it was mirrored by a corresponding sudden sharp downturn in Jearey voyages to the Crozets (see Figures 3.3 and 3.4).

³⁰³ *Cape of Good Hope and Port Natal Shipping and Mercantile Gazette*, No. 307, 16 November 1849.

³⁰⁴ Arthur C. Watson, 'A Voyage on the Sealer *Emeline* and the journal from Washington Fosdick's manuscript preserved in the museum of the old Dartmouth Historical Society at New Bedford', *New York Zoological Society*, Vol. 9 (1931), pp. 475-549, at page 504.

³⁰⁵ Bjørn L. Basberg and Robert K. Headland, 'The 19th Century Antarctic Sealing Industry: Sources, Data and Economic Significance', (September, 2008). *NHH Dept. of Economics Discussion Paper No. 21/2008*.

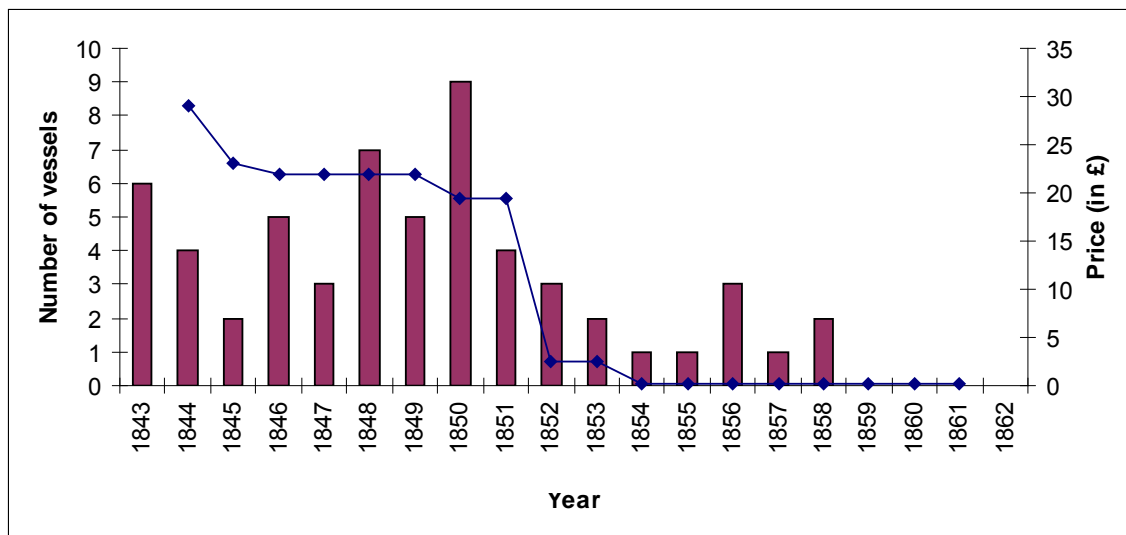


Figure 3.3: The number of vessels returning to Cape Town from the Crozets and the price of elephant seal oil in Cape Town, 1843–1861.

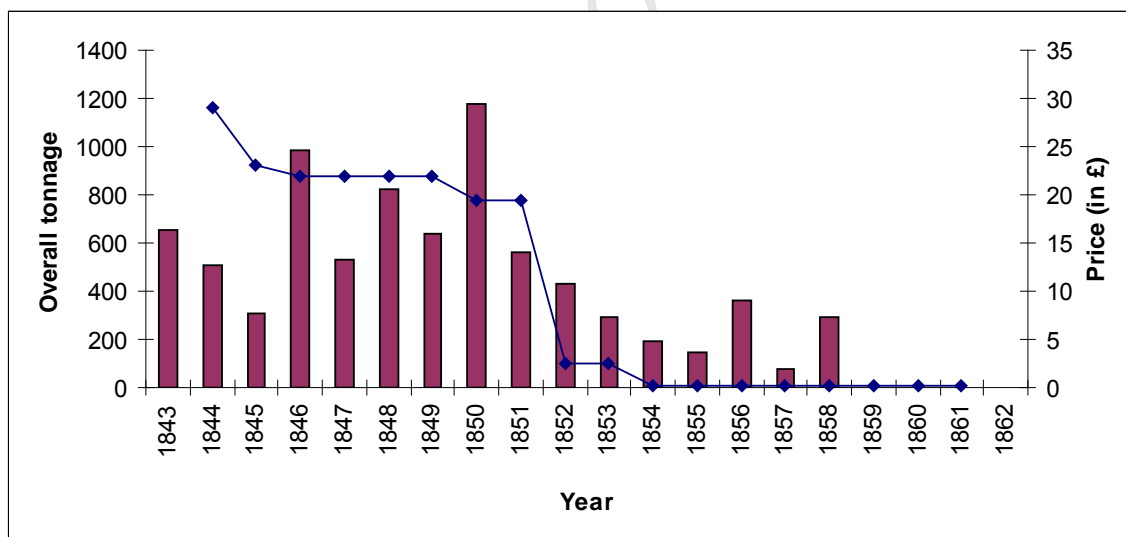


Figure 3.4: The overall tonnage of Cape based vessels returning to Cape Town from the Crozets and the price of elephant seal oil in Cape Town, 1843–1861.

What the oil returned to the Cape was used for is unclear, but the fact that there was little industry to speak of in Cape Town and Jearey had a contract to sell some of the elephant seal oil collected to the Civil Engineering Department prior to 1845 suggests that the oil was used to light the streets of Cape Town.³⁰⁶ The first serious attempt to light the Heerengracht and Keizersgracht by means of oil lamps was made in 1809, and oil was the main illuminant until the use of gas lighting was first mooted in the mid-1840s.³⁰⁷ In August 1844, the Cape of Good Hope Gas Light Company called for tenders to supply a gasometer and cast iron pipes, the mains were laid down two years later and on the evening of 5 March 1847, Cape Town streets were illuminated by gas for the first time.³⁰⁸ The coming of gas, which was cheaper and produced a brighter light, no doubt meant the end of Jearey's contract to provision the state with elephant seal oil and this could explain why he began to advertise it for sale by the gallon for domestic consumption between the years 1844–1848.³⁰⁹ This oil was most likely sold to burghers who were reluctant to introduce gas lighting into their homes, fearing explosions.³¹⁰ Jearey also made an audacious attempt to slash his production costs in the face of competition from gas. In 1848 he chartered the vessel *St. Helena* to bring a cargo of as many live elephant seal pups as it could conveniently carry from the Crozets for the purpose of establishing a elephant seal colony on the African mainland.³¹¹ Despite these efforts, his local market

³⁰⁶ *Cape Archives*. CO Volume No. 4025 Reference 307. Memorials Received. J. Jearey Regarding Irregular Payment of Account by Civil Engineering Department. 1845.

³⁰⁷ Hymen W.J. Picard, *Gentleman's Walk: The Romantic Story of Cape Town's Oldest Streets, Lanes and Squares*, at page 176.

³⁰⁸ Alan F. Hattersley, *An Illustrated Social History of South Africa*, at page 75.

³⁰⁹ See the *Cape of Good Hope and Port Natal Shipping and Mercantile Gazette*; No. 11, 15 March 1844, No. 93, 10 October 1845, No. 94, 17 October 1845, No. 109, 30 January 1846, No. 157, 1 January 1847, No. 158, 8 January 1847, No. 173, 23 April 1847 and No. 250, 13 October 1848.

³¹⁰ Alan F. Hattersley, *An Illustrated Social History of South Africa*, at page 75.

³¹¹ *Cape of Good Hope and Port Natal Shipping and Mercantile Gazette*, No. 257, 1 December 1848. This was not the only time that an attempt was made to bring live sea elephants to the Cape. On 11 December

for elephant seal oil was slowly eroded by gas consumption, which doubled in Cape Town between 1848 and 1852.³¹² In 1852, the Cape of Good Hope Gas Light Company signed a contract with the Cape Town municipal council to supply it with 625,000 hours of gas illumination per annum,³¹³ and the 1853 Blue Books stated that the Gas company supplied about 250 street lamps and “nearly all public and mercantile buildings, and a considerable number of private residences”, terminating the local demand for sea elephant oil.³¹⁴

Fortunately for Jearey, in 1844 he concluded an agreement with Cape Town wholesale merchants Thomson, Watson and Company who advanced him a line of credit in return for his Crozet oil output being shipped to their agency in England.³¹⁵ So by the time gas consumption rose, and the price of elephant seal oil in Cape Town collapsed in the early 1850s, Jearey had managed to diversify onto the London market and this allowed him to continue sealing on the Crozets until 1857. The price of Common Oil in London began to rise just as the consumption of gas began to increase in Cape Town (Fig. 3.5). This allowed Jearey to divert a growing percentage of the elephant seal oil taken from the Crozets to London, as shown in Fig. 3.6. There is no evidence to suggest that Jearey exported elephant seal oil prior to 1843, and the quantities exported after 1844 have been compiled from an incomplete list of shipping manifests for vessels departing Table Bay

1851, 2 ‘sea lions’ were returned, while 1 sea elephant was brought back on 24 March 1852. The small numbers returned however make it unlikely that these were further attempts to create a elephant seal colony on the shores of the Cape

³¹² *Cape of Good Hope and Port Natal Shipping and Mercantile Gazette*, No. 423, 6 February 1852.

³¹³ *Ibid.*, No. 455, 17 September 1852.

³¹⁴ *Blue Books for the Cape of Good Hope, 1853*, at page 451.

³¹⁵ *Cape Archives*. CSC Volume No. 2/1/1/96 Reference 27. Record of Proceedings of Illiquid Case. John Jearey Versus John Robert Thomson, Harrison Watson, James Duncan Thomson and Thomas Watson, Trading as Co-Partners in Firm of Thomson, Watson and Company. Cancellation of Deed. 1860.

between the years 1844–1857 published in the *Cape of Good Hope and Port Natal Shipping and Mercantile Gazette* and the numbers given should therefore be seen as the minimum amount of oil exported. Unfortunately, there is no way of telling whether all the elephant seal oil exported was Jearey's, as in most cases the name of the exporter is not given. However, since Jearey was the only person producing elephant seal oil in the colony during this period, it is safe to assume that most, if not all, of the oil exported was his.

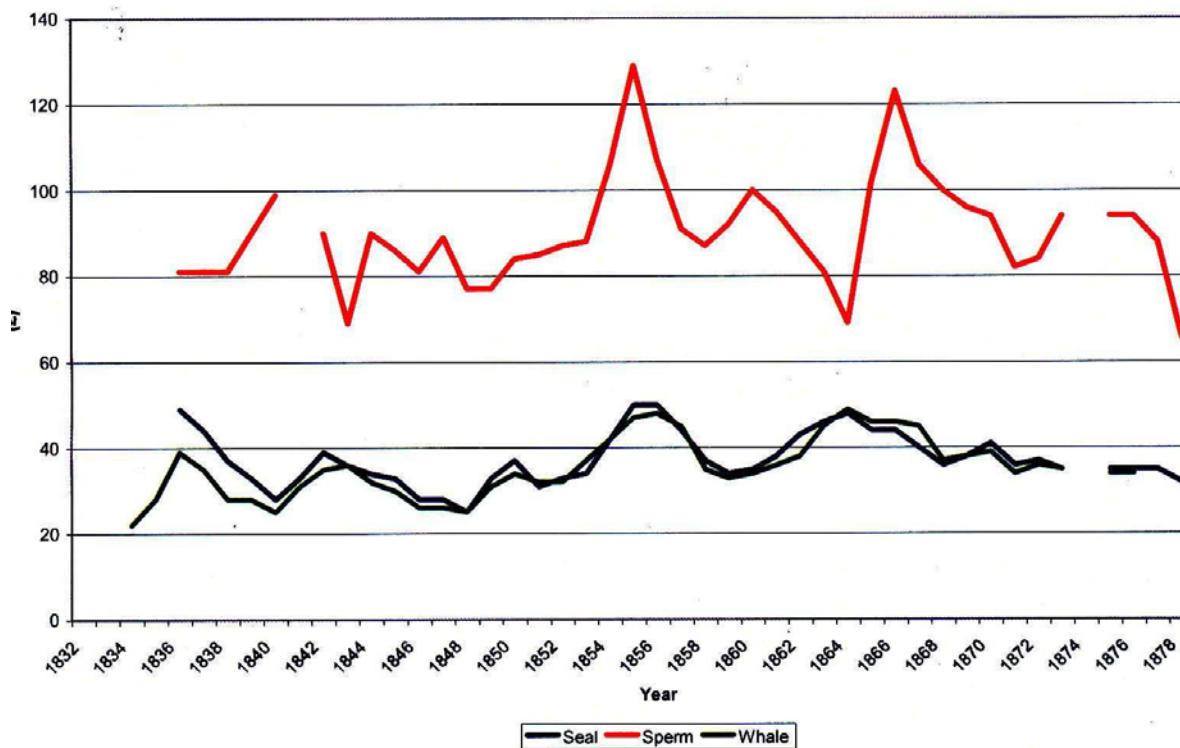


Figure 3.5: Prices for seal oil, sperm oil and whale oil, London, 1832–1880.³¹⁶

³¹⁶ Bjørn L. Basberg and Robert K. Headland, 'The 19th Century Antarctic Sealing Industry: Sources, Data and Economic Significance', (September, 2008). *NHH Dept. of Economics Discussion Paper No. 21/2008*.

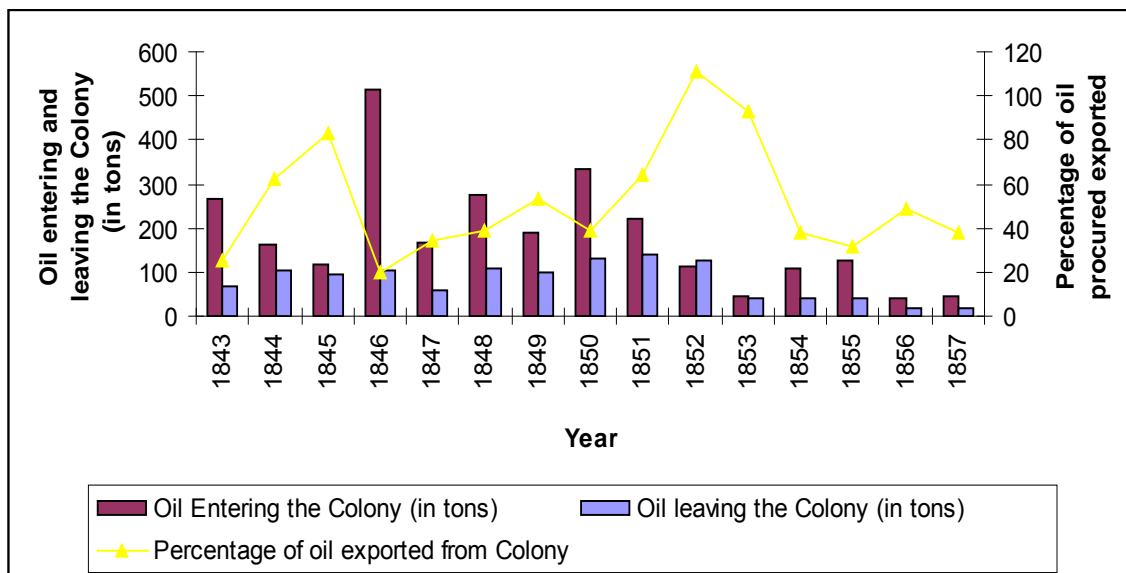


Figure 3.6: Amount of elephant seal oil entering and leaving Cape Town.

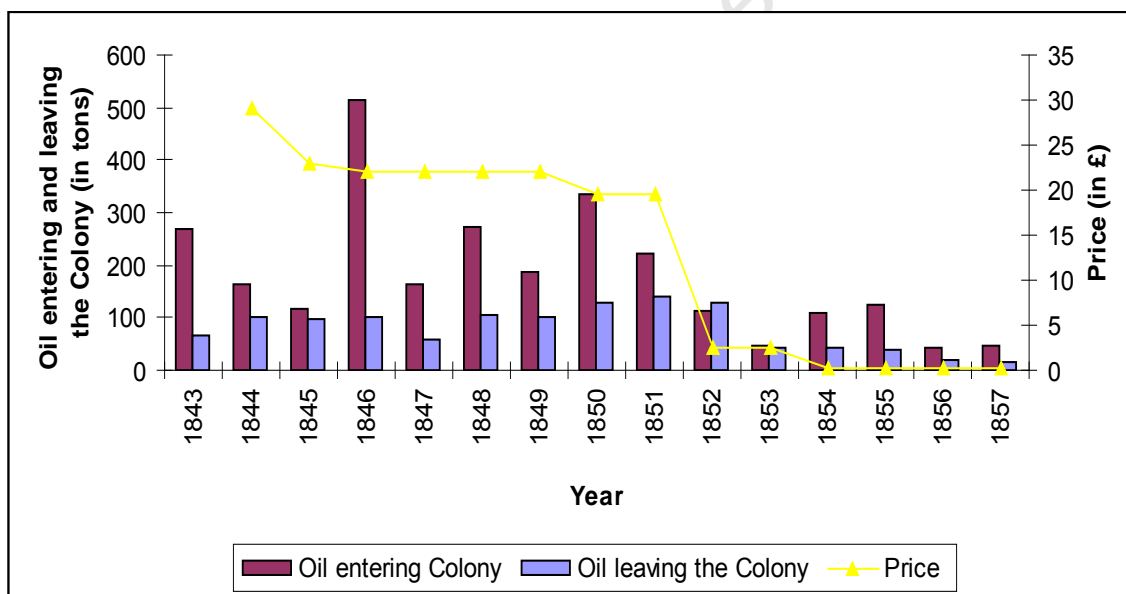


Figure 3.7: Amount of elephant seal oil entering and exiting the Cape plotted against the price of elephant seal oil in Cape Town.

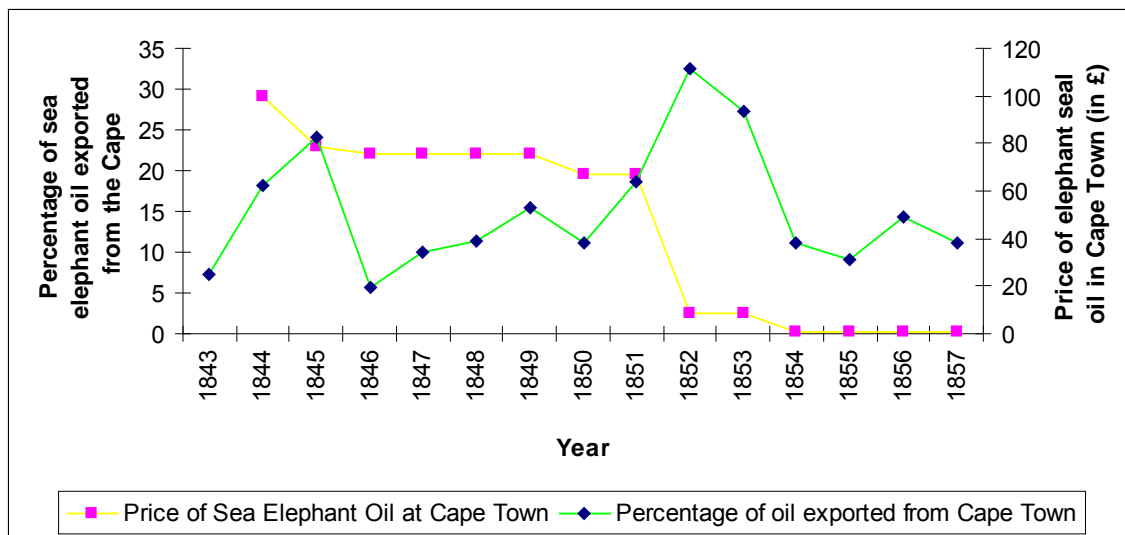


Figure 3.8: Percentage of the total elephant seal oil catch exported from the Cape plotted against the price of sea elephant oil in Cape Town.

The Cape Town Crozet sea elephanting trade ended abruptly in 1858, with the sealers based on the islands being removed,³¹⁷ and no voyages were made again until 1865. The most obvious reason for the sudden termination appears to be a sharp drop in the price of whale oil in London (between 1857 and 1858, the price dropped by a third from £48 per ton to £33). Since 1852, when the Cape Town elephant seal oil price collapsed, Jearey's oil production on the Crozets decreased substantially, as presumably, did his profits.

Another clue as to the cause of his downfall can be found in a court case between Jearey and Thomson, Watson and Co. in 1860. Jearey stated that in consequence of "misfortunes by the loss of his (Jearey's) vessels and otherwise", he had to mortgage his property to the value of £6000.³¹⁸ The harsh weather conditions at the Crozets made shipwreck a

³¹⁷ *Blue Books for the Cape of Good Hope*, 1858, at page FF3.

³¹⁸ *Cape Archives*. CSC Volume No. 2/1/1/96 Reference 27. Record of Proceedings of Illiquid Case. John Jearey Versus John Robert Thomson, Harrison Watson, James Duncan Thomson and Thomas Watson, Trading as Co-Partners in Firm of Thomson, Watson and Company. Cancellation of Deed. 1860.

unavoidable production hazard that Jearey had the misfortune to fall foul of on more than one occasion. In 1845, the *Regent Packet* was wrecked on Possession Island, and there is evidence to suggest that the *Susan* was wrecked at Prince Edward Island in 1850.³¹⁹ The long gap between these two shipwrecks most likely meant that their losses could be absorbed by Jearey but when the *Conservative* was wrecked at the end of 1855, Jearey replaced her by purchasing the bark *Maria* for £1100 which was wrecked on Prince Edward Island in May 1857 on her first voyage to the Crozets with a master making his first island run in charge of a vessel.³²⁰

The double blow of two wrecks in quick succession would have depleted Jearey's reserves, their loss compounded by an economic depression in the colony caused by the bursting of the copper bubble.³²¹ His sudden shortage of transport also forced Jearey to charter vessels from other Cape Town merchants to service his sealing gangs and so unwittingly provided competitors with the necessary intelligence to embark on sea elephanting voyages to the Crozets on their own account. Thus, following the loss of the *Conservative* in 1857, Jearey chartered the *Fox* belonging to De Pass, Spence and Company to retrieve oil left on the islands by the shipwrecked crew.³²² Shortly afterwards De Pass, Spence and Company sent the *Charlotte* to procure oil at the Crozets, followed by the *Eblana* in 1857.³²³ The loss of vessels also hampered Jearey's participation in the colonial coasting trade in between Crozets voyages. Even prior to the shipwrecks in the mid-1850s, profits from the coasting trade would have been greatly

³¹⁹ *Cape of Good Hope and Port Natal Shipping and Mercantile Gazette*, No. 92, 3 October 1845.

³²⁰ *Ibid.*, No. 640, 4 April 1856 and No. 733, 15 January 1858.

³²¹ C.G.W. Schumann, *Structural Changes and Business Cycles in South Africa, 1806-1936*, at page 78.

³²² *Cape of Good Hope and Port Natal Shipping and Mercantile Gazette*, No. 671, 14 November 1856.

³²³ *Ibid.*, No. 683, 6 February 1857 and No. 713, 4 September 1857.

reduced by the introduction of the Navigation Act in 1850, which opened the trade to foreign vessels in a bid to reduce seaborne freight costs for merchants and farmers.

Jearey's third income stream, the Ship Tavern on the corner of Bree and Waterkant street, was also stymied by the Mercantile Marine Act in 1855, which established a 'Sailors Home' in Bree Street with the specific aim of "destroy[ing] the vocation of lodging-house keepers, crimps, slop-sellers, publicans, and agents of every description, who hitherto have found an easy prey in the unprotected and susceptible seaman".³²⁴

Taverns were often poorly looked upon by the upper classes at the Cape despite the fact that they provided an important source of income in Cape Town at every level of society.³²⁵ In an 1854 case brought before Major Wolfe regarding the Ship Tavern (which was being run by John Jearey's son Robert), Wolfe claimed that of the 137 licensed canteens, "two thirds of them were sinks of abomination and iniquity, that ought never to have been licensed [and that he] would certainly object to the defendant's licence being renewed".³²⁶ Wolfe's negative view of canteen keepers was not unique, another Resident Magistrate some years before stated that licences should only be granted to respectable parties, "at least as far as they can be considered as such, who choose to resort to that mode of livelihood".³²⁷ Canteens also came in for scathing criticism from the middle

³²⁴ *Cape of Good Hope and Port Natal Shipping and Mercantile Gazette*, No. 399, 22 August 1851.

³²⁵ Nigel Worden, Elizabeth van Heyningen and Vivian Bickford Smith, *Cape Town, the Making of a City: An Illustrated Social History*, at page 146-147.

³²⁶ *Cape of Good Hope and Port Natal Shipping and Mercantile Gazette*, No. 563, 13 October 1854.

³²⁷ Katherine D. Elks, *Crime, Community and Police in Cape Town 1825-1850*, Master of Arts thesis, University of Cape Town, 1986, at page 153.

classes who regarded them as “mere receptacles of vice, and dens of thieves” and “pigsties which ought not to be allowed to exist”.³²⁸

Despite their reputation as ‘sinks of iniquity’, taverns played an important role in the life of the seaman. When they reached port, sailors often had nowhere to go and no one to see and taverns provided them with lodgings and company ashore. Seltzer claims that taverns acted in the same way as halfway house programs for newly released convicts and former mental patients, that is, the tavern was not a total institution in the way that vessels at sea were nor did they contain all the elements of wider society, though some of the elements of that society may make their presence felt in the tavern.³²⁹ In the taverns, amongst his fellow seamen even the unemployed or unpaid seaman could drink his frustrations away in a place where he was often allowed credit.³³⁰ In Cape Town, where there were few alternative venues for daily recreation, liquor and recreation were inseparable.³³¹

But the taverns were not merely places for drink and other less socially acceptable forms of recreation. Since seamen would sign on for a specific voyage or for a specific length of time and had no guarantee of another job when the voyage was over, the canteens also functioned as an informal labour exchange where seamen sourced information about

³²⁸ Nigel Worden, Elizabeth van Heyningen and Vivian Bickford Smith, *Cape Town, the Making of a City: An Illustrated Social History*, at page 147.

³²⁹ Michael Seltzer, ‘Haven an a Heartless Sea: The Sailors’ Tavern in History and Anthropology’, *The Social History of Alcohol and Drugs: An Interdisciplinary Journal* 19 (2004), pp. 63-93 at page 86.

³³⁰ Jesse Lemisch, *Jack Tar vs. John Bull: The Role of New York’s seamen in precipitating the revolution*, at page 57.

³³¹ Katherine D. Elks, *Crime, Community and Police in Cape Town 1825-1850*, Master of Arts thesis, University of Cape Town, 1986, at page 135 and 39.

available jobs.³³² The close link between taverns and employment has led to them being described as ‘embryo labour exchanges’.³³³ Taverns were also often used as a meeting place where payment for work done was received. Since the sailor was unemployed when on land, they were often forced to borrow money between voyages and would be forced to go to sea to pay these debts off, thus becoming what Chapman describes as “economic hostages to a life at sea”.³³⁴

By owning a tavern Jearey had easy access to the supplies of labour his sea elephanting and coastal trade interests required, all the while receiving money from these men while they were ashore. Jearey’s tavern may very well have provided him with a ready source of crimped labour for the Crozets. Crimping referred to the often highly organised practice where hotel, hostel and brothel owners helped seamen desert, provided accommodation and entertainment, and then re-engaged the indebted seaman to another ship for a commission.³³⁵ Since the seaman had become so indebted to the boardinghouse keeper, he would have no choice but to accept the employment that the crimp arranged.³³⁶ Some sailors were men who had been accosted by shipping agents who would often give them money and the promise of a short voyage, which was accepted

³³² Jesse Lemisch, *Jack Tar vs. John Bull: The Role of New York’s seamen in precipitating the revolution*, at page 57.

³³³ Shirley Judges, *Poverty, Living Conditions and Social Relation – Aspects of Life in Cape Town in the 1830s*, Masters Thesis, University of Cape Town, 1977, at page 104-105.

³³⁴ Paul K. Chapman, *Trouble on Board: The Plight of International Seafarers*, at page 125.

³³⁵ Michael Quinlan, ‘Regulating Labour in a Colonial Context: Maritime Labour Legislation in the Australian Colonies, 1788-1850’, in *Australian Historical Studies*, 111, 1998, pp. 303-324 at page 311.

³³⁶ Paul K. Chapman, *Trouble on Board: The Plight of International Seafarers*, at page 20.

while under the influence of alcohol and they were kept in a state of intoxication until they found themselves at sea.³³⁷

The Sailors Home on the other hand offered “a fair charge, with cleanliness, sobriety, and good order [where the] habits of the seamen will not be polluted by the impure contact to which he was formerly exposed, in sinks of iniquity where his class habitually resorted”.³³⁸ The *London Nautical Magazine* described the general object of the Home as providing ‘Jack’ a “safeguard against the many evils and corrupting influences to which his kind heart, inexperienced and joyous nature, expose him when temporarily on shore”.³³⁹ It then goes on to describe one of its objects as being “to protect them [sailors] from imposition and extortion, and encourage them to husband their hard earned wages; to promote their moral, intellectual, and professional improvement; and to afford them the opportunity of receiving religious instruction”.³⁴⁰

However, the Home also attempted to control and reshape seamen in the image of the ruling classes at the Cape. This is clearly seen in a statement made by the Secretary of the Sailors’ Home Society, Captain Samson, stating that, according to him, the Sailors’ Home was not created to “afford a comfortable dwelling to seamen”, but to “to improve their temporal and spiritual condition, and raise them in the scale of civilization”.³⁴¹ An extract from the *Nautical Standard* also stated that “[d]runkness, extortion, and

³³⁷ Nathaniel W. Taylor, M.D., *Life on a Whaler or Antarctic Adventures in the Isle of Desolation*, Howard Palmer (ed.), at page 16.

³³⁸ *Cape of Good Hope and Port Natal Shipping and Mercantile Gazette*, No. 399, 22 August 1851.

³³⁹ *Ibid.*, No. 159, 15 January 1847.

³⁴⁰ *Ibid.*, No. 159, 15 January 1847.

³⁴¹ *Ibid.*, No. 874, 5 October 1860.

debauchery being rooted out by the Sailors' Homes and by the provisions enacted for the protection of seamen in the Merchant Seaman's Act, we may anticipate a rapid and important reform in the general conduct of the class – a reform which, while it will strengthen the merchant, and add vigour to the effort in the execution of which he is now exposed to the competition of the civilized globe, will also supply to the seaman new means for the employment of life, and the cultivation of the higher sources of gratification".³⁴² They also did not hide the fact that the introduction of a Sailors' Home at the Cape would also help to provide "masters who may be in want of hands at this port" and act as a one stop shop for obtaining labour.³⁴³ All of this fell into a more widespread attempt to "shape the working class from above" by channelling them "into pursuits that did not in any way threaten the social order".³⁴⁴ According to Forsyth, these so-called 'friends societies' may have purported to protect the seamen from exploitation, but they also wished to protect society from these men.³⁴⁵ By the end of the 1850s almost half the seamen discharged in Cape Town boarded at the Sailors Home, to the detriment of tavern keepers like Jearey.³⁴⁶ The success of the Sailors Home would have cost Jearey in terms of money as well as labour, denying him the opportunity to crimp indebted seamen.

Jearey's final income stream, his boating interests, were also negatively affected by improvements made to the Table Bay harbour in the 1860s. These improvements enabled

³⁴² *Cape of Good Hope and Port Natal Shipping and Mercantile Gazette*, No. 399, 22 August 1851.

³⁴³ *Ibid.*, No. 591, 27 April 1855.

³⁴⁴ Katherine D. Elks, *Crime, Community and Police in Cape Town 1825-1850*, Master of Arts thesis, University of Cape Town, 1986, page 130.

³⁴⁵ Craig J. Forsyth, *The American Merchant Seaman and His Industry: Struggle and Stigma*, at page 51.

³⁴⁶ *Cape of Good Hope and Port Natal Shipping and Mercantile Gazette*, No. 852, 4 May 1860.

ocean-going vessels to load and unload at a wharf, instead of having to lie out in the roadstead and transfer cargo, passengers and crew by lighters and small boats.³⁴⁷

The sheer scale of the two thirds reduction in the quantity of elephant seal oil produced on the Crozets after 1852 suggests that more than an unfavourable economic climate was involved and that the Crozet sea elephanters may have overharvested their stock. At the very least, there were not enough elephant seals available to make sending multiple vessels to the Crozets a profitable venture. This may have occurred because the number of vessels sent to the Crozets in the years 1848–1850 were the highest recorded during the period in question (Fig. 3.10), and the number of men on the islands rose from between 40–50 men between the years 1842–1846 to 70 men between the years 1847–1852.³⁴⁸ Despite the increase in the number of vessels and men on the islands between 1847–1852 the amount of oil returned to the Cape fell drastically in 1851 compared to the previous year and 1852 saw the lowest quantity of oil returned for over a decade (Fig. 3.11). The overall length of sea elephanting voyages increased to well over 100 days by 1850, and remained well above the overall average of 79.7 days per voyage over the period 1832–1869 after this date (with the exception of 1856) as can be seen in Fig. 3.9 below. The rise in the average length of voyages was mirrored by a corresponding drop in the number of sea elephanting voyages departing the Cape from 1851 onwards (Fig. 3.10), as well as a decrease in the amount of sea elephant oil listed as being returned to the Cape (Fig. 3.11). The results for Fig. 3.10 are skewed by the fact that 27 voyages did

³⁴⁷ Charles Hamilton, 'Seamen and crime at the Cape, 1860-1880' in *International Journal of Maritime History*, Vol. 1, Part 2, 1989, pp. 1-35 at page 4.

³⁴⁸ *Blue Books for the Cape of Good Hope*, 1842 at page 339, 1845 at page 345, 1846 at page 395, 1847 at page 447, 1849 at page 463, 1859 at page 463, and 1852 at page 451.

not have a departure date listed, though 15 such voyages occurred prior to 1851 and 12 post 1851, eight of which occurred post 1864 and therefore do not nullify the conclusion that there was a drop in the number of vessels leaving Cape Town for the Crozets from 1851 onwards.

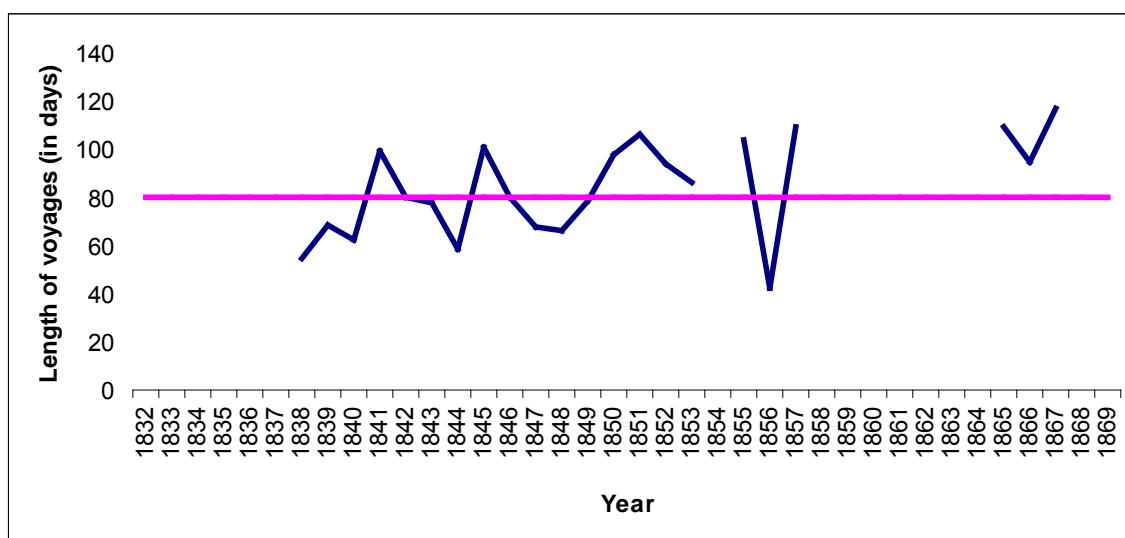


Figure 3.9: Length of sea elephanting voyages from the Cape for the Crozets.

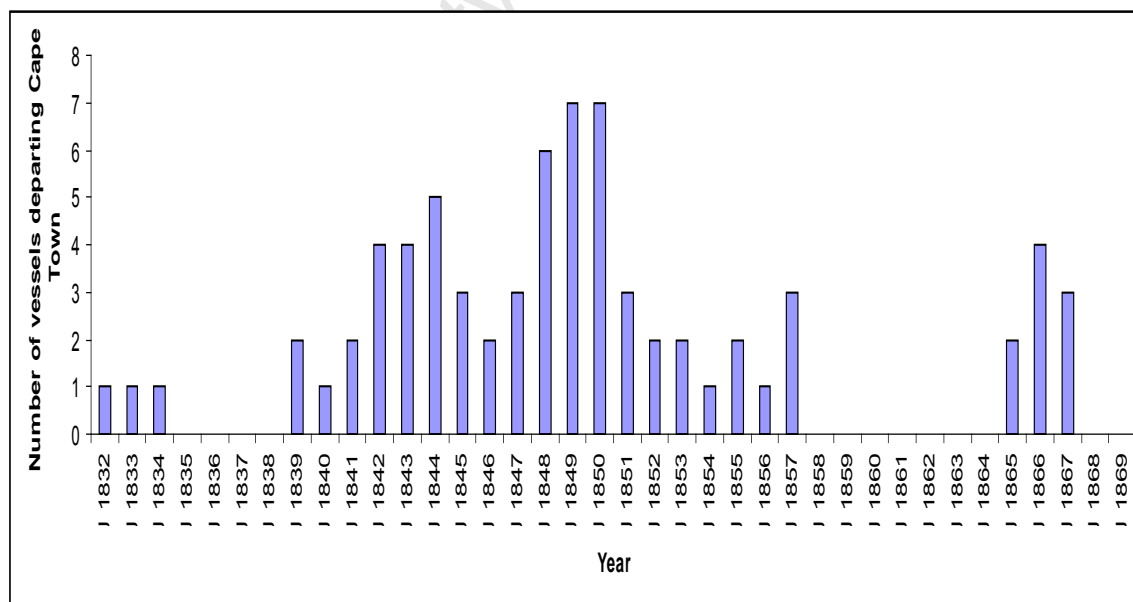


Figure 3.10: Number of sea elephanting voyages departing Cape Town for the Crozets each year.

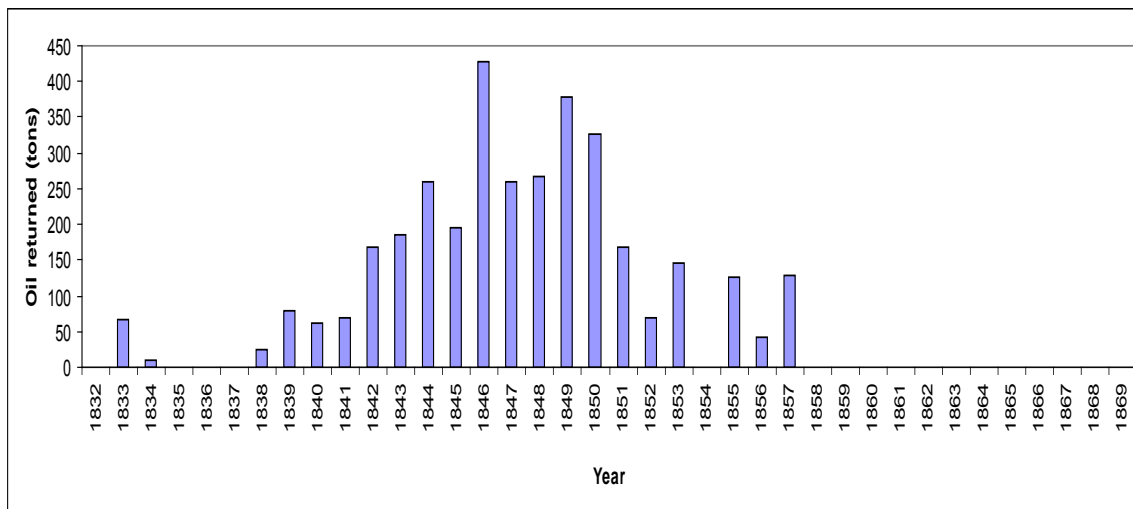


Figure 3.11: Amount of elephant seal oil listed as being brought back to Cape Town by voyages departing Table Bay in a particular year.

The crash in price would have led to fewer voyages being undertaken in order to minimise outfitting costs. As a result, the vessels that did make voyages would have had to stay at the islands for a longer period of time in order to maximise the amount of elephant seal oil produced per voyage. The change in the voyage patterns caused by the 1852 price crash can be seen in Fig. 3.12. There are two clear peaks with regards to the month that voyages departed the Cape over the period 1852–1869. The vessels departing in June would most likely try to arrive at the islands well before the breeding season haulout in order to occupy the beaches, prepare them for the process of rendering blubber into oil, as well as to drop off extra sealers on the islands who would return in the vessels arriving at the Crozets later in the year.

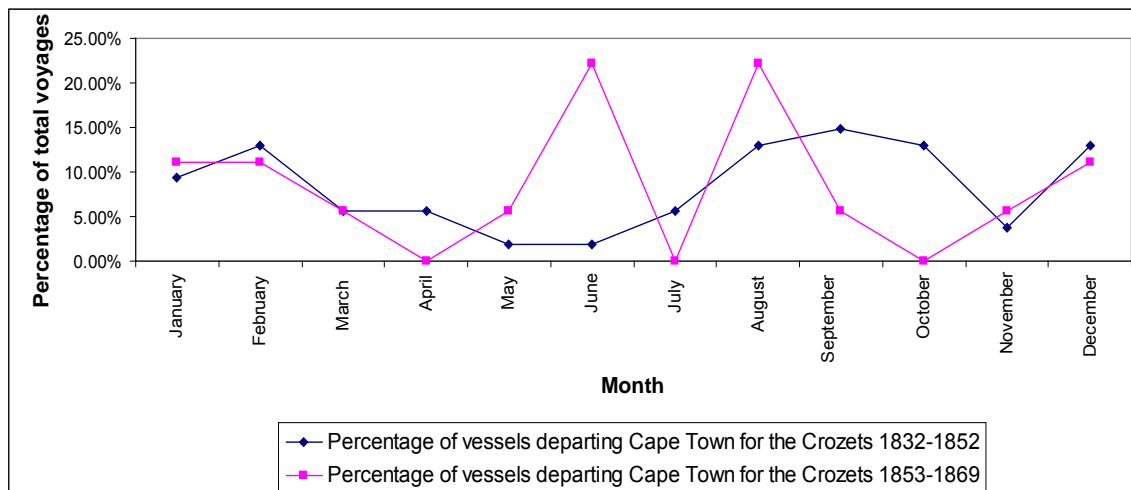


Figure 3.12: Percentage of total voyages departing Cape Town to the Crozets per month over the periods 1832–1851 and 1852–1869.

From the vessels that listed the cargo returned from the Crozets, an average of 259.2 tons of oil per annum was landed in Cape Town between 1842–1851 while from 1852–1858 annual landings averaged only 79 tons. Between 1842–1851, the average oil cargo per vessel was 61.7 tons, dropping in 1852–1858 to 46.5 tons per vessel. When Robert Granger started sending vessels into the Southern Ocean in 1859, he did not send any vessels to the Crozets, instead sending his ships 1480 km beyond the Crozet Islands to Desolation Island.³⁴⁹ This seems to corroborate Washington Fosdick's report of their being very few elephant seals left on Possession Island when he visited again in 1864.³⁵⁰ One of Fosdick's shipmates described the decrepit state of the infrastructure of the Crozet fishery at the time:

³⁴⁹ The 3 vessels sent by Granger to Desolation Island were the *Isabel* (*Cape of Good Hope and Port Natal Shipping and Mercantile Gazette*, No. 789, 18 February 1859), the *Atlas* (*Cape of Good Hope and Port Natal Shipping and Mercantile Gazette*, No. 789, 19 February 1859) and the *Annie* (*Cape of Good Hope and Port Natal Shipping and Mercantile Gazette*, No. 790, 25 February 1859).

³⁵⁰ Arthur C. Watson, 'A Voyage on the Sealer *Emeline* and the journal from Washington Fosdick's manuscript preserved in the museum of the old Dartmouth Historical Society at New Bedford', *New York Zoological Society*, Vol. 9 (1931), pp. 475-549, at page 484.

“Near the beach, we found the ruins of an old shanty that had some time sheltered the elephant hunters of years before. A rusty, broken try-pot was half buried in the sand, scraps of hoop iron, pieces of rotting oak staves, weather-beaten clubs that had once been used in the slaughter of the innocents, and an iron blubber fork were among the evidence of a former occupancy of the island”.³⁵¹

3.5) The last hurrah (1865–1869)

Despite Fosdick’s bleak assessment, the elephant seal oil trade between Cape Town and the Crozets reopened just over one year later. A sharp rise in the price of oil occurred in London following the American Civil War and in 1865, the price of oil reached its highest point in almost a decade (see Fig. 3.5).³⁵² This increase led to the resumption of sea elephanting by Cape Town merchants on the Crozets after a hiatus of eight years and suggests that elephant seal numbers had recovered quickly but did not exist on the islands in large enough numbers to justify the expenses and risks of sending vessels to the Crozets. To reopen the elephant seal oil trade, Poppe and Company enlisted one Jearey to captain their vessels going to the Crozets. This was presumably John Jearey’s son, Robert, because when Jearey senior died in 1869, Robert was reported to be “at present at Crozettes”.³⁵³ A second merchant house, Goodliffe and Company, also dispatched vessels to the Crozets in 1865. The first trips of both merchants returned empty (‘in

³⁵¹ Arthur C. Watson, ‘A Voyage on the Sealer *Emeline* and the journal from Washington Fosdick’s manuscript preserved in the museum of the old Dartmouth Historical Society at New Bedford’, *New York Zoological Society*, Vol. 9 (1931), pp. 475-549, at page 484.

³⁵² The tonnage of American vessels involved in the whaling industry dropped from 233,189 in 1846 to 68,536 in 1866. See Elmo Paul Hohman, ‘*The American Whaleman*’, at page 302.

³⁵³ *Cape Archives*. MOOC Volume No. 6-9-127 Reference 5196. Jearey, John. Death Notice. 1869.

ballast’), suggesting that their purpose was to re-establish sealing factories and gangs on the islands.³⁵⁴

As the *Cape of Good Hope and Port Natal Shipping and Mercantile Gazette* went out of print in 1861, and the shipping registers of the Commercial Exchange give no record of the quantity of elephant seal oil returned to the Cape during the period 1865–1869, the only source for the quantity of oil returned are the *Blue Books for the Colony of the Cape of Good Hope*. Unfortunately these records are rather confusing. Given that no fewer than 18 voyages were made to the Crozets during this five year period we must assume that elephant seals were readily available. This is confirmed by the *Blue Books* which, although listing only 150 gallons of elephant seal oil entering the Colony (at Port Natal) in 1865, record 184 tons of elephant seal oil being imported from the Crozets in 1866 and 261 tons in 1867 (of which only 10 tons are listed as being for home consumption). During these years, the *Blue Books* also listed large amounts of fish oil being returned into the Colony and in 1868 and 1869, only records for fish oil imported into the Colony from the Crozets are listed. It is unclear whether elephant seal oil was considered as falling under the heading of ‘fish oil’ during these years, though this may very well have been the case as according to Dr. Karl-Hermann Kock in his analysis on the Antarctic fisheries, “the only information on effective fishing from the Indian Ocean sector appears to be the description of the use and preservation of fish by drying from a group of sealers living on the Crozet Islands [from Ross in 1847]”.³⁵⁵ Despite the confusion regarding these figures, what is clear is that the large majority of both the elephant seal oil and fish

³⁵⁴ *Commercial Exchange Shipping List*, CC 3/7/2/1.

³⁵⁵ Karl-Hermann Kock, *Antarctic Fish and Fisheries*, at page 173.

oil returned from the Crozets was exported, which suggests that other than for lighting, there was no major demand for elephant seal oil in the Cape Colony during the nineteenth century. This oil was most likely exported to Britain, so when the return of American sealers to the Southern Ocean after the conclusion of the civil war led to a drop in the price of whale oil in London, the elephant seal oil trade no longer remained a profitable enterprise. Since scientists from the *HMS Challenger* and *Monongahela* found the elephant seals on Marion Island and the Crozet Islands to be numerous when they landed there in 1873,³⁵⁶ we can conclude that it was the drop in the price of oil in London rather than a lack of elephant seals that led to the termination of the Cape Town/Crozets sea elephanting trade when the *Esther* returned with 28 fishermen in December, 1869.³⁵⁷

³⁵⁶ J.H. Kidder, 'The Natural History of Kerguelen Island', *The American Naturalist*, Vol. 10, No. 8 (aug., 1876), pp. 481-484, at page 484.

³⁵⁷ *Commercial Exchange Shipping List*, CC 3/7/2/2.

Chapter 4: Production

4.1) Introduction

Maritime history has often had little to do with the common seaman with the focus being on trade, exploration, and the great navigators, but rarely on the men who sailed the ships.³⁵⁸ This has been particularly true with regard to the history of the Cape Colony even though sailors formed a large and heterogeneous floating population in the town.³⁵⁹ This chapter is an attempt to shed some light on the living conditions encountered by the Cape Town/Crozets sealers both en route to the islands and while on the islands.

While men like Liesching, Twycross and Jearey risked their capital in the hunt for elephant seals, those who went to the Crozets to carry out this task on their behalf often risked their lives and always risked their health. Apart from the meagre evidence from the case between Liesching and Twycross and some members of their sealing gang, there are no records of what these men were paid. From the records of this one case however, we can see that the ordinary sailors earned one hundred and twenty lays (if the vessel returned with £120 worth of elephant seal oil, they would be paid £1).³⁶⁰ If the records of the sealing industries of other nations during this period are anything to go by sealers

³⁵⁸ Jesse Lemisch, 'Jack Tar in the Streets: Merchant Seamen in the Politics of Revolutionary America', *William and Mary Quarterly* 25:3 (1968), pp. 371-407 at page 371. However, this lacuna in maritime history is slowly being filled. See for example Jeffrey Bolster, *Black Jacks: African American Seamen in the Age of Sail*, Daniel Vickers and Vince Walsh, *Young Men and the Sea: Yankee Seafarers in the Age of Sail*, as well as Peter Linebaugh and Marcus Rediker, *The Many Headed Hydra: Sailors, Slaves, Commoners, and the Hidden History of the Revolutionary Atlantic*.

³⁵⁹ Nigel Worden, Elizabeth van Heyningen and Vivian Bickford Smith, *Cape Town, the Making of a City: An Illustrated Social History*, at page 93.

³⁶⁰ *Cape Archives*, CSC Volume No. 2/1/1/28 Reference 32. Record of Proceedings of Illiquid Case. John Russel, John Young and William Saunders Versus William Leishing and George Twycross. Payment for Breach of Contract and Loss of Profits. 1834.

were poorly compensated. This was partly due to the fact that after the initial rush at the beginning of the century, catches declined sharply, so the sums earned were smaller. In addition to this, sealers were also vulnerable to many deductions made from their earnings by their employers. Being paid on the lay may have maximised efficiency, as the crew knew that the higher the catch the higher their income, but it certainly did not maximise crew earnings, a factor which could go some way towards explaining the intense competition between rival sealing gangs on the sealing grounds and the violence and deception that often accompanied this rivalry.³⁶¹

4.2) To the islands

4.2.1) Sailing to the Crozets

The closest distance between the Prince Edward Islands and the coastline of South Africa is the 1600 or so kilometres that separate the Prince Edward Islands from Algoa Bay, while the Crozet Islands lie 1000 kilometres to the east of the Prince Edward Islands, some 3300 kilometres from Cape Town.³⁶² As can be seen in Figure 4.1 below, the length of time spent on a sea elephanting voyage to the Crozets could be anywhere between 43 to 201 days. The shortest recorded voyage was that of the *Mountain Maid* which took a mere 26 days to go to the Prince Edward Islands and back in March 1848. However, most voyages were longer and even though large parts of the time were spent at anchor at the islands, at least part of the crew would have remained on the ship. The average return journey from the Crozets to Table Bay took 30 days (Fig. 4.2), but the time taken to reach

³⁶¹ James Kirker, *Adventures to China: Americans in the Southern Oceans 1792-1812*, at page 27.

³⁶² H.W. Tilman, 'Voyage to the Îles Crozet and Îles Kerguelen', *The Geographical Journal*, Vol. 127, No. 3 (Sep., 1961), pp. 310-316, at page 310. Also, see Figure 1.4.

the Crozets from Cape Town cannot be known for certain. The *Mary* took 36 days to reach the Crozets, though a large portion of this was spent in the vicinity of the Crozet Islands trying to find land. Voyages to the islands would most likely have been quicker as they would have travelled using the “roaring forties” – the prevailing winds in the sub-Antarctic region – and would have also have been helped by the ocean currents in the region as can be seen in Figures 4.3 and 4.4. The length of return voyages stayed relatively constant throughout the year with the exception of September (Fig. 4.5). This can be explained by the fact that only two vessels departed the Crozets in September and one of these vessels departed in ballast and was therefore lighter and travelled faster than the average oil laden vessels.

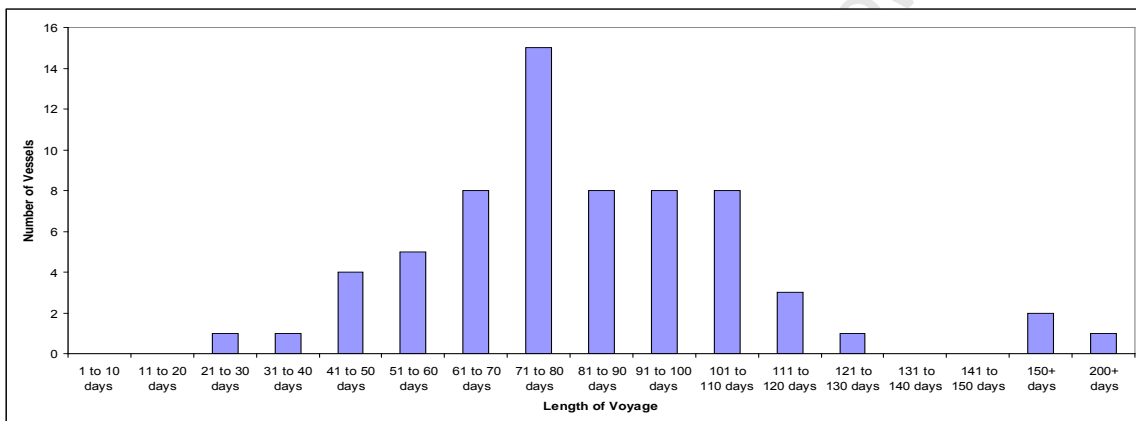


Figure 4.1: Overall length of voyages going from Cape Town to the Crozets and back again.

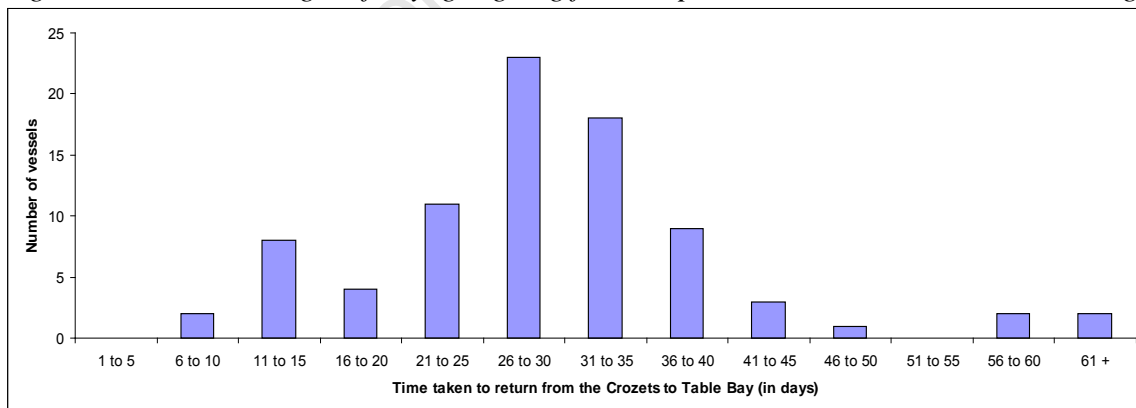


Figure 4.2: Length of return voyages from the Crozets to Table Bay.

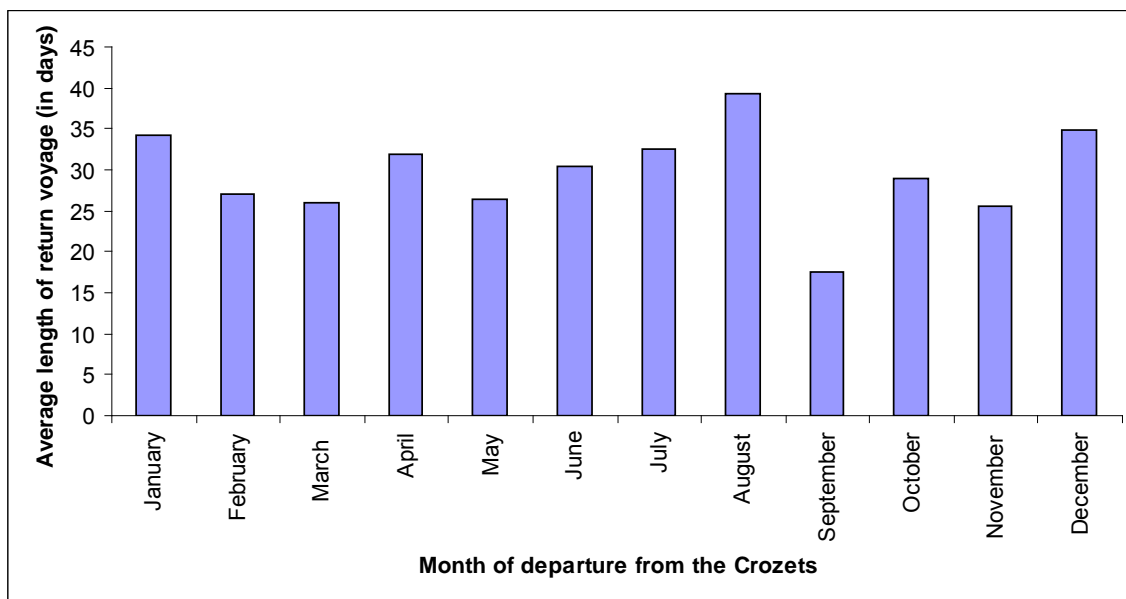


Figure 4.5: Average length of voyages returning from the Crozets according to the month of departure.

From the limited evidence available on voyages by Cape based vessels to the Crozets, it is difficult to establish what their route to the islands would have been. Judging by the only remaining logbook of such a voyage, and remarks made in the *Cape of Good Hope and Port Natal Shipping and Mercantile Gazette*, Crozets bound vessels from the Cape would either follow the coast to Algoa Bay and from then veer south into the ‘roaring forties’ or they would go south directly from Cape Town into the ‘roaring forties’.³⁶⁵

When returning from the Crozets, they would work their way back up the latitudes to escape both the cold and the westerlies and then lay a course for Cape Town.³⁶⁶

³⁶⁵ See *Cape of Good Hope and Port Natal Shipping and Mercantile Gazette* (1853–1861) and CSC Volume No. 2/1/1/28 Reference 32. Record of Proceedings of Illiquid Case. John Russel, John Young and William Saunders Versus William Leishing and George Twycross. Payment for Breach of Contract and Loss of Profits. 1834.

³⁶⁶ See H.W. Tilman, ‘Voyage to the Îles Crozet and Îles Kerguelen’, *The Geographical Journal*, Vol. 127, No. 3 (Sep., 1961), pp. 310-316 at page 315 and CSC Volume No. 2/1/1/28 Reference 32. Record of Proceedings of Illiquid Case. John Russel, John Young and William Saunders Versus William Leishing and George Twycross. Payment for Breach of Contract and Loss of Profits. 1834.

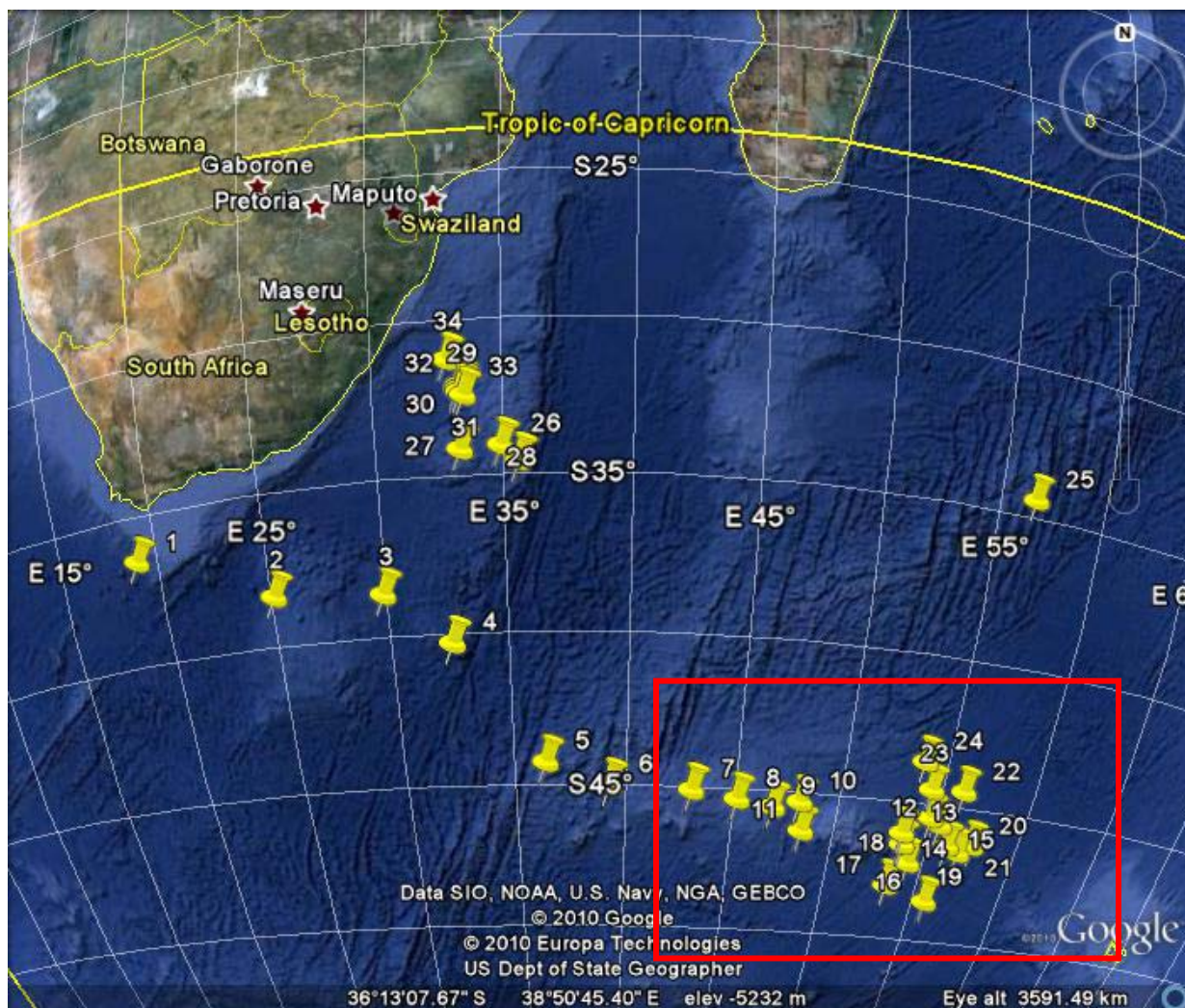


Figure 4.6: The course of the brig Mary during her voyage to the Crozets in 1833. The section in the rectangle is enlarged in Fig. 4.7.

Key:		
Departure from Cape Town = 31 Jan 1833	Point 12 = 21 Feb. 1833	Point 24 = 19 Mar. 1833
Point 1 = 3 Feb. 1833	Point 13 = 22 Feb. 1833	Point 25 = 19 Apr. 1833
Point 2 = 5 Feb. 1833	Point 14 = 23 Feb. 1833	Point 26 = 21 Apr. 1833
Point 3 = 7 Feb. 1833	Point 15 = 24 Feb. 1833	Point 27 = 22 Apr. 1833
Point 4 = 9 Feb. 1833	Point 16 = 26 Feb. 1833	Point 28 = 23 Apr. 1833
Point 5 = 11 Feb. 1833	Point 17 = 27 Feb. 1833	Point 29 = 25 Apr. 1833
Point 6 = 12 Feb. 1833	Point 18 = 28 Feb. 1833	Point 30 = 26 Apr. 1833
Point 7 = 13 Feb. 1833	Point 19 = 1 Mar. 1833	Point 31 = 27 Apr. 1833
Point 8 = 14 Feb. 1833	Point 20 = 2 Mar. 1833	Point 32 = 28 Apr. 1833
Point 9 = 15 Feb. 1833	Point 21 = 3 Mar. 1833	Point 33 = 29 Apr. 1833
Point 10 = 16 Feb. 1833	Point 22 = 4 Mar. 1833	Point 34 = 2 May 1833
Point 11 = 17 Feb. 1833	Point 23 = 6 Mar. 1833	Arrival at Cape Town = 16 May 1833

This trajectory can clearly be seen in the voyage of the *Mary* which was made in 1833 (Fig. 4.6). This voyage was atypical when one considers that they departed on the 31 January 1833, when the sea elephanting season was already nearing its end, and met with multiple setbacks. While sailing to the islands, one of the members of the crew, J. Hillin, fell overboard in stormy weather and died on 21 February, 1833. The logbook of the *Mary* makes clear just how difficult sailing to the Crozets could be. Curran, the Master of the vessel made constant references to ‘hard gales’ and ‘dense fog’ and sometimes weeks would go by between observations of their position. The poor nature of their instruments can also be seen by the observations that were made.

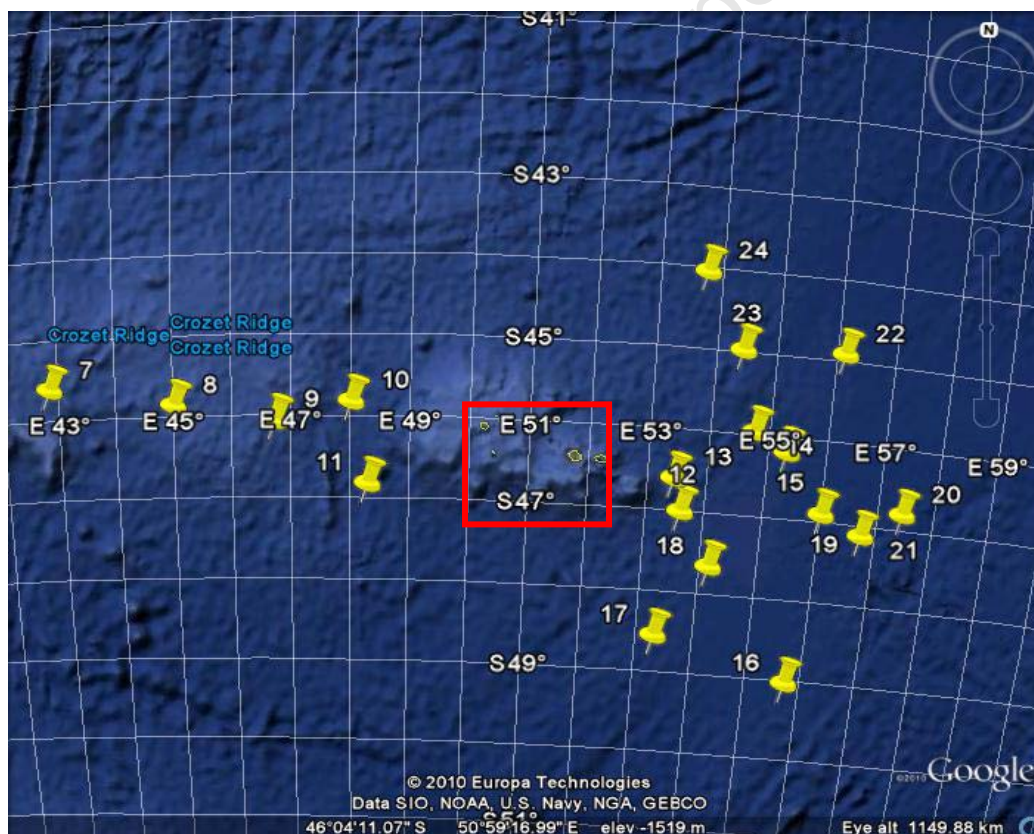


Figure 4.7: Detail from Fig. 4.6 showing the recorded course of the *Mary* while near the Crozet Islands. The Crozet Islands are situated within the rectangle.

The *Mary* spent weeks searching for the Crozet Islands and Curran comments in the logbook suggest that he did not know where the Crozets were located. For example, on 3 March 1833, (point 21) he states ‘Gave up hopes of finding land in this quarter’. When they did find the Crozets (between points 23 and 24) the observations recorded were over 250 km off the actual position of the Crozets. The *Mary* only found the Crozet islands on the 7 March, 1833, near the end of the elephant seals annual moult when there are not many left on the islands and those that remained had lost a great deal of weight during the moulting fast. While at the islands Curran stated on the 18 March, 1833, that the brig was ‘not in a fit state’ and that “from the inclemency of the weather my sails being old/not being fit to set and my crew getting dissatisfied I determined on standing to the northward to improve my weather and repair my sails”. After this they returned to the islands where they began to run short of provisions and soon after one of the men, Thomas Rowlands, became insolent and was charged with embezzling provisions and another member of the crew, Russel, threatened Curran. Shortly afterwards, the *Mary* left the islands sailing to the northward with a mere 7 tons of oil to show for their efforts.³⁶⁷

As can be seen in Figure 4.1 above, those involved in the sea elephanting voyages spent a large proportion of their time either at sea or on the islands (the large majority of the sea elephanting voyages would take between 60 and 110 days before arriving back at the Cape). Admittedly these voyages did not last as long as certain whaling voyages (which

³⁶⁷ The logbook of the *Mary* can be found as part of the evidence given in CSC Volume No. 2/1/1/28 Reference 32. Record of Proceedings of Illiquid Case. John Russel, John Young and William Saunders Versus William Leishing and George Twycross. Payment for Breach of Contract and Loss of Profits. 1834.

might last for up to four years), but it was long enough for sealers to face many of the dangers and deprivations of life at sea.

4.2.2) *Life on a wooden world*

It is easy to forget that prior to the Industrial Revolution ships were the largest and most complex objects produced by most societies, and according to Larry Murphy, they are still the largest and most complex mobile structures produced.³⁶⁸ Their effectiveness was increased by the fact that once the structure was built, all that was needed were navigational devices and information to reach ones destination and, in areas of piracy or times of war, weapons to repel attack.³⁶⁹ Lenihan claims that the technological advancement of ships and the fact that many voyages were of an exploratory nature, means that the modern equivalent of the ship would be a manned space vehicle.³⁷⁰ Since the sailing ship was the most technically advanced man-made artefact before the age of steam and iron seamen had to learn a language totally divorced from that of the land in order to grapple with the complexities of running and standing rigging, mast and spars, knots and splices, blocks and tackles and sails and steering, a language Joseph Conrad described as “a flawless thing for its purpose”.³⁷¹ The language of the sea was often rough and abrupt, something necessary in a world where communication needed to be clear and quick in situations where the rapid transmission and understanding of an order may be the difference between life and death. Such use of language obviously had social

³⁶⁸ George F. Bass, ‘A Plea for Historical Particularism in Nautical Archaeology’ and Larry Murphy, ‘Shipwrecks as Data Base for Human Behavioral Studies’ in Richard A. Gould (ed.), *Shipwreck Anthropology*, at pages 92 and 65.

³⁶⁹ Carla Rahn Phillips, ‘Exploring from Early Modern to Modern Times’ in Daniel Finamore (ed.), *Maritime History as World History*, at page 74.

³⁷⁰ Daniel J. Lenihan, ‘Rethinking Shipwreck Archaeology: A History of Ideas and Considerations for New Directions’ in Richard A. Gould (ed.), *Shipwreck Anthropology*, at page 50.

³⁷¹ Alan Gurney, *Below the convergence: Voyages Towards Antarctica, 1699-1839*, at page 279.

implications on land and could go some way towards explaining the tension that existed between Capetonians and the transient sailors that stopped off in Cape Town. It could also go some way towards explaining why there are no cases of any slaves or cheap coloured menial labourers being used on the Crozets bound vessels as at least a portion of the men leaving on these voyages would have had to be skilled seamen.

Lack of technology in the nineteenth century inevitably meant that once the vessel left port there were long gaps in communication between owner and master of the ship, so the latter enjoyed considerable freedom to exercise his judgment. This required a high degree of trust between the Master and owner.³⁷² The master was the representative of merchant capital hired to manage the navigation of the vessel, tending the compass, steering the vessel, transacting the business throughout the voyage and everything else related to the running of the vessel.³⁷³ The master of a vessel would often face conditions over which he had little or no control and in an age of sail, he would have to adapt his course and how the crew were treated depending on an unknown set of variables.³⁷⁴ For example, Curran had to leave the Crozets and sail north in order to fix his sails and relieve his men from the poor weather conditions before once again returning to the islands.³⁷⁵ It was therefore not uncommon for younger members of the family of the owner to serve as

³⁷² Olaf U. Janzen, 'A World-Embracing Sea: The Oceans as Highways, 1604-1815' in Daniel Finamore (ed.), *Maritime History as World History*, at page 107.

³⁷³ Marcus Rediker, *Between the Devil and the Deep Blue Sea*, at page 84.

³⁷⁴ Olaf U. Janzen, 'A World-Embracing Sea: The Oceans as Highways, 1604-1815' in Daniel Finamore (ed.), *Maritime History as World History*, at page 104.

³⁷⁵ *Cape Archives*. CSC Volume No. 2/1/1/28 Reference 32. Record of Proceedings of Illiquid Case. John Russel, John Young, and William Saunders Versus William Leisching and George Twycross. Payment for Breach of Contract and Loss of Profits. 1834.

shipmaster, or to form some part of the crew.³⁷⁶ This was the case in the Cape Town/Crozets sea elephanting trade where Robert Jearey, the son of John Jearey, often went to the Crozets aboard his father's vessels.

The successful operation of a vessel required a strict chain of command,³⁷⁷ and life at sea as a Master was not for the fainthearted as it was a difficult task to bring together a largely random selection of individuals (the majority of whom were unknown to each other), working as an effective unit under his control.³⁷⁸ The Master also had the unenviable task of maintaining discipline among the men, which was far from easy as can be seen by the insubordination shown by both Rowlands and Russel to John Curran during the voyage of the *Mary* to the Crozets.³⁷⁹ This was not helped by the high turnover among seamen, creating a workplace that has little stability as far as personnel is concerned.³⁸⁰

To accomplish the task of maintaining discipline on board, the Master was given wide powers. According to Rediker, the ship was a 'total institution' in which the captain had formal powers over the labour process, the dispensing of food, the maintenance of health, and general social life on board the ship. Although Rediker was writing about the

³⁷⁶ Olaf U. Janzen, 'A World-Embracing Sea: The Oceans as Highways, 1604-1815' in Daniel Finamore (ed.), *Maritime History as World History*, at page 107.

³⁷⁷ Larry Murphy, 'Shipwrecks as Data Base for Human Behavioral Studies' in Richard A. Gould (ed.), *Shipwreck Anthropology*, at page 67.

³⁷⁸ Warren H. Hopwood, 'Some Problems Associated with the Selection and Training of Deck and Engineer Cadets in the British Merchant Navy' in Peter H. Fricke (ed.), *Seafarer and Community*, at page 101-102.

³⁷⁹ *Cape Archives*, CSC Volume No. 2/1/1/28 Reference 32. Record of Proceedings of Illiquid Case. John Russel, John Young and William Saunders Versus William Leishing and George Twycross. Payment for Breach of Contract and Loss of Profits. 1834.

³⁸⁰ Vilhelm Aubert and Oddvar Arner, 'On the Social Structure of the Ship', *Acta Sociologica* 3-4 (1958-1959), pp. 200-219 at page 201.

eighteenth century Atlantic, it is clear that the same was often true for the nineteenth century Indian Ocean. Such formal and informal controls invested the captain with near-dictatorial powers and made the ship one of the earliest totalitarian work environments.³⁸¹

According to an article from the *Cape of Good Hope and Port Natal Shipping and Mercantile Gazette*, this was both acceptable and necessary as:

“The English law is jealous of the personal rights of the meanest subject; and any individual however humble, who resists the injustice of the most powerful oppressor, is sure of its protection. The only and necessary exception to this rule, in civil life, is in the case of a seaman, who, when he enters on board a vessel, voluntarily renounces this right of resistance so long as the voyage endures. In this respect, his situation resembles that of a soldier in a campaign. Disobedience to orders in a soldier may lead to the ruin of an army; and a mutinous sailor may cause the loss of a ship. It is for this reason that the law does not, and the courts should not, countenance the slightest departure from this rule of implicit obedience, on the part of the crew, to all commands of the master, except in very rare and peculiar cases”.³⁸²

When sailors entered the wooden world of a ship at sea, they often did so knowing full well that the areas they would be travelling to may have been poorly mapped. Although it must be said that map-making improved dramatically in the nineteenth century and the British spent much time and effort on making accurate charts as they were aware of the fact that knowledge and power coexisted in a symbiotic relationship.³⁸³ However, even where maps were available, one must keep in mind that terrestrial maps were different to maps of the ocean. Terrestrial maps showed the position of places to which the observer could relate, at will, by processes of measurement whereas at sea, when out of sight of

³⁸¹ Marcus Rediker, *Between the Devil and the Deep Blue Sea*, at page 212.

³⁸² *Cape of Good Hope and Port Natal Shipping and Mercantile Gazette*, No. 269, 23 February 1849

³⁸³ Michael Pearson, *The Indian Ocean*, at page 200.

the land, sailors found themselves in a place where “[there is no] observable relationship with known points, in an inherently hostile medium in which he is carried at rates and in directions which he can estimate but cannot accurately measure”.³⁸⁴ According to Cook:

“Assuming the seaworthiness of his vessel, and fair weather, the ‘safest part of any voyage is the period when the mariner is headed away from land to open ocean, and, with the problems in measuring his progress at sea, the most hazardous time is when he tries to approach land again (or arrives unexpectedly at unforeseen land). The sea chart allows the recording of progress or movement only by a series of estimates of daily position, not in relation to known topography, but by astronomical observations for latitude, and by compass bearing, modified by informed guesses for distance covered, and the effects of wind and current. Aboard ship the chart, as a means of recording progress of the voyage, was just another instrument, like the compass, the sextant (or backstaff), the sailing directions, the log and lone, and the log-book (or account)”.³⁸⁵

The difficulties of plotting ones position can be clearly seen in the logbook entries of John Curran during the voyage of the *Mary*. As can be seen in Fig. 4.5, Curran’s calculations of the position of the Crozet Islands were off by over 250 km.

At least the men involved in the Cape Town/Crozets elephant seal oil trade did not also have the additional worry of being accosted by pirates or of being boarded by enemy vessels. This was because the British had taken a series of vital ports in the Indian Ocean by the nineteenth century so that her hegemony in the Indian Ocean was uncontested, in effect turning the Indian Ocean into what Pearson describes as ‘a British lake’ during the nineteenth century.³⁸⁶

³⁸⁴ Andrew S. Cook, ‘Establishing the Sea Routes to India and China: Stages in the Development of Hydrographical Knowledge’, in H.V. Bowen, Margarette Lincoln and Nigel Rigby (eds.), *The Worlds of the East India Company*, at page 120.

³⁸⁵ *Ibid.*

³⁸⁶ Michael Pearson, *The Indian Ocean*, at page 281.

Seafarers had to deal with the fact that once on board, the place where they lived would also act as their place of work as well as their place of leisure, and that this area was shared with other men as well as rats, cockroaches, and maggots, which infested every deep-sea vessel thus leading to poor hygienic conditions.³⁸⁷ Cases of frost-bite, influenza and rheumatism were also prevalent in vessels that travelled to the colder regions of the world, such as the sub-Antarctic.³⁸⁸ Despite these dangers, perhaps the most surprising thing I have found in my research on the Cape Town/Crozets elephant seal oil trade is that there were remarkably few reported instances of death caused by disease amongst the Cape sea elephanters. There are only two records I have been able to find of death by disease amongst these men. The first was the simple line “By the *Courier*, from Crozets, July 18, to this port. Lost both anchors and cables; also a hand by the scurvy on the 24th July”.³⁸⁹ The second was “Died from consumption, C. Engelbrecht”.³⁹⁰

Space on the small sealing schooners for seamen was severely limited. According to the shipping register of the Commercial Exchange, the *Guadelquiver* (a 113 ton schooner) was listed as having 12 fishermen as passengers.³⁹¹ The *Liffey* (a 134 ton schooner) was listed as having 14 fishermen as passengers while the *Esther* (another 134 ton schooner)

³⁸⁷ See Daniel J. Lenihan, ‘Rethinking Shipwreck Archaeology: A History of Ideas and Considerations for New Directions’ in Richard A. Gould (ed.), *Shipwreck Anthropology*, at page 51, Vilhelm Aubert and Oddvar Arner, ‘On the Social Structure of the Ship’, *Acta Sociological 3-4 (1958-1959)*, pp. 200-219 at page 200, and Marcus Rediker, *Between the Devil and the Deep Blue Sea*, at page 160.

³⁸⁸ Nathaniel W. Taylor, M.D., *Life on a Whaler or Antarctic Adventures in the Isle of Desolation*, Howard Palmer (ed.), at page 132.

³⁸⁹ *Cape of Good Hope and Port Natal Shipping and Mercantile Gazette*, No. 347, 23 August 1850.

³⁹⁰ *Commercial Exchange Shipping List*, CC 3/7/2/2.

³⁹¹ *Commercial Exchange Shipping List*, CC 3/7/2/2.

had 28 fishermen listed as passengers.³⁹² There is no indication in any of the archival sources what the dimensions of the Cape based vessels sent to the Crozets were, but we can assume that they would not have been very different from those of the other sealing schooners that visited the Crozets during the same time period. We do know the dimensions of two of the vessels that we have come across earlier in this work. The *Emeline* was a 92 ton schooner with one deck and a length of 20.5 m, while the *United States* was a 244 ton vessel with two decks and a length of 29.5 m.³⁹³ 135 ton schooners generally had one deck and a length of 27 m.³⁹⁴ These figures clearly show that deck space on these vessels was at a premium. Within the small confined area of the vessel, “they [the sailors] must eat, sleep, keep warm, interact, defecate, and reflect on their condition with no relief from each other”.³⁹⁵ Ashore, one can join and leave groups at will,³⁹⁶ but once at sea, they could not escape from colleagues or superiors – even when ill or off duty - due to the finite space on a ship.³⁹⁷ In addition to the limited personal space and the limited freedom of movement, the seaman would also be faced with a limited choice of society as well as limited choices of leisure activities.³⁹⁸

According to Foulkes, the confined space of the vessel had other stressful effects on seamen. On land, human beings could gain a sense of freedom and power through

³⁹² *Commercial Exchange Shipping List*, CC 3/7/2/2.

³⁹³ <http://library.mysticseaport.org/initiative/CuSearch.cfm> accessed on the 10/07/2010.

³⁹⁴ *Ibid*, accessed on the 15/10/2010.

³⁹⁵ Daniel J. Lenihan, ‘Rethinking Shipwreck Archaeology: A History of Ideas and Considerations for New Directions’ in Richard A. Gould (ed.), *Shipwreck Anthropology*, at page 51.

³⁹⁶ Robert D. Foulke, ‘Odysseus’s Oar: Archetypes of Voyaging’ in Daniel Finamore (ed.), *Maritime History as World History*, at page 190-191.

³⁹⁷ Bryan Nolan, ‘A Possible Perspective on Deprivations’ in Peter H. Fricke (ed.), *Seafarer and Community*, at page 92.

³⁹⁸ Jan Horbulewicz, ‘The Parameters of the Psychological Autonomy of Industrial Trawler Crews’ in Peter H. Fricke (ed.), *Seafarer and Community*, at page 68.

activities like walking or running whereas at sea, motion is imposed upon one with temporary and debilitating effects.³⁹⁹ Sailors also found themselves in a confined space onboard while looking out into a horizon containing a seascape of monotonous regularity, “so seafarers find their sense of space suggesting infinity and solitude, on the one hand, and prison-like confinement on the other”.⁴⁰⁰

These various stressors often led to aggression amongst seamen, and the best way of relieving this stress, or at least of taking their minds off of it was to keep them busy for as long as possible. This was done by tightly regulating time while onboard the vessel.⁴⁰¹

Life on a merchant vessel in the 1830’s has been described as follows:

“The discipline of the ship requires every man to be at work upon something when he is on deck...you will never see a man, on board a well-ordered vessel, standing idle on deck, sitting down, or leaning over the side. It is the officer’s duty to keep every one at work, even if there is nothing to do”.⁴⁰²

The forces of nature dictated many of the tasks to be performed at sea, and the seaman’s work and leisure are continually influenced by changes in climatic and sea conditions.⁴⁰³

But there were occasions when no repairs needed to be done and it was at these times that smaller but still crucial chores filled the hours.⁴⁰⁴ The chores undertaken during the voyage of the *Mary* included repairing the sails, being ‘employed variously about the

³⁹⁹ Robert D. Foulke, ‘Odysseus’s Oar: Archetypes of Voyaging’ in Daniel Finamore (ed.), *Maritime History as World History*, at page 190-191.

⁴⁰⁰ *Ibid.*

⁴⁰¹ Bryan Nolan, ‘A Possible Perspective on Deprivations’ in *Seafarer and Community*, Peter H. Fricke (ed.), at page 88.

⁴⁰² Michael Seltzer, ‘Haven an a Heartless Sea: The Sailors’ Tavern in History and Anthropology’, *The Social History of Alcohol and Drugs: An Interdisciplinary Journal* 19 (2004), pp. 63-93 at page 64.

⁴⁰³ Jan Horbulewicz, ‘The Parameters of the Psychological Autonomy of Industrial Trawler Crews’ in Peter H. Fricke (ed.), *Seafarer and Community*, at page 68.

⁴⁰⁴ Marcus Rediker, *Between the Devil and the Deep Blue Sea*, at page 95.

rigging', 'knotting yarns and other necessary jobs', 'breaking out the hold', and 'drying sails'.⁴⁰⁵ The menial nature of these tasks can be seen by the fact that Curran often did not even bother to mention what tasks the sailors were ordered to do, stating only 'hands employed as most requisite', 'hands variously employed', or that the crew were busy doing 'sundry jobs'.⁴⁰⁶ Such maintenance made it possible for seafaring work to be almost perpetual.⁴⁰⁷

However, the unabated anxiety that seamen had to live with placed them under considerable psychological pressure.⁴⁰⁸ Once seamen left shore onboard a vessel, not only did they relinquish all control to the Master, they were also cut off from all social ties with the land, both by distance and by physical barriers, leaving behind family and friends.⁴⁰⁹ The cultural patterns of any social group are always changing, and the sailor will not be aware of the changes that have occurred while he was away at sea, he will return to a new social environment which he may not always be able to adapt to.⁴¹⁰ This will be especially true with regards to the family unit as during his time away, the sailor's family may have had so many new experiences that the sailor's return may represent a meeting of strangers.⁴¹¹ In short, the home he left is not the one he returns to nor is he the same man who left and this would hold true no matter what the length of absence, be it a

⁴⁰⁵ *Cape Archives*, CSC Volume No. 2/1/1/28 Reference 32. Record of Proceedings of Illiquid Case. John Russel, John Young and William Saunders Versus William Leishing and George Twycross. Payment for Breach of Contract and Loss of Profits. 1834.

⁴⁰⁶ *Ibid.*

⁴⁰⁷ Marcus Rediker, *Between the Devil and the Deep Blue Sea*, at page 95.

⁴⁰⁸ A.J.R. Russel-Wood, 'Seamen Ashore and Afloat: The Social Environment of the *Carreira Da India*, 1550-1750', *Mariner's Mirror* 69 (1983), pp. 35-52 at page 43.

⁴⁰⁹ Warren H. Hopwood, 'Some Problems Associated with the Selection and Training of Deck and Engineer Cadets in the British Merchant Navy' in Peter H. Fricke (ed.), *Seafarer and Community*, at page 101-102.

⁴¹⁰ Craig J. Forsyth, *The American Merchant Seaman and His Industry: Struggle and Stigma*, at page 32.

⁴¹¹ *Ibid.*, at page 33.

sealer who would spend three months on the Crozets during the breeding season or one who spent multiple years wintering on the islands; the difference will be in degree, not kind.⁴¹² Being at sea for long periods of time would also interfere with a seaman's need for sexual gratification and emotional contact.⁴¹³ This isolation would have been compounded by the fact that sailors often had very few real friends due to the extremely high rate of turnover at sea, limiting their opportunities to establish and maintain stable social relationships.⁴¹⁴

4.3) Shelter and clothing

Due to the tempestuousness of the weather at the Crozet and Prince Edward Islands, one can assume that most of the vessels sent there would have left a sealing gang on the islands and a skeleton crew to man the ship so as to ensure that it could depart quickly if the weather turned. The weather was often so poor that weeks could pass before contact between the vessel and the shore was re-established, as can be seen by Hickley's comment to Sir James Clark Ross that before Ross' arrival, they had been unable to launch a boat for five weeks due to the tempestuousness of the weather.⁴¹⁵

⁴¹² Craig J. Forsyth, *The American Merchant Seaman and His Industry: Struggle and Stigma*, at page 33.

⁴¹³ Jan Horbulewicz, 'The Parameters of the Psychological Autonomy of Industrial Trawler Crews' in Peter H. Fricke, *Seafarer and Community*, at page 69.

⁴¹⁴ Michael Seltzer, 'Haven an a Heartless Sea: The Sailors' Tavern in History and Anthropology', *The Social History of Alcohol and Drugs: An Interdisciplinary Journal* 19 (2004), pp. 63-93 at page 79.

⁴¹⁵ Sir James Clark Ross, *Voyage of Discovery and Research in the Southern and Antarctic Regions During the Years 1839-1843, Vol. 1*, at page 53.

Since both island groups lie just south of the sub-tropical Convergence, they are not ice-clad but do have what Richards describes as a ‘wet, chilly and gloomy atmosphere’.⁴¹⁶ Recent research at the Prince Edward Islands suggests that low temperatures can occur throughout the year, while gale force winds are experienced on more than 100 days per year and last for extended periods (as can be seen in Table 4.1 below).⁴¹⁷ The winds are so strong and frequent as to prevent the growth trees on the islands, making them so-called ‘wind deserts’.⁴¹⁸ In addition to the strong and regular winds, some form of precipitation occurs on Marion Island on 311 days of the year, an average of 25 days every month, while temperatures are consistently low as can be seen in Fig. 4.8 below.⁴¹⁹

*Table 4.1: Average monthly and annual frequency of days with gales at Marion Island (1951–1960).*⁴²⁰

	J	F	M	A	M	J	J	A	S	O	N	D	Year
Full gales (66 kmph)	3.0	2.4	3.1	3.3	2.7	4.6	5.1	3.3	4.7	2.9	3.9	3.7	42.7
Moderate Gales (55 kmph)	8.7	6.2	6.5	8.0	8.6	9.5	10.7	10.3	11.4	8.4	8.4	10.1	106.8

⁴¹⁶ Rhys Richards, ‘The Commercial Exploitation of Sea Mammals at Iles Crozet and Prince Edward Islands before 1850’, *Polar Monographs 1* 1992, at page 3.

⁴¹⁷ Peter C. Le Roux, ‘Climate and Climate Change’ in *The Prince Edward Islands: Land-Sea Interactions in a Changing Ecosystem* by Steven L. Chown and Pierre W. Froneman (eds.), at pages 19 and 44.

⁴¹⁸ E.M. van Zinderen Bakker, Sr, ‘Introduction’ in E.M. van Zinderen Bakker Sr., J.M. Winterbottom and R.A. Dyer (eds.), *Marion and Prince Edward Islands: Report on the South African Biological and Geological Expedition 1965-1966*, at page 6.

⁴¹⁹ *Ibid.*

⁴²⁰ *Ibid.*, at pages 6 and 22.

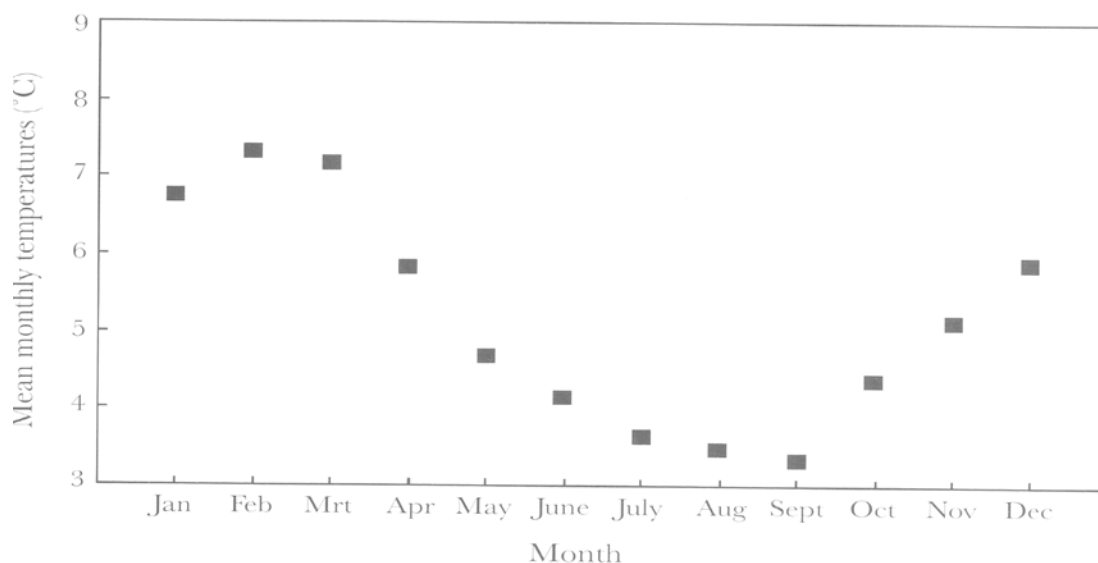


Figure 4.8. Mean monthly temperatures (°C) at Marion Island between the years 1951–1961.⁴²¹

When one also considers that in winter the length of day is only 8.6 hours (and 15.8 hours in summer), it becomes clear that finding adequate shelter would have played a crucial role in the ability of sea elephanting gangs to survive on the islands.⁴²² In the winter at least, these shelters were the place where sealers spent most of their days thus making it a central feature of sealing life.

Sometimes sealing gangs would use the natural features available on the islands to find shelter. Caves were made habitable by the erection of a wall across the rear portion of the cavern.⁴²³ For example, the cave on the eastern side of Prince Edward Island was used for

⁴²¹ Peter C. Le Roux, 'Climate and Climate Change' in *The Prince Edward Islands: Land-Sea Interactions in a Changing Ecosystem* by Steven L. Chown and Pierre W. Froneman (eds.), at page 41.

⁴²² E.M. van Zinderen Bakker, Sr, 'Introduction' in E.M. van Zinderen Bakker Sr., J.M. Winterbottom and R.A. Dyer (eds.), *Marion and Prince Edward Islands: Report on the South African Biological and Geological Expedition 1965-1966*, at page 6.

⁴²³ R.I. Lewis Smith and H.W. Simpson, 'Early Nineteenth Century Sealers' Refuges on Livingstone Island, South Shetland Islands', *British Antarctic Survey*, Vol. 74, 1987, pp. 49-72 at page 53.

shelter by the shipwrecked crews of both the *Richard Dart* and the *Maria*.⁴²⁴ When caves were not available the sealers also used their boat as temporary shelters until they could construct a more permanent habitation from wood brought with them to the islands for the purpose.⁴²⁵ For temporary shelter, boats were turned upside down and ‘tussicked up’.⁴²⁶ This consisted of placing one edge of the upside down boat on the ground with the other edge being raised by three or four feet with a turf wall.⁴²⁷ An opening would be left in this wall which would act as a small doorway through which the men could move in and out.⁴²⁸ A fire would be made outside of the opening with elephant seal blubber and each man would retire to the part of the boat where he usually rowed.⁴²⁹

Huts were built using stone and wood with the skins of elephant seals used as roofing.⁴³⁰ They were also built upwind of the sites where blubber was being rendered as the rancid smell was notoriously bad.⁴³¹ These shelters did not have any windows however, so the entrance was also the only means of light and air entering the dwelling and when the weather forced them to close off this entrance, this was also shut out.⁴³² Artificial light could be provided by making fires out of the remaining wood and/or elephant seal oil.

⁴²⁴ O. Langenegger and W.J. Verwoerd, ‘Topographic Survey’ in E.M. van Zinderen Bakker Sr., J.M. Winterbottom and R.A. Dyer (eds.), *Marion and Prince Edward Islands: Report on the South African Biological and Geological Expedition 1965-1966*, at page 39.

⁴²⁵ Arthur C. Watson, ‘A Voyage on the Sealer *Emeline* and the journal from Washington Fosdick’s manuscript preserved in the museum of the old Dartmouth Historical Society at New Bedford’, *New York Zoological Society*, Vol. 9 (1931), pp. 475-549, at page 487.

⁴²⁶ Charles Medyett Goodridge, *Narrative of a Voyage to the South Seas and the Shipwreck of the Princess of Wales Cutter, with an Account of Two Years Residence on an Uninhabited Island*, at page 37.

⁴²⁷ *Ibid.*

⁴²⁸ *Ibid.*

⁴²⁹ *Ibid.*

⁴³⁰ *Ibid.*, at page 48-49.

⁴³¹ K. Townrow, ‘Sealing Sites on Macquarie Island: An Archaeological Survey’, *Papers and Proceedings of the Royal Society of Tasmania* Volume 122(1), 1988, pp. 15-25 at page 21.

⁴³² Charles Medyett Goodridge, *Narrative of a Voyage to the South Seas and the Shipwreck of the Princess of Wales Cutter, with an Account of Two Years Residence on an Uninhabited Island*, at page 49.

The drawback of this during times of poor weather was the smoke. Goodridge reported that after a few days of bad weather, the men “might well have been mistaken for a company of chimney-sweepers, our exterior being as sooty as might needs be, and our whole persons pretty tolerably smoke-dried into the bargain”.⁴³³

Once they had managed to erect a shelter under which “they huddled together far worse than sheep”, and found a way of ensuring that a fire could be started for both warmth and light, sealers could try and make their habitation as comfortable as possible.⁴³⁴ To do this, they would create beds out of the long tussock grass that rimmed the coast of the islands, and the skins of any seals that they found were used as sheets and blankets.⁴³⁵

The skins of seals and elephant seals were often used to provide clothing for the sealing gangs. Southern fur seal skins were used to make suits to provide warmth and were shaped into moccasins.⁴³⁶ The seal skins were made soft by rubbing them with stones and sand.⁴³⁷ They were then cut to shape and sewn together using needles made from the wing bones of albatross with the dried sinews of seals used as thread.⁴³⁸ These moccasins were an important part of the sealers gear as many of the areas where food was gathered required crossing the scoria slopes of the mountains. However, due to perspiration, seal

⁴³³ Charles Medyett Goodridge, *Narrative of a Voyage to the South Seas and the Shipwreck of the Princess of Wales Cutter, with an Account of Two Years Residence on an Uninhabited Island*, at page 51.

⁴³⁴ Rhys Richards, ‘The Journal of Erasmus Darwin Rogers, the First Man on Heard Island’, *The American Neptune*, Vol. 41, 1981, pp. 280-305 at page 304.

⁴³⁵ Rhys Richards, ‘The Commercial Exploitation of Sea Mammals at Iles Crozet and Prince Edward Islands before 1850’, *Polar Monographs 1 1992*, at page 3, and Charles Medyett Goodridge, *Narrative of a Voyage to the South Seas and the Shipwreck of the Princess of Wales Cutter, with an Account of Two Years Residence on an Uninhabited Island*, at page 48-49.

⁴³⁶ James Kirker, *Adventures to China: Americans in the Southern Oceans 1792-1812*, at page 22.

⁴³⁷ Charles Medyett Goodridge, *Narrative of a Voyage to the South Seas and the Shipwreck of the Princess of Wales Cutter, with an Account of Two Years Residence on an Uninhabited Island*, at page 69.

⁴³⁸ *Ibid.*

skin clothing would quickly rot and need to be replaced.⁴³⁹ The skins were also often accidentally soaked in elephant seal oil during the trying-out process which caused them, in the words of Sir James Clark Ross, to smell “most offensively”.⁴⁴⁰

The skins of the king penguins were also used to make moccasins, though they were not as durable as those made from seal skins.⁴⁴¹ The feathers were turned inward, and were drawn tightly over the feet to produce what was described as a comfortable, but not very durable shoe that would quickly break apart on the mountainous and rocky parts of the islands, which consisted of volcanic scree and scattered boulders.⁴⁴² According to Goodridge, sometimes only half an hours wear could perish penguin skin moccasins so sealers always carried two or three spare pairs with them whenever they went on long excursions.⁴⁴³ The extra pairs of moccasins were quite possibly carried in pouches made out of the webbed feet of an albatross.⁴⁴⁴ The sealers would also use the beaks of the king penguins for the bowls of their pipes.⁴⁴⁵ To this they attached the long and slender bones

⁴³⁹ Charles Medyett Goodridge, *Narrative of a Voyage to the South Seas and the Shipwreck of the Princess of Wales Cutter, with an Account of Two Years Residence on an Uninhabited Island*, at page 82.

⁴⁴⁰ Tom Graham, *Cultural Resource Management of the Prince Edward Islands*, at page 33.

⁴⁴¹ Charles Medyett Goodridge, *Narrative of a Voyage to the South Seas and the Shipwreck of the Princess of Wales Cutter, with an Account of Two Years Residence on an Uninhabited Island*, at page 53.

⁴⁴² See Tom Graham, *Cultural Resource Management of the Prince Edward Islands*, at page 33, Charles Medyett Goodridge, *Narrative of a Voyage to the South Seas and the Shipwreck of the Princess of Wales Cutter, with an Account of Two Years Residence on an Uninhabited Island*, at page 41 and H.W. Tilman, ‘Voyage to the Îles Crozet and Îles Kerguelen’, *The Geographical Journal*, Vol. 127, No. 3 (Sep., 1961), pp. 310-316 at page 313.

⁴⁴³ Charles Medyett Goodridge, *Narrative of a Voyage to the South Seas and the Shipwreck of the Princess of Wales Cutter, with an Account of Two Years Residence on an Uninhabited Island*, at page 41.

⁴⁴⁴ Nathaniel W. Taylor, M.D., *Life on a Whaler or Antarctic Adventures in the Isle of Desolation*, Howard Palmer (ed.), at page 93.

⁴⁴⁵ Charles Medyett Goodridge, *Narrative of a Voyage to the South Seas and the Shipwreck of the Princess of Wales Cutter, with an Account of Two Years Residence on an Uninhabited Island*, at page 53.

of an albatross to act as a stem.⁴⁴⁶ These pipes were used to smoke tobacco or, when there was no tobacco available, the dried grass that grew on the island.⁴⁴⁷

Although archaeological studies of the structure of sealing shelters on the Prince Edward and Crozet Islands have not revealed a great deal about the organisation of the sealing gangs on shore, Zarankin and Senatore's research on other sub-Antarctic islands has prompted some interesting conclusions about these shared living spaces. When they began their research they expected to find "architecturally standardized camps showing a high degree of space division according to hierarchy and functions", but instead the material culture and the organisation of space suggested that once sealers landed on the islands the status differences that normally existed among them was no longer observed.⁴⁴⁸ The archaeological evidence suggests that many of the activities in the shelters were communal. There was evidence of games, tobacco and alcohol consumption and almost all the objects found could be considered for communal use or consumption, or related to activities of socialisation.⁴⁴⁹ Zarankin and Senatore believed that shelters were deliberately used in this way as a means of creating a common space that would not have any of the elements of conflict that the ship or work camps may have had so as to generate "an artificial feeling of equality that facilitates the exercise of power by

⁴⁴⁶ Nathaniel W. Taylor, M.D., *Life on a Whaler or Antarctic Adventures in the Isle of Desolation*, Howard Palmer (ed.), at page 93.

⁴⁴⁷ Charles Medyett Goodridge, *Narrative of a Voyage to the South Seas and the Shipwreck of the Princess of Wales Cutter, with an Account of Two Years Residence on an Uninhabited Island*, at page 53.

⁴⁴⁸ Andrés Zarankin and María Ximena Senatore, 'Archaeology in Antarctica: Nineteenth-Century Capitalism Expansion Strategies', in *International Journal of Historical Archaeology*, Vol. 9, No. 1, March 2005, at page 50.

⁴⁴⁹ *Ibid.*

decompressing tension and maximizing workers' productivity".⁴⁵⁰ Such spaces where tension was released would have been crucial in a place where there were no police or judges to keep order.

The limited evidence that exists on the shelters of the Cape based sealing gangs on the Crozets suggests that they were not all housed in the same shelter. Captain J.J. Fuller, while en route to Desolation described staying overnight on Hog Island in what he termed 'a substantial house' that had been built by Cape sealing gangs.⁴⁵¹ When the *Emeline* visited Hog Island on a sealing voyage in 1844 she found a sealing gang of 40 Englishmen from the Cape residing there.⁴⁵² It seems highly unlikely that a shelter built from scavenged materials would have been capable of holding 40 men, or that there would always have been such a large number of men ashore. All other references to the number of Cape sealers on the Crozets give much lower numbers of men on an island. When the *Emeline* passed the Prince Edward Islands on 26 November 1842, she reported a party of 20 men from the Cape of Good Hope on the south part of Marion Island though the *Blue Books* state that "[t]here are about 50 men (sent from Cape Town) who constantly reside upon the Islands mentioned, [the Prince Edward and Crozet Islands] and who are employed in killing seals and preparing the oil".⁴⁵³ The survivors of the *Richard Dart*, shipwrecked on Prince Edward Island in 1849, reported Jearey's sealing gang

⁴⁵⁰ Andrés Zarankin and María Ximena Senatore, 'Archaeology in Antarctica: Nineteenth-Century Capitalism Expansion Strategies', in *International Journal of Historical Archaeology*, Vol. 9, No. 1, March 2005, at page 50.

⁴⁵¹ Rhys Richards, 'The Commercial Exploitation of Sea Mammals at Iles Crozet and Prince Edward Islands before 1850', *Polar Monographs 1* 1992, at page 18.

⁴⁵² Arthur C. Watson, 'A Voyage on the Sealer *Emeline* and the journal from Washington Fosdick's manuscript preserved in the museum of the old Dartmouth Historical Society at New Bedford', *New York Zoological Society*, Vol. 9 (1931), pp. 475-549, at page 483.

⁴⁵³ *Blue Books for the Cape of Good Hope, 1842*, at page 339.

consisted of 12 men.⁴⁵⁴ The *Blue Books* however state that for each year between 1847 and 1852, there were 70 men on the Crozet and Prince Edward Islands.⁴⁵⁵ Also, when the *Maria* was shipwrecked at Prince Edward Island in 1858, the *Cape Argus* reported that “[a] gang of eleven men had been employed on the islands for two years engaged in capturing sea elephants and seals”.⁴⁵⁶ This all suggests that the men were split into smaller sealing gangs with some based on the Prince Edward Islands, and others on the Crozet Islands.

It is possible that the number of men comprising a sealing gang was augmented or reduced by deserters to other sealing vessels that stopped off at the Crozets. For example, when Ellery Nash of the *Bolton* stopped over at Possession Island, one of his men ran away and another disappeared and may also have run away, while John Barnum of the schooner *United States* poached some of Jearey’s men.⁴⁵⁷ These men would no doubt have to join another of the sealing gangs on the islands in order to obtain certain necessities and to be able to gain passage off the islands. However, the most likely explanation for the 40 man shore party on Hog Island is that it consisted of both men who had been left behind on the island to produce oil and the crew of the ship that was sent to pick up the oil. While at the islands, members of the ship’s crew who had come to relieve the previous sealing gang, as well as those returning to the Cape were ashore to harvest and produce as much oil as possible before the vessel sailed. When Sir James Clark Ross

⁴⁵⁴ *Cape of Good Hope and Port Natal Shipping and Mercantile Gazette*, No. 307, 16 November 1849.

⁴⁵⁵ *Blue Books for the Cape of Good Hope*, 1847 at page 395, 1848 at page 447, 1849 at page 463, 1850 at page 463, and 1852 at page 451.

⁴⁵⁶ *The Cape Argus*, January 16, 1858.

⁴⁵⁷ Rhys Richards, ‘The Commercial Exploitation of Sea Mammals at Iles Crozet and Prince Edward Islands before 1850’, *Polar Monographs 1* 1992, at page 17, and *Cape Archives*. CSC Volume No. 2/1/1/64 Reference 19. Record of Proceedings of Illiquid Case. John Jearey Versus John Barnum. Debt. 1850.

left the Cape, he was told that there were 11 seamen on Possession and East Islands, which again suggests that the sealing gangs may have been split into smaller groups and sent to different islands depending on the size of the island and the availability of elephant seals.⁴⁵⁸

The fact that extra men joined the sealing gang on Hog Island during the breeding season in 1844 to augment its numbers to 40 no doubt meant that large numbers of elephant seals would have been killed. According to Washington Fosdick of the *Emeline*, this resulted in elephant seals abandoning the Island and instead hauling out on other islands such as Possession and East Island.⁴⁵⁹ It would thus seem that the sealing gangs had to chase elephant seals from island to island in the Crozets depending on where they hauled out in the greatest numbers. Due to the fact that there is a high degree of synchronization and annual regularity in the haulout periods on the islands, it was important that sealers were spread out so as to ensure they had access to as many elephant seals as possible when they were at their fattest. If they were all congregated in one place where the elephant seals had been killed off they may have been unable to search for other rookeries for weeks if the weather was poor, an important consideration when one takes into account the fact that the rate of weight loss amongst males during the breeding season is 9 kg per day.⁴⁶⁰

⁴⁵⁸ Ian Church, *Survival on the Crozet Islands: The Wreck of the Strathmore in 1875*, at page 27.

⁴⁵⁹ Arthur C. Watson, 'A Voyage on the Sealer *Emeline* and the journal from Washington Fosdick's manuscript preserved in the museum of the old Dartmouth Historical Society at New Bedford', *New York Zoological Society*, Vol. 9 (1931), pp. 475-549, at page 483.

⁴⁶⁰ Fillipo Galimberti, Simona Sanvito, Chiara Braschi, Luigi Boitani, 'The cost of success: reproductive effort in male southern elephant seals (*Mirounga leonina*)' in *Behavioral Ecology and Sociobiology* (2007) 62: 159-171 at page 163.

It seems likely that even these smaller sealing gangs did not all remain in the same dwelling, as can be seen in the reports of those shipwrecked on the *Richard Dart* who took 44 days before they encountered two members of Jearey's sealing gang even though they spent several nights sheltering in one of the gang's huts.⁴⁶¹ This suggests that the sealing gangs had multiple huts. This may have been in order to split the men up into still smaller units. Tom Graham's archaeological analysis of the Prince Edward Islands suggests that four men were housed per hut, while on Heard Island in 1858, the journal of John Harrison stated that each gang consisted of three men, "a killer who was provided with a gun and lance, a skinner to cut off the blubber and a third man to carry the blubber to the depot".⁴⁶² This may also have played a part in reducing tensions in the shore party by allowing men to choose their companions. It is also possible that multiple huts were built due to the distribution of the elephant seals around the islands so that the men would not have to travel far from shelter in order to hunt and could find shelter easily if required. According to Goodridge, the surviving crew of the *Princess of Wales* were split between two islands and even before these two groups were reunited large distances had to be travelled in harsh weather and over difficult ground to obtain sufficient resources to feed themselves.⁴⁶³ When the crew was reunited on one Island, their number rose to 15 men and Goodridge claimed there was scarcely sufficient food to provide them all with sustenance.⁴⁶⁴ So it may have been necessary to split the sealing gangs up into smaller units in order to ensure that the resources in their immediate vicinity would not be

⁴⁶¹ *Cape of Good Hope and Port Natal Shipping and Mercantile Gazette*, No. 307, 16 November 1849.

⁴⁶² Tom Graham, *Cultural Resource Management of the Prince Edward Islands*, at page 27, and Rhys Richards, 'The Journal of Erasmus Darwin Rogers, the First Man on Heard Island', *The American Neptune*, Vol. 41, 1981, pp. 280-305 at page 304.

⁴⁶³ Charles Medyett Goodridge, *Narrative of a Voyage to the South Seas and the Shipwreck of the Princess of Wales Cutter, with an Account of Two Years Residence on an Uninhabited Island*, at page 65.

⁴⁶⁴ *Ibid*, at page 76.

quickly depleted. By separating the gangs into smaller units spread out over different areas of the islands, the pressure on the natural resources that were crucial for the survival of the sealing gangs would have been lower.

4.4) The return of the hunter gatherer: survival on the Crozets

As was seen above, although supplies were sent with the vessel, in order for any of the sealing ventures to be a success it was important that the men sent to the islands knew how to live off the land. Rediker claimed that there was probably no one in the eighteenth century who was better steered in the crafty art of self-preservation than the seaman and many of these skills were developed as ways to escape the exploitive nature of the wage system, especially as it related to the near-dictatorial control of food and drink on board the ship.⁴⁶⁵

The Prince Edward and Crozet Islands did not suffer from a lack of water. Some form of precipitation occurred on most days of the year and the islands held numerous streams as well as lakes.⁴⁶⁶ Often, the shelters of the sealing gangs were built close to a source of fresh water. Washington Fosdick described “[a] beautiful spring of crystal water, pure

⁴⁶⁵ Markus Rediker, *Between the Devil and the Deep Blue Sea*, at page 128.

⁴⁶⁶ B.J. Huntley, ‘Vegetation’ in E.M. van Zinderen Bakker Sr., J.M. Winterbottom and R.A. Dyer (eds.), *Marion and Prince Edward Islands: Report on the South African Biological and Geological Expedition 1965-1966*, at page 101.

and cold, [which] welled from the ground in bubbling freshness just beyond the old shanty”.⁴⁶⁷

Very little is known about the supplies that the Cape sealing gangs brought with them to the Crozets and the only record that we have of the type of stores they had are those from a single court case. This is unfortunate as a full inventory of ships stores (that is the materials taken along expressly for the subsistence needs of the crew), would give us an understanding of the nutritional budget of work on the islands.⁴⁶⁸

It is quite possible that Liesching and Twycross’ sealing gang were unaccustomed to life on the sub-Antarctic islands and did not know how to supplement the provisions sent from Cape Town with the natural resources of the islands and therefore saw the supplies as deficient and an insult to their self-worth. George Byworth, the supercargo of the *St. Helena* on its 1833 voyage to the Crozets (and a man who had experience of life on the sub-Antarctic islands) claimed that the sealing gang had ‘plenty of provisions’.⁴⁶⁹

Perhaps a baseline of what Byworth would have considered adequate was what he had received when he was a member of a sealing gang on Desolation during the years 1832 and early 1833. Byworth described the usual allowance for himself and his 13 colleagues as consisting of salt provisions, bread and ham. They also had an allowance of “four pieces of pork each weighing five pounds per week, a pound of bread each per day, three

⁴⁶⁷ Arthur C. Watson, ‘A Voyage on the Sealer *Emeline* and the journal from Washington Fosdick’s manuscript preserved in the museum of the old Dartmouth Historical Society at New Bedford’, *New York Zoological Society*, Vol. 9 (1931), pp. 475-549, at page 484.

⁴⁶⁸ Daniel J. Lenihan, ‘Rethinking Shipwreck Archaeology: A History of Ideas and Considerations for New Directions’ in Richard A. Gould (ed.), *Shipwreck Anthropology*, at page 58.

⁴⁶⁹ *Cape Archives*, CSC Volume No. 2/1/1/28 Reference 32. Record of Proceedings of Illiquid Case. John Russel, John Young and William Saunders Versus William Leishing and George Twycross. Payment for Breach of Contract and Loss of Profits. 1834.

pounds of flour to each man per week, besides coffee, sugar and spirits”, though these supplies had to be supplemented with what was available on the island.⁴⁷⁰

Although the exact quantities of subsistence goods brought to the Crozets for the sealing gangs of Liesching and Twycross is unknown, from the archival sources it is possible to piece together what type of goods were sent to the islands. These goods included: beef, bread, flour, biscuits, beans, rice, salt, pepper, vinegar, curry powder, sugar, brandy, spirits, tea, and tobacco as well as guns, gunpowder, lances and hooks for fishing.⁴⁷¹

What is clear is that these supplies were not nearly sufficient as three months before the men of Liesching and Twycross’ sealing gang were supposed to be relieved their provisions had already run out. The plaintiffs in the case remained on the islands for another six months after this (presumably having been reprovisioned) and claimed that “they were reduced to great sufferings and sickness from starvation and were so much enfeebled that [they] were obliged to leave the islands”.⁴⁷² The fact that the plaintiffs won the case and were awarded £15 each minus deductions to repay what was owed to Liesching and Twycross for money forwarded to them before they departed suggests that they had good reason to complain that they had been poorly treated. But when one considers that they were asking for £45 plus interest due, we can see that this was a relatively hollow victory for the men involved.

⁴⁷⁰ *Cape Archives*, CSC Volume No. 2/1/1/28 Reference 32. Record of Proceedings of Illiquid Case. John Russel, John Young and William Saunders Versus William Leishing and George Twycross. Payment for Breach of Contract and Loss of Profits. 1834.

⁴⁷¹ *Ibid.*

⁴⁷² *Ibid.*

What this case makes very clear is that in order to survive on the islands, sealers needed to be able to take full advantage of the natural resources. They ate all the animals available on the islands, not only to supplement their rations, but sometimes also to give them a change from their monotonous diet.⁴⁷³ For example, the meat of seals was roasted, fried, broiled, or stewed, while its tongue was salted and preserved.⁴⁷⁴ Hair seals were described as tasting like beef, while the fur seals tasted similar to lamb.⁴⁷⁵ The flippers of seals were used in soup and were, according to Kirker, considered superior to those of the green turtle of the Galapagos Islands (considered a great delicacy).⁴⁷⁶ Goodridge also described seals as making a “rare and delicious repast”.⁴⁷⁷ Seal meat was a source of ascorbic acid while the seal liver provided nearly ten times the amount of ascorbic acid that the meat did, therefore helping to ward off deficiency diseases such as scurvy.⁴⁷⁸ Seal livers were said to provide such an excellent dish that Scott claimed “there was a strong temptation to kill them for their livers only, and I think it is a creditable fact that we refrained from obtaining this luxury at a rate so expensive to life”.⁴⁷⁹ However, by the time the Cape sealers made their presence felt on the Crozets, few fur seals remained, so eating fur seal meat would have most certainly been the exception rather than the rule. The most readily available source of fresh meat available to the Cape sealers would have been that of the elephant seal.

⁴⁷³ Jeff Rubin, ‘Train Oil and Snotters: Eating Antarctic Wild Foods’ in *Gastronomica*, (Winter, 2003), pp. 37-57 at page 37.

⁴⁷⁴ James Kirker, *Adventures to China: Americans in the Southern Oceans 1792-1812*, at page 22.

⁴⁷⁵ *Ibid.*, at page 14.

⁴⁷⁶ *Ibid.*, at page 22.

⁴⁷⁷ Charles Medyett Goodridge, *Narrative of a Voyage to the South Seas and the Shipwreck of the Princess of Wales Cutter, with an Account of Two Years Residence on an Uninhabited Island*, at page 69.

⁴⁷⁸ Jeff Rubin, ‘Train Oil and Snotters: Eating Antarctic Wild Foods’ in *Gastronomica*, (Winter, 2003), pp. 37-57 at page 38.

⁴⁷⁹ *Ibid.*, at page 42.

Nunn claimed that one elephant seal could provide food for seven or eight days, with the tongue, heart, and kidneys being removed and cooked in various ways.⁴⁸⁰ The flippers, which were described as resembling a “very coarse beef, to the eye, but was very hard, and by no means palatable”, were boiled for a considerable length of time to form a kind of jelly that would, with the addition of sea birds and eggs, make a very good soup.⁴⁸¹

The trunk of the elephant seal (which consisted of a fleshy skin), was boiled in salt water for hours, then served stuffed and roasted and was known as ‘snotters’.⁴⁸² The tongues and livers were considered to be good eating, so good in fact that in 1822, the *Philo* stopped off at Marion Island especially to collect an elephant’s tongue for the Captain’s dinner.⁴⁸³ Tongues, which could weigh up to ten pounds, were cooked in slices, fried in fresh blubber, or preserved by placing them in empty beef or pork pickle casks and brought home as a luxury.⁴⁸⁴ The brain of the elephant seal was also eaten either in a soup, or in a raw state when it was said to taste as sweet as sugar.⁴⁸⁵

The blood of the elephant seal was also used to wash with as it removed both dirt and grease.⁴⁸⁶ When Goodridge and his shipmates needed to wash anything they killed a elephant seal, turned the carcass on its back, took out the intestines, and allowed the

⁴⁸⁰ Jeff Rubin, ‘Train Oil and Snotters: Eating Antarctic Wild Foods’ in *Gastronomica*, (Winter, 2003), pp. 37-57 at page 44.

⁴⁸¹ Charles Medyett Goodridge, *Narrative of a Voyage to the South Seas and the Shipwreck of the Princess of Wales Cutter, with an Account of Two Years Residence on an Uninhabited Island*, at page 52.

⁴⁸² Briton Cooper Busch, ‘Elephants and Whales: New London and Desolation, 1840-1900’, *The American Neptune: a quarterly journal of maritime history* Vol. 40 (1980), pp. 117-126 at page 118.

⁴⁸³ Tom Graham, *Cultural Resource Management of the Prince Edward Islands*, at page 30.

⁴⁸⁴ Jeff Rubin, ‘Train Oil and Snotters: Eating Antarctic Wild Foods’ in *Gastronomica*, (Winter, 2003), pp. 37-57 at page 44.

⁴⁸⁵ Charles Medyett Goodridge, *Narrative of a Voyage to the South Seas and the Shipwreck of the Princess of Wales Cutter, with an Account of Two Years Residence on an Uninhabited Island*, at page 54.

⁴⁸⁶ *Ibid*, at page 52.

blood to flow into the body cavity in which they washed dirty articles before rinsing them in a nearby stream.⁴⁸⁷

The meat obtained from elephant seals, though filling, could sometimes lead to illness. Washington Fosdick described how a man who had eaten a several day old elephant seal liver was taken ill and was in great agony due to stomach cramps and almost dead when Fosdick reached him.⁴⁸⁸ Also, Goodridge reported that their diet often caused their “bowels to become affected”.⁴⁸⁹ When the shipwrecked crew of the *Maria* were returned to the Cape in 1858 after spending seven months on Prince Edward Island, the *Cape of Good Hope and Port Natal Shipping and Mercantile Gazette* described how some of the men were “suffering from the effects of the inclement weather to which they were exposed, and the peculiar diet upon which they were compelled to subsist for such a length of time”.⁴⁹⁰ There is no evidence that the dietary habits of the sealing gangs had any long term ill-effects however.

After elephant seals, the multitude of seabirds were the most important source of food for sealing gangs. The eggs of albatross were said to “far exceed in flavour hen’s eggs and [were] five times their size”.⁴⁹¹ They were so rich however that when the shipwrecked

⁴⁸⁷ Charles Medyett Goodridge, *Narrative of a Voyage to the South Seas and the Shipwreck of the Princess of Wales Cutter, with an Account of Two Years Residence on an Uninhabited Island*, at page 52.

⁴⁸⁸ Arthur C. Watson, ‘A Voyage on the Sealer *Emeline* and the journal from Washington Fosdick’s manuscript preserved in the museum of the old Dartmouth Historical Society at New Bedford’, *New York Zoological Society*, Vol. 9 (1931), pp. 475-549, at page 529.

⁴⁸⁹ Charles Medyett Goodridge, *Narrative of a Voyage to the South Seas and the Shipwreck of the Princess of Wales Cutter, with an Account of Two Years Residence on an Uninhabited Island*, at page 92.

⁴⁹⁰ *Cape of Good Hope and Port Natal Shipping and Mercantile Gazette*, No. 734, 22 January 1858.

⁴⁹¹ Arthur C. Watson, ‘A Voyage on the Sealer *Emeline* and the journal from Washington Fosdick’s manuscript preserved in the museum of the old Dartmouth Historical Society at New Bedford’, *New York Zoological Society*, Vol. 9 (1931), pp. 475-549, at page 514.

passengers of the *Strathmore* first ate them, it made them ill.⁴⁹² Nathaniel Taylor claimed that only the yolk of the egg was palatable as the white did not congeal when boiled.⁴⁹³ An additional advantage of albatross eggs was their thick shells that were used by sealers as oil lamps.⁴⁹⁴ The eggs of king penguins were also often eaten, while penguins were also used to make what Sir James Clark Ross described as an excellent soup whose colour and flavour resembled hare soup.⁴⁹⁵ The sealers found it easy to rob penguins of their eggs, simply knocking them down with a stick. Penguin eggs were available in limitless numbers between November and March because the birds laid new eggs to replace those taken by sealers.⁴⁹⁶ Goodridge's shipmates also beat them up raw with hot water as a substitute for tea.⁴⁹⁷ So many different bird species could be found on the islands that George Byworth claimed "eggs are to be obtained all year round" and that one could pick up a thousand penguin eggs in half an hour.⁴⁹⁸

The birds were not only important for their eggs but were often also eaten by sealers.

Albatross were easy to catch as they are awkward on land, although the adult birds were

⁴⁹² Ian Church, *Survival on the Crozet Islands: The Wreck of the Strathmore in 1875*, at page 67.

⁴⁹³ Nathaniel W. Taylor, M.D., *Life on a Whaler or Antarctic Adventures in the Isle of Desolation*, Howard Palmer (ed.), at page 92.

⁴⁹⁴ Jeff Rubin, 'Train Oil and Snotters: Eating Antarctic Wild Foods' in *Gastronomica*, (Winter, 2003), pp. 37-57 at page 49.

⁴⁹⁵ Charles Medyett Goodridge, *Narrative of a Voyage to the South Seas and the Shipwreck of the Princess of Wales Cutter, with an Account of Two Years Residence on an Uninhabited Island*, at page 40, and Jeff Rubin, 'Train Oil and Snotters: Eating Antarctic Wild Foods' in *Gastronomica*, (Winter, 2003), pp. 37-57 at page 39.

⁴⁹⁶ Charles Medyett Goodridge, *Narrative of a Voyage to the South Seas and the Shipwreck of the Princess of Wales Cutter, with an Account of Two Years Residence on an Uninhabited Island*, at page 40.

⁴⁹⁷ Jeff Rubin, 'Train Oil and Snotters: Eating Antarctic Wild Foods' in *Gastronomica*, (Winter, 2003), pp. 37-57 at page 48.

⁴⁹⁸ *Cape Archives*, CSC Volume No. 2/1/1/28 Reference 32. Record of Proceedings of Illiquid Case. John Russel, John Young and William Saunders Versus William Leishing and George Twycross. Payment for Breach of Contract and Loss of Profits. 1834.

rarely eaten,⁴⁹⁹ the young were described as being “a delicious meal surpassing in flavour any wild fowl that can be named, as tender as can be, and larger than any goose”.⁵⁰⁰ They were said to resemble veal in tenderness and flavour.⁵⁰¹ The albatross nesting grounds were often located on higher ground, requiring sealers to climb steep ground in high winds, sometimes so fierce that the men would need to crawl back down.⁵⁰²

Aside from albatross, the sealers ate numerous other seabirds found on the islands.

Trained dogs were used to catch wild ducks, while petrels were caught by thrusting a bone from the wing of an albatross into their nests and if a young bird pecked at this bone it would be dug out, boiled, and fried to provide a good meal “free from any unpleasant fishy flavour”.⁵⁰³ According to Byworth, a man could dig out three or four dozen birds in just a couple of hours.⁵⁰⁴ Other small seabirds, such as “Petrels, Blue Petrels, Black Eaglets, Night Hawks, Divers and several others” were caught by lighting a fire after dark at the foot of a cliff which attracted them in large numbers and they proceeded to fly with such force against the cliff that they were stunned and easily picked up.⁵⁰⁵

⁴⁹⁹ Ian Church, *Survival on the Crozet Islands: The Wreck of the Strathmore in 1875*, at page 47, Nathaniel W. Taylor, M.D., *Life on a Whaler or Antarctic Adventures in the Isle of Desolation*, Howard Palmer (ed.), at page 92.

⁵⁰⁰ Ian Church, *Survival on the Crozet Islands: The Wreck of the Strathmore in 1875*, at page 47, and Arthur C. Watson, ‘A Voyage on the Sealer *Emeline* and the journal from Washington Fosdick’s manuscript preserved in the museum of the old Dartmouth Historical Society at New Bedford’, *New York Zoological Society*, Vol. 9 (1931), pp. 475-549, at page 514.

⁵⁰¹ Nathaniel W. Taylor, M.D., *Life on a Whaler or Antarctic Adventures in the Isle of Desolation*, Howard Palmer (ed.), at page 92.

⁵⁰² Ian Church, *Survival on the Crozet Islands: The Wreck of the Strathmore in 1875*, at page 47.

⁵⁰³ *Ibid.*, at pages 28 and 47.

⁵⁰⁴ *Cape Archives*, CSC Volume No. 2/1/1/28 Reference 32. Record of Proceedings of Illiquid Case. John Russel, John Young and William Saunders Versus William Leishing and George Twycross. Payment for Breach of Contract and Loss of Profits. 1834.

⁵⁰⁵ Charles Medyett Goodridge, *Narrative of a Voyage to the South Seas and the Shipwreck of the Princess of Wales Cutter, with an Account of Two Years Residence on an Uninhabited Island*, at page 65.

Sealing gangs also supplemented their diet with fish caught in the bay. Byworth claimed that these were easily caught with a line and hook and were very good eating.⁵⁰⁶ This sentiment was shared by Washington Fosdick who claimed that “[w]e have also fish in abundance. Whenever we wish a mess of fresh fish we have only to bait the hooks, throw the lines over the vessel’s sides, and then transfer the fish to the frying-pan”.⁵⁰⁷ The fish were then preserved by drying.⁵⁰⁸

Some sealing gangs also tried to introduce alien animals to the islands to improve the dietary options available to them though none of these attempts seem to have been successful. Sealers informed members of the *Challenger* expedition that rabbits abounded on the islands but were unpalatable.⁵⁰⁹ Goodridge also described there being numerous pigs on some of the islands but these animals were large, ferocious and armed with tusks and although they succeeded in killing some of them, they found their flesh unpalatable due to their diet consisting of coarse grass and the bodies of dead penguins.⁵¹⁰ There were also references to goats being introduced to the islands by an American ship, but no sources mention them being used for either milk or meat.⁵¹¹

⁵⁰⁶ *Cape Archives*, CSC Volume No. 2/1/1/28 Reference 32. Record of Proceedings of Illiquid Case. John Russel, John Young and William Saunders Versus William Leishing and George Twycross. Payment for Breach of Contract and Loss of Profits. 1834.

⁵⁰⁷ Arthur C. Watson, ‘A Voyage on the Sealer *Emeline* and the journal from Washington Fosdick’s manuscript preserved in the museum of the old Dartmouth Historical Society at New Bedford’, *New York Zoological Society*, Vol. 9 (1931), pp. 475-549, at page 514.

⁵⁰⁸ Ian Church, *Survival on the Crozet Islands: The Wreck of the Strathmore in 1875*, at page 28-29.

⁵⁰⁹ W. Botting Hemsley, ‘The Crozets’, *The Geographical Journal*, Vol. 21, No. 2 (Feb., 1903), p. 198, at page 198.

⁵¹⁰ Charles Medyett Goodridge, *Narrative of a Voyage to the South Seas and the Shipwreck of the Princess of Wales Cutter, with an Account of Two Years Residence on an Uninhabited Island*, at page 40.

⁵¹¹ Ian Church, *Survival on the Crozet Islands: The Wreck of the Strathmore in 1875*, at page 28-29.

The animals brought to the islands by sealers ended up having just as big an effect on the ecology of the islands as the sealers themselves did as in the relatively simple ecosystems of these islands, alien species have a greater potential for disruption than in complex and more resilient ecosystems.⁵¹² While some of the species that were introduced onto the islands have since been exterminated, such as the goats and pigs on the Crozet Islands, this was not done before they almost eradicated the vegetation of many islands.⁵¹³ Cats were introduced on many of the sub-Antarctic islands (often in an attempt to control rats that had been accidentally introduced by earlier sealing vessels) and have had detrimental affects on bird populations. For example, on the Kerguelen Islands, it was calculated that cats killed more than 1.2 million birds per year.⁵¹⁴ The Crozet Islands have not suffered the same losses, at least in part because cats are present on only one of the five islands in the archipelago.⁵¹⁵ Fig. 4.9 shows all of the alien mammal species that were still present on the sub-Antarctic islands in 1989.

⁵¹² Nigel Leader-Williams and David Walton, 'The isle and the pussycat' in *New Scientist*, 11 February 1989, No. 1651, pp. 48-51 at page 49.

⁵¹³ R. W. McColl, *Encyclopedia of World Geography, Vol. 1*, at page 340, and Nigel Leader-Williams and David Walton, 'The isle and the pussycat' in *New Scientist*, 11 February 1989, No. 1651, pp. 48-51 at page 48.

⁵¹⁴ Nigel Leader-Williams and David Walton, 'The isle and the pussycat' in *New Scientist*, 11 February 1989, No. 1651, pp. 48-51 at page 49.

⁵¹⁵ *Ibid.*

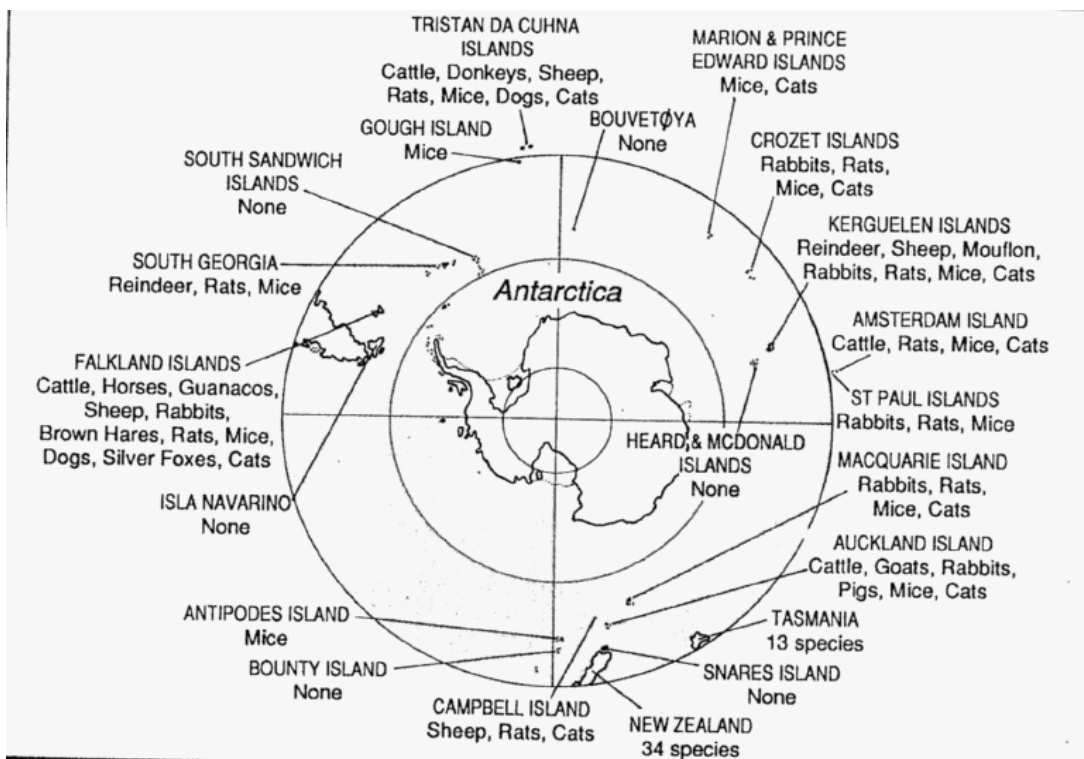


Figure 4.9: Alien mammal species that had been introduced to the islands of the sub-Antarctic by 1989.⁵¹⁶

Sealers on the Crozet and Prince Edward Islands also enjoyed the benefit of an abundance of Kerguelen cabbage *Pringlea antiscorbutica* a fresh though impalatable vegetable (a shipwrecked passenger of the *Strathmore* described it as ‘highly pungent’, with a ‘peculiar flavour and wholesome essence’).⁵¹⁷ According to Bellingshausen, sealers scraped the stalks and roots, cut them up very fine and made soup out of them.⁵¹⁸

The British botanist Joseph Dalton Hooker, who travelled with Sir James Clark Ross, described the cabbage root as tasting like horse-radish, “and the young leaves or hearts

⁵¹⁶ Nigel Leader-Williams and David Walton, ‘The isle and the pussycat’ in *New Scientist*, 11 February 1989, No. 1651, pp. 48-51 at page 49.

⁵¹⁷ John W. Thieret and Steven B. Young, ‘The Kerguelen-Cabbage, *Pringlea antiscorbutica* (Brassicaceae)’, *Economic Botany*, Vol. 42, No. 2 (Apr. – Jun., 1988), pp. 288-291, at page 288, and Ian Church, *Survival on the Crozet Islands: The Wreck of the Strathmore in 1875*, at page 47.

⁵¹⁸ Jeff Rubin, ‘Train Oil and Snotters: Eating Antarctic Wild Foods’ in *Gastronomica*, (Winter, 2003), pp. 37-57, at page 50.

resembled in flavour coarse mustard and cress”.⁵¹⁹ The leaves of the Kerguelen cabbage were rich in ascorbic acid and their vitamin C helped ward off scurvy.⁵²⁰ This explains why there was only one recorded death of a Cape sealer from scurvy during this period.⁵²¹ There is also evidence that those on the islands ate what was known as the ‘sea-carrot’, as well as a plant known as ‘red-root’ on which a certain Captain East claimed human beings could “not only exist, but get fat”.⁵²²

4.5) Conclusion

What is clear from the available information is that the sealers that went to the Crozets were often highly skilled seamen and they also needed to have learnt the skill set required to make the most of the natural resources that the islands had to offer them. The above could explain why, when Clark Ross met up with Jearey’s sealing gang on Possession Island, he described them as being “quite contented”, and claimed that they seemed to have “no wish to return to the Cape of Good Hope, having plenty [of] food”.⁵²³

The islands thus generously supplemented the stores that sealing gangs brought with them. Although their diet may have been unusual, it provided the sealers with the energy required to perform the labour of killing elephant seals.

⁵¹⁹ Jeff Rubin, ‘Train Oil and Snotters: Eating Antarctic Wild Foods’ in *Gastronomica*, (Winter, 2003), pp. 37-57, at page 52.

⁵²⁰ John W. Thieret and Steven B. Young, ‘The Kerguelen-Cabbage, *Pringlea antiscorbutica* (Brassicaceae)’, *Economic Botany*, Vol. 42, No. 2 (Apr. – Jun., 1988), pp. 288-291, at page 291.

⁵²¹ *Cape of Good Hope and Port Natal Shipping and Mercantile Gazette*, No. 347, 23 August 1850

⁵²² Ian Church, *Survival on the Crozet Islands: The Wreck of the Strathmore in 1875*, at page 47, and W. Botting Hemsley, ‘The Crozets’, *The Geographical Journal*, Vol. 21, No. 2 (Feb., 1903), p. 198 at page 198.

⁵²³ Sir James Clark Ross, *Voyage of Discovery and Research in the Southern and Antarctic Regions During the Years 1839-43, Vol 1*, at page 54.

In order to improve the dietary options available to them, sealers often introduced alien species to the islands that have continued to have a substantial impact long after sealing in these regions came to an end. We can thus conclude that sealers not only had a radical effect on the number of seals and elephant seals on the islands, they also impacted on all other island fauna and flora, by both hunting and gathering the available resources and by introducing alien species to the islands.

Chapter 5: How many elephant seals were taken by Cape sealing gangs on the Crozets?

5.1) Introduction

The question posed in the title of this chapter is not as simple as it first appears because a large number of variables need to be taken into account in order to estimate the number of elephant seals that were taken between the years 1832–1869 by Cape sealing gangs on the Crozets. This is a two-step process. Section 5.2 estimates how much elephant seal oil was imported to the Cape from the Crozets by Cape-based sea elephanting gangs.

Second, section 5.3 uses this value to estimate the number of elephant seals that were killed on the islands. Due to the number of variables involved in this process, this estimate will have a wide range. However, the results will still play a part in helping to determine the number of elephant seals killed by sealers over the last two centuries as Busch, who has made an attempt to estimate elephant seal numbers killed, seems to have focused only on the elephant seals taken at Kerguelen and Heard Islands and gives no figures for the Prince Edward and Crozet Islands.⁵²⁴

5.2) What was the total amount of elephant seal oil returned to the Cape from the Crozets between the years 1832–1869?

The first problem we encounter is that the quantity of oil brought back from the Crozets was often not listed. The shipping manifests of vessels returning from the Crozets were

⁵²⁴ Briton Cooper Busch, *The War Against the Seals: A History of the North American Seal Fishery*, at page 184.

not always published in the *Cape of Good Hope and Port Natal Shipping and Mercantile Gazette* (see appendix A for the full list of vessels). In addition to this, the *Cape of Good Hope and Port Natal Shipping and Mercantile Gazette* and its predecessor the *Cape of Good Hope Shipping List*, were only published from 1840–1861. The shipping lists of the Commercial Exchange sometimes record the quantity of oil returned for the years 1832–1839 and 1862–1869 (though this is only true for a minority of the vessels returning from the Crozets during the time periods in question and for the most part cargoes were simply listed as ‘Oil’). In some cases, the quantity of oil was revealed in court cases. However, there are still 28% of voyages for which the amount of oil is not recorded in any source. This is a significant portion of the sea elephanting voyages undertaken and the quantity of oil returned by these voyages could have a substantial effect on the total amount of oil returned. Therefore in estimating the total amount of elephant seals killed by Cape sealers on the Crozets, it is necessary for us to develop a model that can estimate the quantity of oil returned by those vessels where no cargo manifest existed.

In estimating the size of the missing cargoes, the first question was whether the size of the vessel or the length of time spent at the Crozets had the greater effect on the quantity of elephant seal oil produced. By using multiple linear regression, it was shown that the only statistically significant variable in predicting the tons of elephant seal oil taken was the tonnage of the vessel. Using the full data set the relationship was $Y = -25.4 + 0.572 X$, where Y is the predicted tonnage of elephant seal oil, and X is the tonnage of the vessel.

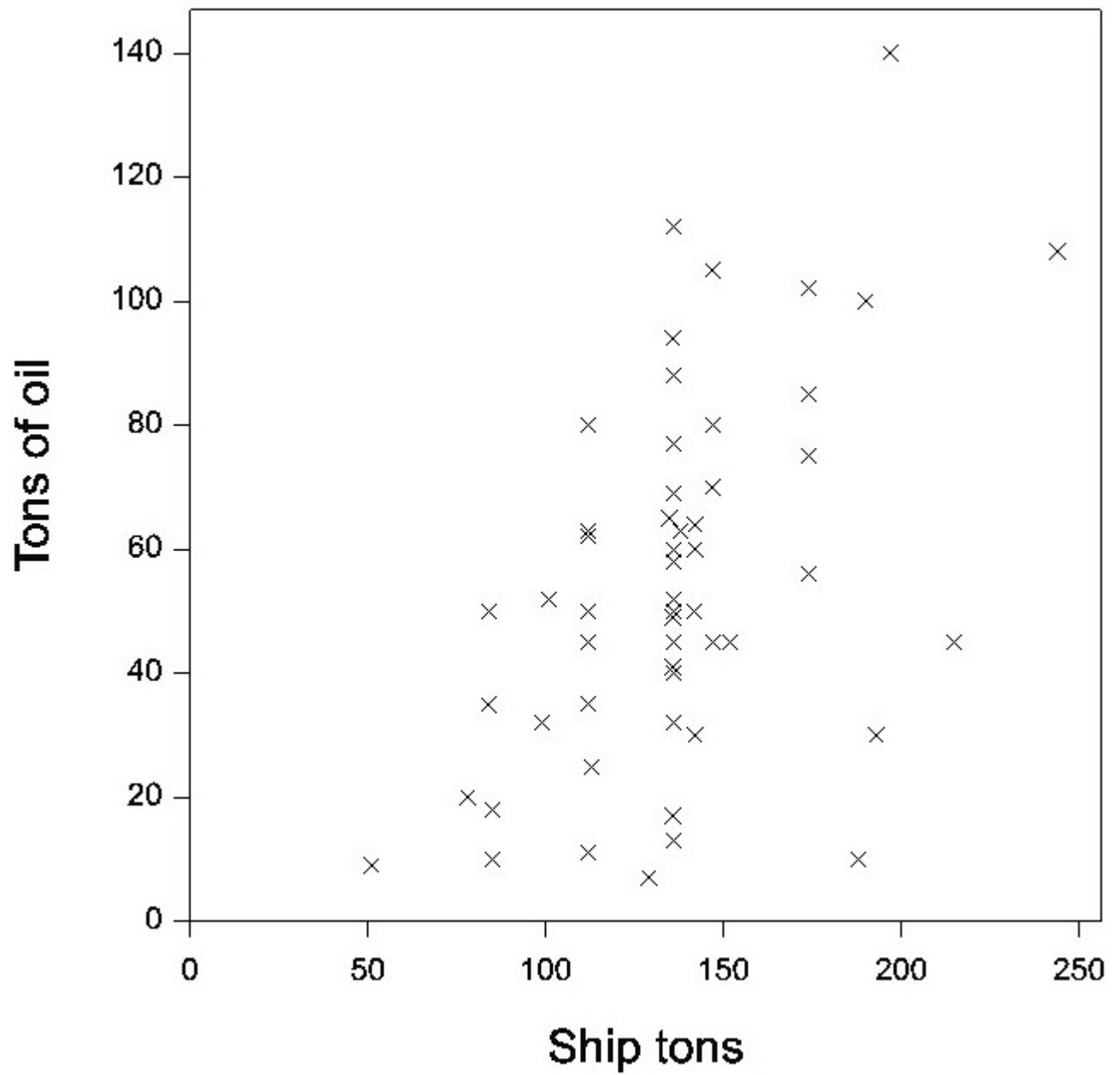


Figure 5.1: The relationship between the amount of oil returned by Cape vessels and the tonnage of the vessels.

This model accounted for 44.5% of the variance in elephant seal oil, and the slope coefficient (0.572, SE=0.080, $t=7.18$, $P<0.001$) suggests that for each ton of vessel, 0.572 tons of elephant seal oil was returned. However, the full dataset contained an outlier observation. The voyage of the *Vigilant*, a 404 ton vessel that went to the Crozets with a tender, the *Maid of Mona*, for the South African Whaling Company (in what was the company's only voyage to the Crozets) was influential in determining the slope of the regression line. If this value is removed, the relationship becomes $Y=1.80 + 0.363 X$, with the smaller slope coefficient remaining statistically significant (SE=0.106, $t=3.44$, $P<0.001$). This model explains 14.9% of the variance in elephant seal oil landed at the Cape from the Crozets.

Of the 100 Cape based vessels that went to the Crozets during the time period in question, one was clearly a whaling voyage and did not return with any elephant seal oil, one was sent to the Crozets specifically to take live elephant seal pups and did not return any elephant seal oil, four vessels returned 'in ballast' which suggests that they were sent with the sole purpose of depositing sealing gangs on the islands and thus returned without any elephant seal oil, while six vessels were wrecked while at the Crozets. When these voyages are removed from the dataset, the relationship becomes $Y= -0.70 + 0.408 X$. The slope coefficient (SE=0.098, $t=4.19$, $P<0.001$) is intermediate between the two earlier values, and suggests that for each ton of vessel, 0.408 tons of elephant seal oil was produced. I used this equation to estimate the amount of elephant seal oil for voyages for which only the tonnage of the vessel is available. The results can be seen in Appendix A and Fig. 5.2.

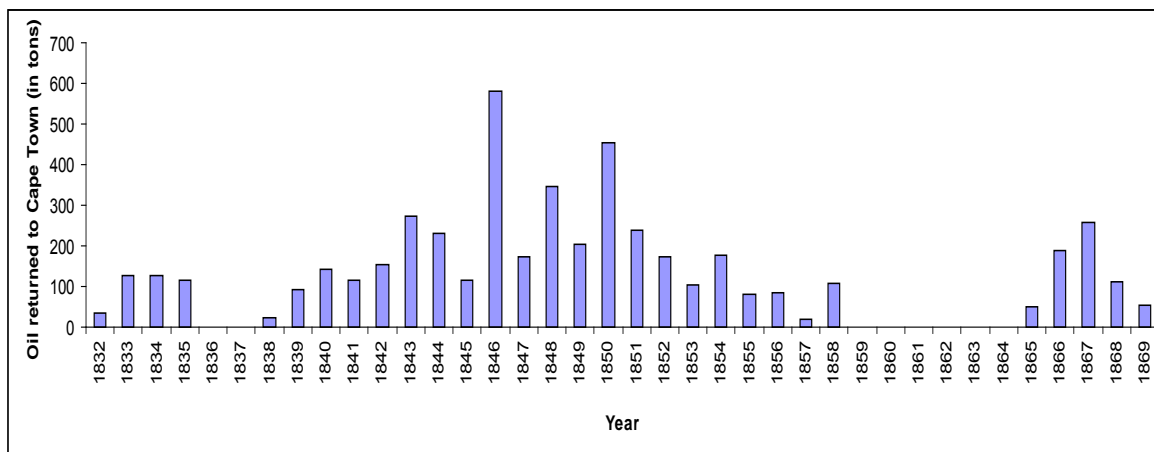


Figure 5.2: Estimated amount of elephant seal oil returned to Cape Town between the years 1832–1869.

Because the *Blue Books* for 1866 and 1867 give us a total of oil entering the colony, we can compare the results of this model against these numbers. According to our model, a total of 188 tons of elephant seal oil would have been taken in 1866 while the *Blue Book* for that year records 184 tons entering the Colony. Our model has 253 tons of elephant seal oil being taken in 1867 while the *Blue Book* for 1867 lists 261 tons of oil entering the Colony. This suggests that our model is consistent in determining the amount of elephant seal oil returned by vessels where no amount is listed in the shipping manifest.

Assuming that each vessel that returned from the Crozets brought 0.408 tons of elephant seal oil per ton of vessel back to the Cape, an estimated total of 4955 tons of elephant seal oil were taken off the Crozets between the years 1832–1869.

5.3) Difficulties encountered in estimating how many elephant seals were killed by Cape sealers between 1832–1869

Our next objective is to transfer the estimated total quantity of elephant seal oil returned to the Cape from the Crozets between the years 1832–1869, into the number of elephant seals slaughtered to produce this. This calculation faces a number of variables.

The first difficulty is the fact that elephant seals are the most dimorphic* of all mammal species.⁵²⁵ The variation in weight between males and females, and between adults and pups is extraordinarily large. Males are typically four times larger than females, and females are larger than their pups by the same order of magnitude.⁵²⁶ In addition, the weight differences within a gender is also large. Southern elephant seal bulls weigh between 1,500–3,000 kg.⁵²⁷ Females range from 350 to 800 kg, though most are in the range of 400–600kg.⁵²⁸ Weaned pups on the other hand have a relatively small mean mass of 119.5 kg.⁵²⁹

* In this case, dimorphism relates to the large difference in size between male and female southern elephant seals.

⁵²⁵ Filippo Galimberti, Simona Sanvito, Chiara Braschi, Luigi Boitani, 'The cost of success: reproductive effort in male southern elephant seals (*Mirounga leonina*)' in *Behavioral Ecology and Sociobiology* (2007) 62: 159-171 at page 159.

⁵²⁶ Rebecca Lewis, Tamsin C. O'Connell, Mirtha Lewis, Claudio Campagna, A. Rus Hoelzel, 'Sex-Specific Foraging Strategies and Resource Partitioning in the Southern Elephant Seal (*Mirounga leonina*)' in *Proceedings: Biological Sciences*, Vol. 273, No. 1603 (Nov. 22, 2006), pp. 2901-2907 at pg 2905.

⁵²⁷ M.A. Fedak, Tom Arnbo, Ian L. Boyd, 'The Relation Between the Size of Southern Elephant Seal Mothers, the Growth of Their Pups and the Use of Maternal Energy, Fat, and Protein during Lactation' in *Physiological Zoology*, Vol. 69, No. 4 (Jul. – Aug., 1996), pp. 887-911 at page 888.

⁵²⁸ Burney J. Le Boeuf and Richard M. Laws, 'Elephant Seals: An Introduction to the Genus' in Burney J. Le Boeuf and Richard M. Laws (eds.) *Elephant Seals: Population Ecology, Behavior, and Physiology*, at page 7.

⁵²⁹ Christophe Guinnet, 'Growth from Birth to Weaning in the Southern Elephant Seal (*Mirounga leonina*)' in *Journal of Mammology*, Vol. No. 72, No. 3 (Aug., 1991), pp. 617-620 at page 618.

The mass of the animal also undergoes drastic changes during its annual cycle. Elephant seals are at their heaviest when they return to the islands for the breeding season. The mean weight of males on the Falkland Islands on first arrival for the breeding haulout was $2,092 \pm 445$ kg, with individual males ranging from 1,316–3,182 kg.⁵³⁰ The mean weight at the end of the breeding season however, was $1,541 \pm 323$ kg,⁵³¹ with the daily rate of weight loss being 9.1 ± 2.9 kg/day.⁵³² Galimberti *et al.* calculated that males lost a mean of 551 kg by the time the breeding season ended, which constituted 25.8% of their original body weight (Fig. 5.3).⁵³³ The amount of weight lost by males varies according to a number of factors. Weight loss in males increased by 113 kg for every one year increase in age, weight loss for breeding males was greater than that for peripheral males, and amongst breeding males weight loss increased with an increase in the number of females held in their harems.⁵³⁴ In addition to this, weight loss increased with the duration of presence on land.⁵³⁵

⁵³⁰ Filippo Galimberti, Simona Sanvito, Chiara Braschi, Luigi Boitani, 'The cost of success: reproductive effort in male southern elephant seals (*Mirounga leonina*)' in *Behavioral Ecology and Sociobiology* (2007) 62: 159-171 at page 162.

⁵³¹ *Ibid.*

⁵³² *Ibid.*, at page 163.

⁵³³ *Ibid.*, at page 163.

⁵³⁴ *Ibid.*, at page 164.

⁵³⁵ *Ibid.*, at page 164.

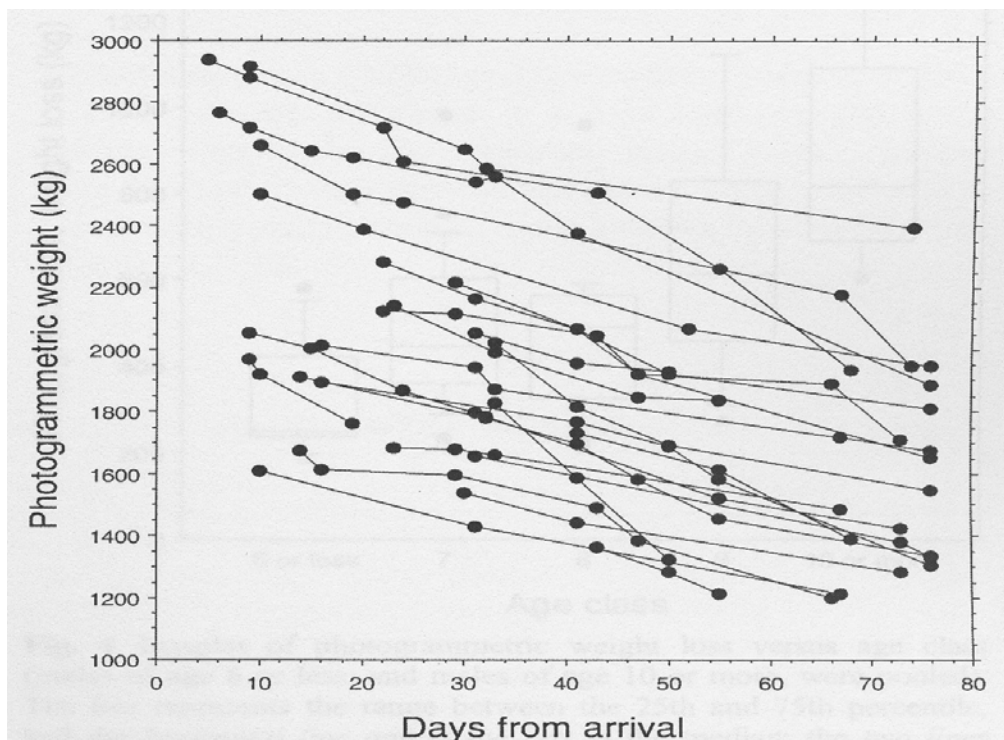


Figure 5.3: Individual photogrammetric weight losses for selected males at the Falkland Islands in 2003 where three or more weights for an animal were available.⁵³⁶

Females also showed drastic changes in weight during their annual cycle. McCann *et al*'s research showed that during the breeding season, the initial post-partum weight in females ranged from 346–803 kg.⁵³⁷ Fedak *et al*'s research, which was undertaken six years after McCann's, indicated that the mean female mass at parturition was 513 ± 98 kg (163 kg of which was made up of fat), while the mean female mass at weaning was 325 ± 74 kg.⁵³⁸ Weight loss during both pregnancy and lactation also varies amongst females

⁵³⁶ Filippo Galimberti, Simona Sanvito, Chiara Braschi, Luigi Boitani, 'The cost of success: reproductive effort in male southern elephant seals (*Mirounga leonina*)' in *Behavioral Ecology and Sociobiology* (2007) 62: 159-171 at page 163.

⁵³⁷ T.S. McCann, M.A. Fedak, J. Harwood, 'Parental Investment in Southern Elephant Seals, *Mirounga leonina*' in *Behavioral Ecology and Sociobiology*, Vol. 25, No. 2 (1989), pp. 81-87 at page 81.

⁵³⁸ M.A. Fedak, Tom Arnbohm, Ian L. Boyd, 'The Relation between the Size of Southern Elephant Seal Mothers, the Growth of Their Pups, and the Use of Maternal Energy, Fat, and Protein during Lactation' in *Physiological Zoology*, Vol. 69, No. 4 (Jul. – Aug., 1996), pp. 887-911 at page 901.

depending on their size,⁵³⁹ with mothers losing on average 35% of their post-partum mass during the 23 day nursing period (Fig. 5.5).⁵⁴⁰ The difference in the proportion of fat used between different individual females during the lactation period is also high with large females using 30% of the total fat available while smaller and younger females can use up to 70% of their total body fat (Fig. 5.4).⁵⁴¹

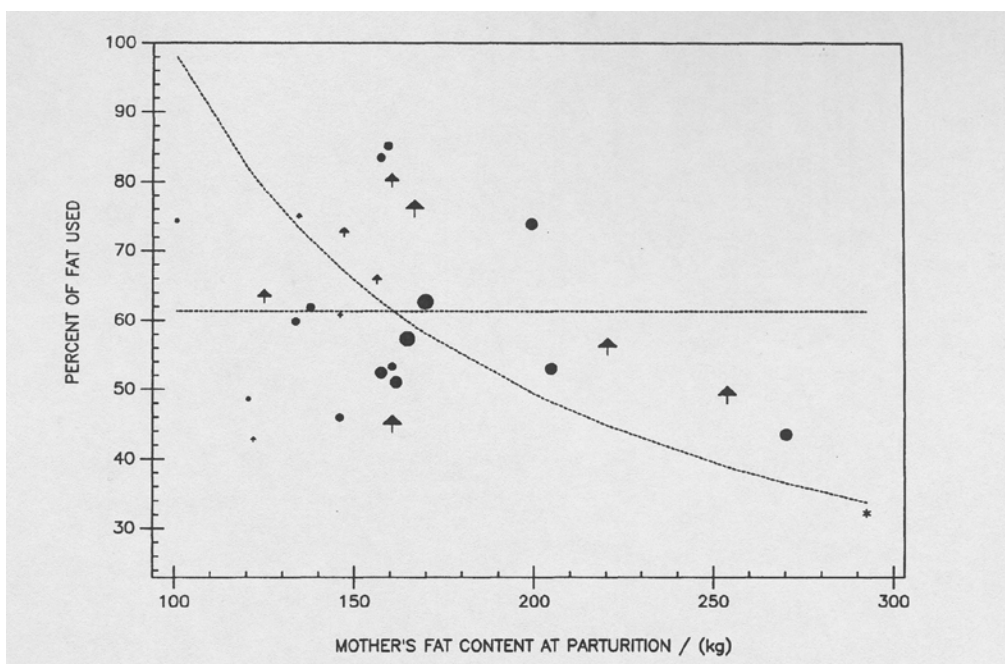


Figure 5.4: Relationship between the percentage of fat used during lactation and the mother's fat content at parturition. The dotted lines represent the two models of use as applies to fat (i.e., the curved line represents the percentage of fat expected if each female were to use the average amount, and the horizontal line is the average proportion used).⁵⁴²

⁵³⁹ Tom Arnbohm, M.A. Fedak and Peter Rothery, 'Offspring Sex Ratio in Relation to Female Size in Southern Elephant Seals, *Mirounga leonina*' in *Behavioral Ecology and Sociobiology*, Vol. 35, No. 6 (1994), pp. 373-378 at page 376.

⁵⁴⁰ *Ibid.*

⁵⁴¹ Michael A. Fedak, Tom A. Arnbohm, B. J. McConnell, C. Chambers, Ian L. Boyd, J. Harwood, and T. S. McCann, 'Expenditure, Investment, and Acquisition of Energy in Southern Elephant Seals' in *Behavioral Ecology and Sociobiology*, Vol. 35, No. 6 (1994), pp. 373-378 at page 361.

⁵⁴² M.A. Fedak, Tom Arnbohm, Ian L. Boyd, 'The Relation between the Size of Southern Elephant Seal Mothers, the Growth of Their Pups, and the Use of Maternal Energy, Fat, and Protein during Lactation' in *Physiological Zoology*, Vol. 69, No. 4 (Jul. - Aug., 1996), pp. 887-911 at page 904.

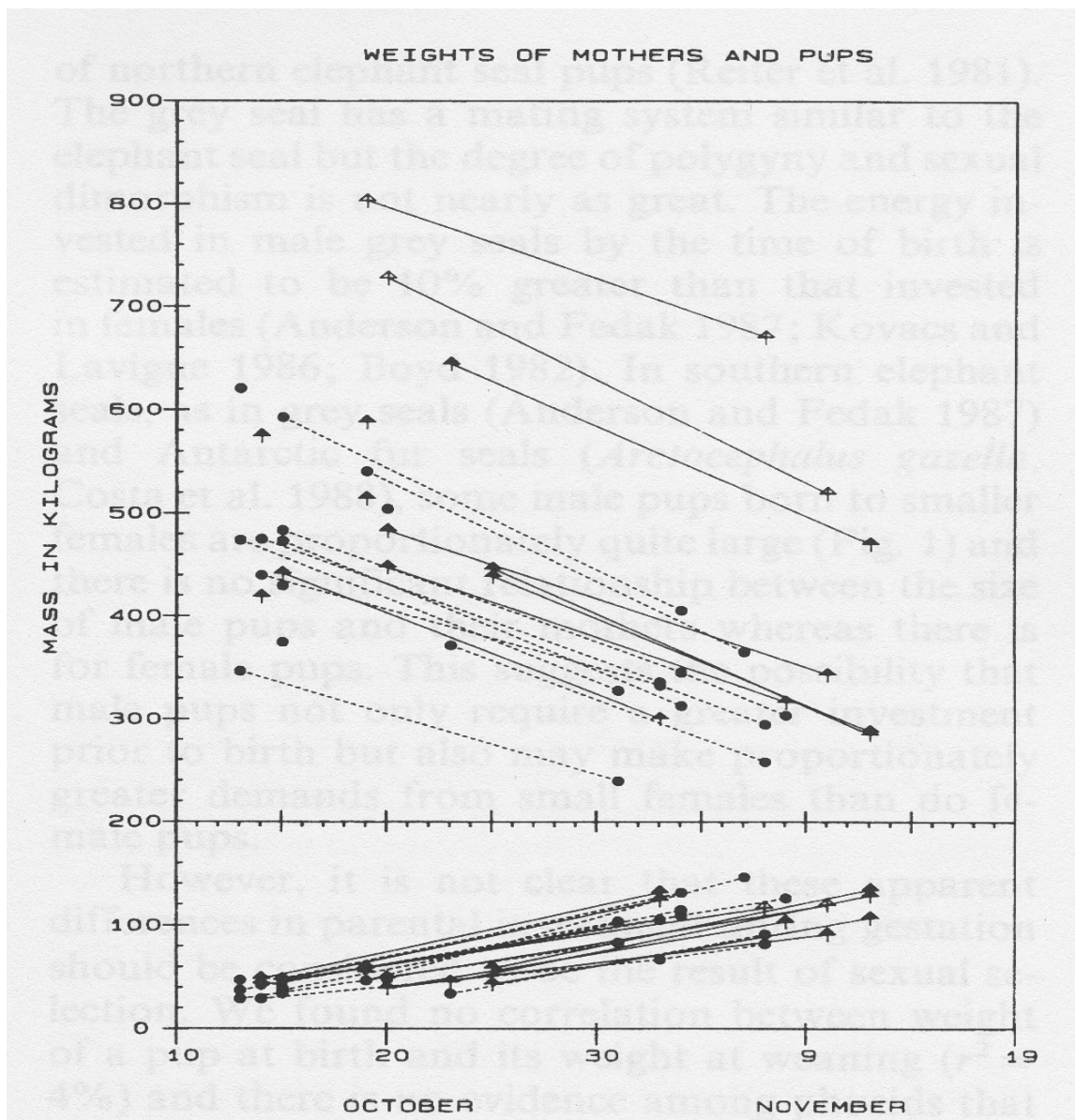


Figure 5.5: Weight changes of mother-pup pairs as a function of time (date). ● = mothers of female pups and female pups; ↑ = mothers of male pups and male pups at South Georgia in 1986.⁵⁴³

⁵⁴³ T.S. McCann, M.A. Fedak, J. Harwood, 'Parental Investment in Southern Elephant Seals, *Mirounga leonina*' in *Behavioral Ecology and Sociobiology*, Vol. 25, No. 2 (1989), pp. 81-87, at page 84.

At birth the mean weight of male southern elephant seal pups is 45.1 kg while females weigh a mean of 40.2 kg.⁵⁴⁴ This size difference does not persist for long because male and female pups suckled for the same period grow at the same rate and are not significantly different in weight at weaning (Fig. 5.6).⁵⁴⁵ However, the proportion of body mass represented by fat at birth is less than 3%.⁵⁴⁶ However, these fat reserves are quickly developed over the course of the lactation period in which pups nurse on milk that frequently contains more than 40% lipids.⁵⁴⁷ The pups on the Crozet Islands are weaned 21.8 ± 2.4 days after birth and, at weaning, weigh 119.5 ± 13.0 kg.⁵⁴⁸ Weaning mass in southern elephant seals is however highly variable, with the heaviest pups being almost three times as heavy as the lightest ones.⁵⁴⁹ The proportion of body mass represented by fat at weaning in Carlini *et al.*'s study was $37\% \pm 4\%$, and did not differ between the sexes (Fig. 5.7).⁵⁵⁰ However, after weaning, 47% of total mass loss was made up of fat.⁵⁵¹

⁵⁴⁴ A.R. Carlini, M.E.I. Márquez, S. Ramdohr, H. Bornemann, H.O. Panarello, G.A. Danerim, 'Postweaning Duration and Body Composition Changes in Southern Elephant Seal (*Mirounga leonina*) Pups at King George Island' in *Physiological and Biochemical Zoology*, Vol. 74, No. 4 (Jul. – Aug., 2001), pp. 531-540 at page 531.

⁵⁴⁵ T.S. McCann, M.A. Fedak, J. Harwood, 'Parental Investment in Southern Elephant Seals, *Mirounga leonina*' in *Behavioral Ecology and Sociobiology*, Vol. 25, No. 2 (1989), pp. 81-87 at page 81.

⁵⁴⁶ A.R. Carlini, M.E.I. Márquez, S. Ramdohr, H. Bornemann, H.O. Panarello, G.A. Danerim, 'Postweaning Duration and Body Composition Changes in Southern Elephant Seal (*Mirounga leonina*) Pups at King George Island' in *Physiological and Biochemical Zoology*, Vol. 74, No. 4 (Jul. – Aug., 2001), pp. 531-540 at page 531.

⁵⁴⁷ *Ibid.*

⁵⁴⁸ Christophe Guinnet, 'Growth from Birth to Weaning in the Southern Elephant Seal (*Mirounga leonina*)' in *Journal of Mammalogy*, Vol. No. 72, No. 3 (Aug., 1991), pp. 617-620 at page 618.

⁵⁴⁹ A.R. Carlini, M.E.I. Márquez, S. Ramdohr, H. Bornemann, H.O. Panarello, G.A. Daneri, 'Postweaning Duration and Body Composition Changes in Southern Elephant Seal (*Mirounga leonina*) Pups at King George Island' in *Physiological and Biochemical Zoology*, Vol. 74, No. 4 (Jul. – Aug., 2001), pp. 531-540 at page 531.

⁵⁵⁰ *Ibid.*

⁵⁵¹ *Ibid.*

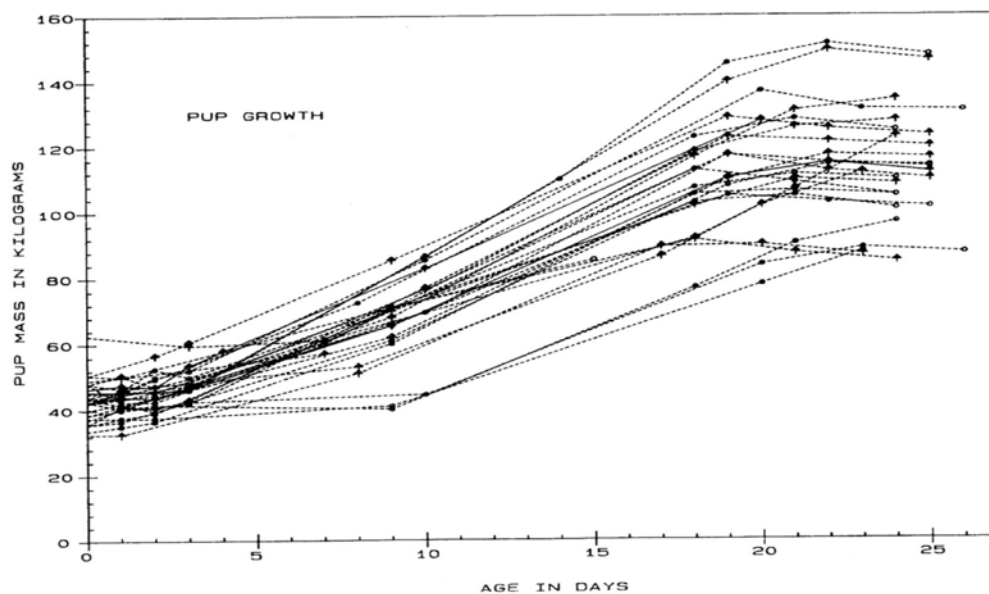


Figure 5.6: Weight changes of male (arrows) and female (circles) pups.⁵⁵²

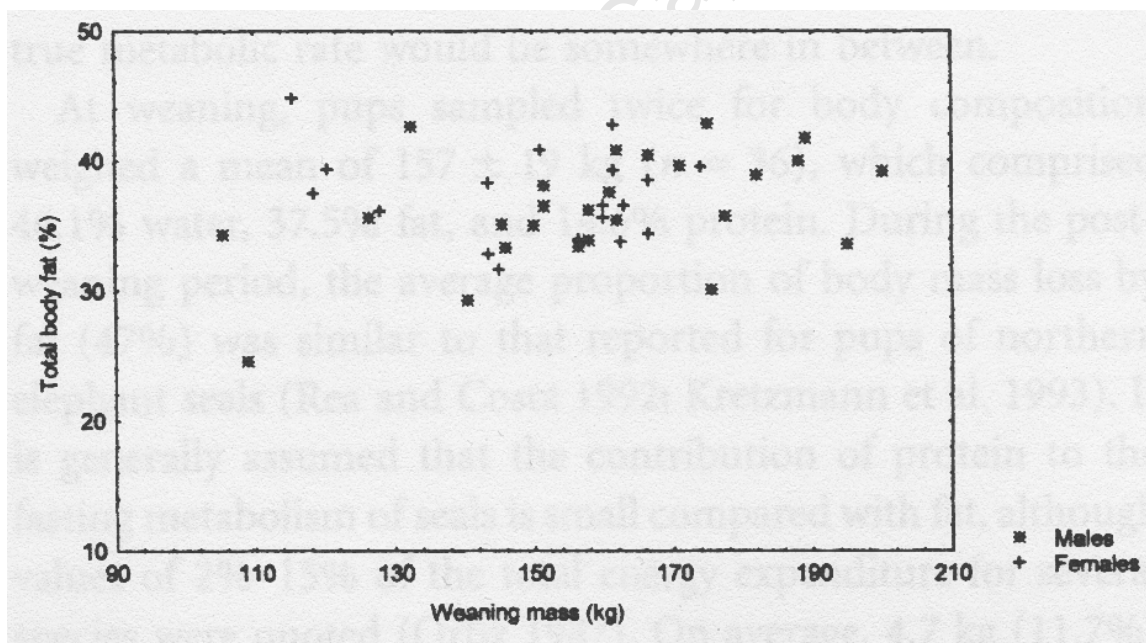


Figure 5.7: Relationship between weaning mass of pups at King George Island and percentage of total body fat.⁵⁵³

⁵⁵² Michael A. Fedak, Tom A. Arnborn, B. J. McConnell, C. Chambers, Ian L. Boyd, J. Harwood, and T. S. McCann, 'Expenditure, Investment, and Acquisition of Energy in Southern Elephant Seals' in *Behavioral Ecology and Sociobiology*, Vol. 35, No. 6 (1994), pp. 373-378 at page 358.

⁵⁵³ A.R. Carlini, M.E.I. Márquez, S. Ramdohr, H. Bornemann, H.O. Panarello, G.A. Daneri, 'Postweaning Duration and Body Composition Changes in Southern Elephant Seal (*Mirounga leonina*) Pups at King

In addition to the changes in weight experienced over the course of the breeding season, the weight of the same animal will change drastically at different points of the year due to fasting during both the breeding season and the summer moult. These large differences in weight and fat content the estimation of the number of elephant seals killed to produce the estimated 4955 tons of oil procured by Cape sea elephanting vessels a difficult task.

5.4) How many elephant seals were killed?

According to Laws,⁵⁵⁴ elephant seals yield roughly a barrel of oil per cow, and up to seven or eight for a big bull. Six barrels of oil constitute one ton.⁵⁵⁵ If we use this ratio of six barrels to a ton of oil, then the Cape sea elephanting vessels returned an estimated 29730 barrels of oil. The archival record tells us nothing about the sex ratio of elephant seals killed by the Cape gangs, so we have to rely on models to estimate the number of elephant seals killed. All of the models below are based on the assumption that the hunters did not actively target elephant seal pups due to their low fat content at birth and because most sea elephanting vessels arrived on the islands at the beginning of the breeding season and would have focused on the far bigger male and female elephant seals. We will also assume that all the males killed filled up eight barrels with oil. Hence the models estimate the minimum number of elephant seals killed.

George Island' in *Physiological and Biochemical Zoology*, Vol. 74, No. 4 (Jul. – Aug., 2001), pp. 531-540 at page 535.

⁵⁵⁴ Laws was the officer-in-charge and biologist at the Falkland Islands Dependencies Survey stations at Signy Island, South Orkney Islands, 1948–1950, and at Grytviken, South Georgia, 1951–1952.

⁵⁵⁵ Briton Cooper Busch, *The War Against the Seals: A History of the North American Seal Fishery*, at page 183 and 299.

5.4.1) Model 1: 50% of the elephant seals killed were male and the other 50% were female

If we assume that 50% of the elephant seals killed were male and the other 50% were female, then for every one male taken (8 barrels of oil) one female was taken (1 barrel of oil). So every nine barrels of oil consisted of one male and one female elephant seal.

Therefore $29730/9 = 3303$, so the number of both male and females killed was 3303 each.

That gives us a total of 6606 adult male and female elephant seals killed between 1832 and 1869. This represents an average of 174 elephant seals per year over the whole period. If we remove the eight years for which no sea elephanting was carried out on the islands, an average of 220 elephant seals were killed per year for 30 years.

We can safely assume that the majority of the pups of nursing mothers would also have died after their mothers were killed because elephant seal pups weighing less than 95 kg at weaning only have a 54% chance of surviving their first 12 months.⁵⁵⁶ Assuming that half of the cows killed had pups, we can add a further 1652 pups killed to the estimates of adults killed. This would give us a total of 8258 elephant seals killed at an average of 217 over the period 1832–1869, and an average of 275 per year for the 30 years during which sea elephanting took place on the islands.

⁵⁵⁶ Bernie McConnell, Mike Fedak, Harry R. Burton, G.H. Engelhard, Peter J.H. Reijnders, 'Movements and Foraging Areas of Naïve, Recently Weaned Southern Elephant Seal Pups', *The Journal of Animal Ecology*, Vol. 71, No. 1 (Jan., 2002), pp. 65-78, at page 66.

5.4.2) Model 2: Elephant seals killed were the same as the sex ratio

According to the research done by Guinet *et al.* the sex ratio amongst the elephant seals of the Crozet and Kerguelen Islands is 1 male per 14.6 females.⁵⁵⁷ If we assume that this ratio was also in effect throughout the time period under analysis, then for every 1 male killed (8 barrels) 14.6 females were killed (14.6 barrels). So for every 22.6 barrels returned to the Cape one male and 14.6 females were killed.

Therefore, $29730/22.6 = 1315$

Males killed = $1315 \times 1 = 1315$.

Females killed = $1315 \times 14.6 = 18411$.

So in total 19726 adult elephant seals were killed, that is an average of 519 elephant seals per year, or if we only take into account the years where Cape based vessels were present on the islands, 658 per year. If we were to again assume that half of the pups whose mothers were killed also died, this would give us pup deaths of 9205. If this is added to the total of adult elephant seals killed, we are left with a grand total of 28931 elephant seals killed at an average of 761 per year over the whole time period in question and 964 per year over the 30 years when Cape vessels were present on the islands.

⁵⁵⁷ C. Guinet, P. Jouventin and H. Weimerskirch, 'Population changes, movements of southern elephant seals on Crozet and Kerguelen Archipelagos in the last decades' in *Polar Biology* (1992) 12: 349-356 at page 353.

5.5) Conclusion

It is most likely that the total number of elephant seals killed would have been somewhere between the estimates given by these two models. Sealers would most likely have focused on killing the far larger male elephant seals as more oil could be produced from them. From the two models above we can see that anywhere between 8258 and 28931 elephant seals were killed on the Crozets at an average of between 217 and 761 per year during the period 1832–1869.

When looking at these figures, one should not forget that Cape sealers were not the only ones hunting elephant seals at the Crozets at this time. Headland lists another 78 vessels besides the Cape based sealers as ‘sealing’ or ‘whaling and sealing’ on the Prince Edward and Crozet Islands between 1832 and 1869.⁵⁵⁸ In addition to this, sea elephanting would have had other knock-on effects on the population of elephant seals on the Crozets that are impossible to measure. For example, as seen in Chapter 1, females have an 11 month gestation period so any females killed after the breeding season would also result in the death of the unborn pup. In addition to this, older female elephant seals are better mothers with a 73% weaning success rate while females three to five years old only successfully weaned 38% of their pups.⁵⁵⁹ This indicates that an increase in the mean mass of females has a positive effect on pup survival rates.⁵⁶⁰ It has also been shown that larger harems

⁵⁵⁸ See Robert K. Headland, *Chronological List of Antarctic Expeditions and Related Historical Events*.

⁵⁵⁹ Marianne Riedman, *The Pinnipeds: Seals, Sea Lions and Walruses*, at page 295.

⁵⁶⁰ Clive R. McMahon and Corey J.A. Bradshaw, ‘Harem choice and breeding experience of female southern elephant seals influence offspring survival’, *Behavioral Ecology and Sociobiology*, Vol. 55, No. 4 (Feb., 2004), pp. 349-362, at page 349.

may contribute to the survival rate of pups by providing a better rearing environment.⁵⁶¹ Since it would be safe to assume that sealers would have targeted the male elephant seals first followed by the larger female due to the increased fat content of these animals, intensive hunting on the Crozets would have lowered the average age of available breeding females on the islands and the lower numbers of elephant seals on the islands may also have led to a decrease in harem sizes, all of which would have had a negative effect on pup survival rates, thus making it more difficult to replace the elephant seals killed. Riedman's studies have also shown that the age at birth may effect the survival rate of the mother as well as the pup since the earlier a female elephant seal reproduces, the sooner she will probably die.⁵⁶² This would have also made it more difficult for elephant seal populations to recover from intensive hunting.

According to Richard Laws, the estimated total population of elephant seals on Marion Island was 2009 in 1990, that of Prince Edward Island was 782, and that of the Crozet Islands was 2023.⁵⁶³ This gives us a total of 4814 elephant seals at the Crozets. This is only a fraction of the estimated total population of 664,000 southern elephant seals (Fig. 5.8).⁵⁶⁴

⁵⁶¹ Clive R. McMahon and Corey J.A. Bradshaw, 'Harem choice and breeding experience of female southern elephant seals influence offspring survival', *Behavioral Ecology and Sociobiology*, Vol. 55, No. 4 (Feb., 2004), pp. 349-362, at page 359.

⁵⁶² Nigel Bonner, *Seals and Sea Lions of the World*, at page 135.

⁵⁶³ Richard M. Laws, 'Elephant Seals: An Introduction to the Genus' in Burney J. Le Boeuf and Richard M. Laws (eds.), *Elephant Seals: Population Ecology, Behavior, and Physiology*, at pages 58-60.

⁵⁶⁴ *Ibid*, at page 58.

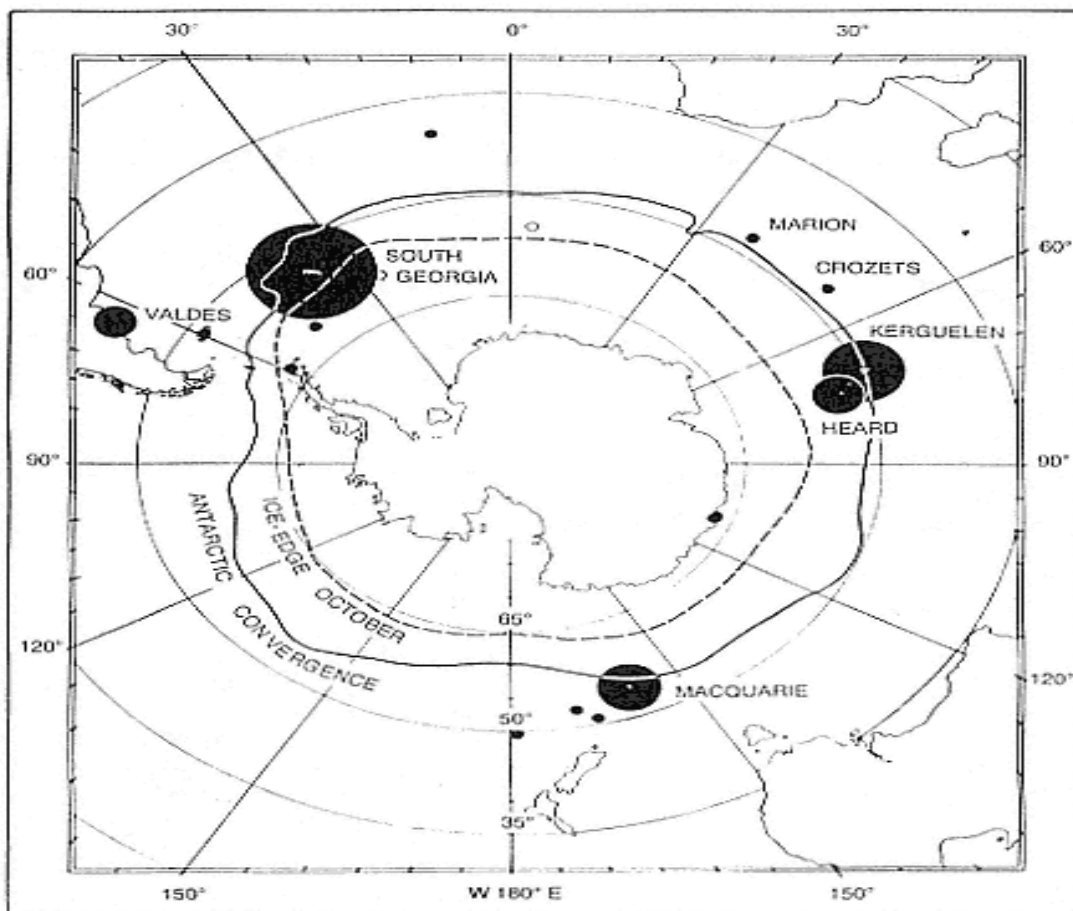


Figure 5.8: Breeding distribution of southern elephant seals in 1990. Closed circles represent known breeding colonies (area proportional to the estimated population sizes except for colonies less than 5000).⁵⁶⁵

The number of elephant seals at the Prince Edward and Crozet islands in 1990 is likely to be higher than the amount present between 1832–1869 as the modern population has remained relatively undisturbed and been allowed time to recover for a number of years. After Poppe, Schunhoff, Guttery and Company ended operations no sea elephanting voyages were recorded as going to the Crozets until the *Victoria* went to investigate the possibilities for resuming sealing on the Prince Edward Islands in 1906.⁵⁶⁶ The *Victoria*

⁵⁶⁵ Richard M. Laws, 'Elephant Seals: An Introduction to the Genus' in Burney J. Le Boeuf and Richard M. Laws (eds.), *Elephant Seals: Population Ecology, Behavior, and Physiology*, at page 50.

⁵⁶⁶ Robert K. Headland, *Chronological List of Antarctic Expeditions and Related Historical Events*, at page 237.

returned in 1909 for the Southern Sealing Company of Cape Town to establish a settlement of about 20 men at Mixed Pickle Cove, Marion Island,⁵⁶⁷ while the Kerguelen Whaling and Sealing Company made occasional sealing expeditions to the Crozets between the years 1921–1929.⁵⁶⁸ The last Cape vessel sent sea elephanting on the Crozet Islands was the *Kilfinora* in 1929 for the Irvin and Johnson (South Africa) Limited company.⁵⁶⁹ The *Kildalkey* was sent to the Prince Edward Islands by the same firm in 1930 to investigate the possibilities of resuming sealing and she spent a month working off the east coast of Marion, but throughout that time was harried so much by gales that she left the islands empty-handed.⁵⁷⁰ Hence the percentages given below should be seen as a minimum.

The models above show that the Cape sealers may have taken anywhere between 4.5% and 15.8% of the total population (in 1990) of elephant seals on the Crozets per year. Because the reason for the termination of the elephant seal oil trade in 1869 may have had more to do with a fall in the price of oil than the number of elephant seals remaining on the islands (see Chapter 3) it seems as if the number of elephant seals harvested by Cape sealers in the final five years of the trade, that is an estimated 132 tons per year between 1865–1869, was sustainable (there is only one foreign vessels recorded as visiting the Crozets during this time). This may have also been helped by the fact that the number of sealers stationed on the island between 1865–1869 was far fewer than during the Jearey era. The Jearey era had anything between 40 and 70 men at the Crozets, while

⁵⁶⁷ Robert K. Headland, *Chronological List of Antarctic Expeditions and Related Historical Events*, at page 245.

⁵⁶⁸ *Ibid.*, at page 268.

⁵⁶⁹ *Ibid.*, at page 284.

⁵⁷⁰ John H. Marsh, 'No Pathway Here', at page 52.

between 1865–1869, the number of ‘fishermen’ listed as returning from the islands ranged from 7 to 28.⁵⁷¹

This may have had to do with the fact, due to their polygynous nature – with males sometimes having harems of up to 100 females – males killed were quickly replaced. As much as 75% of the adult male elephant seal population remains at sea during the breeding season and only a small number of them is required to impregnate the adult female population.⁵⁷² Also, due to their far smaller sizes, females and pups may have been hunted to a far lesser extent than males, thus allowing the next generation to mature. So just as the biology of the elephant seal made them prime targets for sealers in the nineteenth century, the great differences in size between males and females, and between adults and pups, meant that the animals most important to the survival of the species (females and pups) often survived the hunting season in large enough numbers to ensure they did not come as close to extinction as fur seal species at the Crozets did.

⁵⁷¹ See the *Commercial Exchange Shipping List*, CC 3/7/2/1 and 3/7/2/2.

⁵⁷² Richard M. Laws, ‘History and Present Status of Southern Elephant Seal Populations’ in Burney J. Le Boeuf and Richard M. Laws (eds.), *Elephant Seals: Population Ecology, Behavior, and Physiology*, at page 49.

Conclusion

Although many authors have looked at the sea elephanting trade before, this thesis is the first to focus on the substantial Cape involvement in this trade. It is also the first to estimate the number of elephant seals harvested at the Crozets. Even Busch's detailed account of the American sealing trade does not attempt to put a figure on the number killed on the Crozets, possibly because far greater yields were being harvested elsewhere and American sealers focussed on other sub-Antarctic islands during this period.

Through a careful analysis of the Commercial Exchange Shipping Lists and the *Cape of Good Hope and Port Natal Shipping and Mercantile Gazette*, a list of all Cape based vessels involved in the Cape Town/Crozets elephant seal oil trade has been compiled.

Although some of the records do not list the quantity of oil returned to the Cape, a search through the Cape Archives for court cases and memorials involving those who took part in the sea elephanting trade has in some cases revealed the quantity of oil returned by certain vessels. This process has enabled us to get as much detail as possible regarding the amount of oil known to have been harvested by Cape sealers at the Crozets and in turn has allowed for the creation of statistical models that can estimate the amount of oil returned by vessels with no manifest with a greater degree of accuracy. These investigations are thus a crucial step in developing an accurate global census of elephant seals killed in the sub-Antarctic.

The use of statistical modelling has enabled us to estimate how much oil was returned by those vessels for which no shipping manifest was available. It is quite possible that further work in the Cape Archives may reveal yet more quantitative data concerning the sea elephant trade. Through the use of statistical modelling, we estimate that between 1832–1869, 4955 tons of elephant seal oil was taken from the Crozets by Cape sealers. This harvest led to the estimated deaths of between 8,258–28,931 elephant seals at an average of 217–761 per year over the time period in question, a remarkable figure when one considers that the estimated population of elephant seals on the Prince Edward Islands and the Crozet Islands in 1990 was only 4814. These estimates must of course be read with caution. The first estimate (8,258) is based on a model that supposes that 50% of the elephant seals killed were male and 50% were female and that half of the females killed also lost their pups. This is likely to be an underestimate if we consider the fact that far more females than males were present on the islands during the breeding season and elephant seal pups weighing less than 95 kg at weaning only have a 54% chance of surviving their first 12 months.⁵⁷³ The second estimate (28,931) is based on the research of Guinet *et al.* which suggests that the sex ratio amongst the elephant seals of the Crozet and Kerguelen Islands is 1 male per 14.6 females and is therefore likely to be a more accurate estimate of the number of elephant seals killed.⁵⁷⁴

⁵⁷³ Bernie McConnell, Mike Fedak, Harry R. Burton, G.H. Engelhard, Peter J.H. Reijnders, 'Movements and Foraging Areas of Naïve, Recently Weaned Southern Elephant Seal Pups', *The Journal of Animal Ecology*, Vol. 71, No. 1 (Jan., 2002), pp. 65-78, at page 66.

⁵⁷⁴ C. Guinet, P. Jouventin and H. Weimerskirch, 'Population changes, movements of southern elephant seals on Crozet and Kerguelen Archipelagos in the last decades' in *Polar Biology* (1992) 12: 349-356 at page 353.

Due to the extreme dimorphism and huge annual weight variations in elephant seals due to the breeding and moulting fasts, it is difficult to more precisely say how many elephant seals were killed. However, because the *Cape of Good Hope and Port Natal Shipping and Mercantile Gazette* often gave both the departure and return date of vessels to/from the Crozets, we have a basic idea of how much oil was harvested during different periods of the year. There is therefore the possibility that further research by seal biologists into the fat content of elephant seals at different points in their annual cycle may improve the accuracy of these estimates in the future.

The analysis of memorials and court cases relating to Cape sealers not only reveals the quantity of oil returned by some vessels, but also sheds light on the production process and in particular the life of sealing labour on the islands. The discovery of the only known log-book of a Cape sea elephanting voyage as an addendum to a court case for example, provides a daily diary of conditions both en route and on the islands. The reconstruction of Cape seaborne traffic to the Crozets also enables the number of workers involved in the trade to be accurately estimated. This should assist archaeologists in interpreting the material remains of sealing on the Crozets along the lines of the work of Zarankin and Senatore on sealers camps on the South Shetlands.⁵⁷⁵ Lastly, the place of sailors within the social structure of nineteenth century Cape Town remains – with the

⁵⁷⁵ Andrés Zarankin and María Ximena Senatore, 'Archaeology in Antarctica: Nineteenth-Century Capitalism Expansion Strategies', in *International Journal of Historical Archaeology*, Vol. 9, No. 1, March 2005, pp. 43–56.

exception of Hamilton's work on seamen and crime at the Cape - a remarkably under-researched topic.⁵⁷⁶

Although the thesis has illuminated only a small part of Cape Town's oceanic frontier, it demonstrates the substantial scope for further research on this forgotten frontier. Basberg and Headland have already pointed out that despite the fact that sealing was the first exploitative industry in the Antarctic region, no one has yet successfully managed to indicate the aggregate economic value and development of the industry.⁵⁷⁷ This is far too large a task for any one scholar, requiring the exhaustive inventory of many national archives. However, 'national' inventories such as this one could lead cumulatively to the global inventory envisaged by Basberg and Headland. However, for such an exercise to have more than antiquarian value, it is essential that the production site and quantity of produce be identified for each vessel. Headland and Dickson's listing of vessels passing through the Antarctic without regard to their route or cargo is a step in the wrong direction.⁵⁷⁸ A complete inventory would go some way towards helping scientists determine what the 'pristine' (pre-exploitation) seal populations in the Southern Ocean may have been.

By looking at fields such as seal biology and statistical modelling, traditionally regarded as outside the purview of the historian, this work has shown the main drivers behind the

⁵⁷⁶ Charles Hamilton, 'Seamen and crime at the Cape, 1860-1880' in *International Journal of Maritime History*, Vol. 1, Part 2, 1989, pp. 1-35.

⁵⁷⁷ Bjørn L. Basberg and Robert K. Headland, 'The 19th Century Antarctic Sealing Industry: Sources, Data and Economic Significance', in *NHH Dept. of Economics Discussion Paper No. 21/2008*,

⁵⁷⁸ See Robert K. Headland, *Chronological List of Antarctic Expeditions and Related Historical Events* and Rod Dickson, *Under the Wings of an Albatross: A Maritime History of the French Sub-Antarctic Islands. The Crozets. The Kerguelens. St. Paul and Amsterdam Islands.*

rise and fall of the Cape sea elephanting trade and its participants. It has also demonstrated that Cape involvement in the sea elephanting trade on the Crozets was sustained and substantial. The elephant seal oil trade was an international one as the Cape merchants involved in the trade, often funded by London merchant houses, exported substantial portions of their output to Britain and used an international labour force to produce it. According to Dunbabin, “[w]hen the whole interior of Australia was as little known as the other side of the moon, the remote [sub-Antarctic] islands, set in one of the stormiest seas on the globe, were better known and far more frequented than they are today”.⁵⁷⁹ Cape sealing on the Crozets suggests that the same was true for southern Africa where shortly after Dutch trekboers broke out of the Cape Colony onto the interior plateau in 1834, John Curran was already urging the Cape Government to annex the Prince Edward Islands.⁵⁸⁰ The extent of Cape participation in the sea elephanting trade shows that at least some Cape merchants were looking to the Southern Ocean rather than the African interior as a profitable frontier and the oil they imported both illuminated the streets of Cape Town and lubricated the Industrial Revolution in Britain. Further research into this oceanic frontier has the potential to provide a rich vein for further historical study.

⁵⁷⁹ D.R. Hainsworth, ‘Exploiting the Pacific Frontier: The New South Wales Sealing Industry 1800–1821’ in *The Journal of Pacific History*, Vol. 2, at page 59.

⁵⁸⁰ *Cape Archives*, CO Vol. No. 3992 Ref 139, Memorial received. John Curran. Protection of the Fisheries Established by Him on the Prince Edward Islands. 1837.

Appendix A

Vessel	Agent	Destination	Date of arrival in Table Bay	Size (in tons)	Cargo ⁵⁸¹	Elephant seal oil returned (in tons)	Estimated total of elephant seal oil returned (in tons) ⁵⁸²
<i>Flamingo</i>	Thomson and Co.	Crozets	15/06/1832	80	Oil	Unknown	33
<i>George 4th</i>	Liesching and Co.	Crozets	Unknown	56		Unknown	23
<i>Flamingo</i>	Thomson and Co.	Crozets	13/03/1833	90	Oil	Unknown	37
<i>Mary</i>	Liesching and Co.	Crozets	16/05/1833	129	1567 gallons	7	7
<i>Mary</i>	Liesching and Co.	Crozets	Wrecked	129		Wrecked	0
<i>St. Helena</i>	Liesching and Co.	Crozets	27/12/1833	142	60 tons of oil	60	60
<i>William Shand</i>	Prince and Co.	Crozets	02/08/1834	285	Oil	Unknown	116
<i>Matchless</i>	Ross and Co.	Crozets	15/12/1834	188	10 tons oil, 2 tons blubber	10	10
<i>William Shand</i>	Prince and Co.	Crozets	01/01/1835	285	Oil	Unknown	116
<i>Regent Packet</i>	John Jearey		13/12/1838	113	25 tons of oil	25	25
<i>Regent Packet</i>	John Jearey		19/06/1839	112	Oil	Unknown	46
<i>Regent Packet</i>	John Jearey	Crozets	01/11/1839	112	Oil	Unknown	46
<i>Regent Packet</i>	John Jearey	Crozets	13/02/1840	112	242 csks S.E. Oil	80	80
<i>Regent Packet</i>	John Jearey	Crozets	14/11/1840	112	160 csks S.E. Oil	62	62
<i>Regent Packet</i>	John Jearey	Crozets	23/05/1841	112	Oil	Unknown	46
<i>Hero</i>	John Jearey		21/12/1841	84	35 tons S.E. Oil	35	35
<i>Regent Packet</i>	John Jearey	Crozets	21/12/1841	112	S.E. Oil	35	35
<i>Regent Packet</i>	John Jearey		26/03/1842	112	S.E. Oil	Unknown	46

⁵⁸¹ This column lists the cargo of the vessels as enumerated in the *Cape of Good Hope Shipping List* and the *Cape of Good Hope and Port Natal Shipping and Mercantile Gazette*.

‘S.E. Oil’ is an abbreviation for ‘Sea Elephant Oil’.

⁵⁸² Voyages where the amount of oil returned has been estimated using the model described in Chapter 5 are in bold.

<i>Regent Packet</i>	John Jearey	Crozets	03/08/1842	112	32 csks S.E. Oil	11	11
<i>Regent Packet</i>	John Jearey	Crozets	05/11/1842	112	171 csks S.E. Oil	45	45
<i>Hero</i>	John Jearey	Crozets	19/12/1842	84	162 csks S.E. Oil	50	50
<i>Regent Packet</i>	John Jearey	Crozets	23/02/1843	112	191 csks S.E. Oil	63	63
<i>Hero</i>	John Jearey	Crozets	07/04/1843	84	151 csks S.E. Oil	50	50
<i>Regent Packet</i>	John Jearey	Crozets	01/07/1843	112	194 csks S.E. Oil	45	45
<i>Regent Packet</i>	John Jearey	Crozets	01/11/1843	112	105 csks S.E. Oil	35	35
<i>Louisa</i>	Richard Fryer and Co.		26/11/1843	60	Oil	Unknown	24
<i>Ghika</i>	John Jearey	Crozets	30/11/1843	174	170 csks S.E. Oil	56	56
<i>Regent Packet</i>	John Jearey	Crozets	09/03/1844	112	150 csks S.E. Oil	50	50
<i>Ghika</i>	John Jearey	Crozets	15/03/1844	174	100 butts, 70 pchns and 58 hhds S.E. Oil	85	85
<i>Regent Packet</i>	John Jearey	Crozets	22/09/1844	112	Oil	Unknown	46
<i>Regent Packet</i>	John Jearey	Crozets	05/12/1844	112	153 csks S.E. Oil	50	50
<i>Ghika</i>	John Jearey	Crozets	31/01/1845	174	226 csks S.E. Oil	75	75
<i>Regent Packet</i>	John Jearey	Crozets	Wrecked	112		Wrecked	0
<i>Courier</i>	John Jearey		10/10/1845	136	124 csks S.E. Oil	41	41
<i>Ghika</i>	John Jearey	Crozets	17/01/1846	174	310 csks S.E. Oil	102	102
<i>Courier</i>	John Jearey	Crozets	16/01/1846	136	156 csks S.E. Oil	52	52
<i>Courier</i>	John Jearey	Crozets	21/05/1846	136	232 csks S.E. Oil	77	77
<i>Vigilant</i>	S.A. Whaling Company	Her tender, Maid of Mona, was lost on East Island, Crozets.	26/03/1846	404	1575 brls S.E. Oil, 200 brls Black Oil	263	263
<i>Courier</i>	John Jearey	Crozets	21/12/1846	136	265 csks S.E. Oil	88	88
<i>Osborne</i>	John Jearey	Crozets	16/04/1847	197	403 csks S.E. Oil	140	140

<i>Courier</i>	John Jearey	Crozets	07/10/1847	136	98 csks S.E. Oil (British taking) 22 csks S.E. Oil (Foreign)	32	32
<i>Osborne</i>	John Jearey	Crozets	26/09/1847	197	Ballast	0	0
<i>Courier</i>	John Jearey		08/01/1848	136	268 csks S.E. Oil	88	88
<i>Courier</i>	John Jearey	Crozets	18/04/1848	136	176 csks Oil	58	58
<i>Mountain Maid</i>	John Jearey	Prince Edward Island	11/04/1848	193	91 csks Oil, 7 csks Sea Skins	30	30
<i>Courier</i>	John Jearey		07/09/1848	136	340 csks S.E. Oil	112	112
<i>Kate</i>	John Jearey	Crozets	03/12/1848	85	59 csks S.E. Oil	18	18
<i>Courier</i>	John Jearey	Crozets	03/12/1848	136	95 csks S.E. Oil	40	40
<i>St. Helena</i>	John Jearey	Crozets		142	Sent to bring back a cargo of S.E. pups		0
<i>Kate</i>	John Jearey	Crozets	23/02/1849	85	29 csks S.E. Oil, 8 csks Seal Skins	10	10
<i>Courier</i>	John Jearey	Crozets	08/03/1849	136	284 csks S.E. Oil	94	94
<i>Courier</i>	John Jearey	Crozets	27/06/1849	136	108 csks S.E. Oil	50	50
<i>St. Helena</i>	John Jearey		16/09/1849	142	9 csks Whale Oil, 4 bdls Bone		0
<i>Courier</i>	John Jearey	Crozets	10/11/1849	136	148 csks S.E. Oil	49	49
<i>St. Helena</i>	John Jearey	Crozets	14/01/1850	142	193 csks S.E. Oil	64	64
<i>Susan</i>	John Jearey	Crozets	08/02/1850	101	159 csks S.E. Oil, 20 bdls Whale Oil	52	52
<i>Courier</i>	John Jearey	Crozets	07/03/1850	136	209 csks S.E. Oil	69	69
<i>St. Helena</i>	John Jearey	Crozets	15/07/1850	142	90 csks S.E. Oil	30	30
<i>Susan</i>	John Jearey	Crozets	Wrecked	101	Wrecked	Wrecked	0

<i>United States</i>	John Jearey		17/02/1850	244	650 brls S.E. Oil	108	108
<i>Courier</i>	John Jearey	Crozets	19/08/1850	136	40 csks S.E. Oil	13	13
<i>St. Helena</i>	John Jearey	Crozets	05/10/1850	142	Oil	Unknown	58
<i>Courier</i>	John Jearey	Crozets	25/12/1850	136	60 tons S.E. Oil	60	60
<i>George Henry Harrison</i>	John Jearey		04/03/1851	135	65 tons S.E. Oil	65	65
<i>St. Helena</i>	John Jearey	Crozets	18/03/1851	142	150 csks S.E. Oil	50	50
<i>Courier</i>	John Jearey	Crozets	16/05/1851	136	51 csks S.E. Oil, 2 csks containing 105 prime Seal Skins	17	17
<i>Conservative</i>	John Jearey	Crozets	10/12/1851	147	275 csks Oil, and 2 sea lions	105	105
<i>Courier</i>	John Jearey	Crozets	02/02/1852	136	45 tons S.E. Oil	45	45
<i>Conservative</i>	John Jearey	Crozets	23/03/1852	147	213 csks S.E. Oil, 13 Seal Skins, and 1 sea elephant	70	70
<i>Conservative</i>	John Jearey	Crozets	27/11/1852	147	Oil	Unknown	60
<i>Conservative</i>	John Jearey		18/02/1853	147	Fuel	Unknown	60
<i>Conservative</i>	John Jearey	Crozets	25/06/1853	147	45 tons S.E. Oil	45	45
<i>Apollo</i>	John Jearey	Crozets	03/03/1854	190	215 butts S.E. Oil	100	100
<i>Apollo</i>	John Jearey	Crozets	Unknown	190		Unknown	78
<i>Conservative</i>	John Jearey	Crozets	19/04/1855	147	80 tons of Oil	80	80
<i>Charles Molloy</i>	John Jearey		02/02/1856	215	45 tons S.E. Oil	45	45
<i>Conservative</i>	John Jearey	Wrecked at Prince Edward Island	Wrecked	147		Wrecked	0
<i>Anne</i>	R.P. Dobie and Co.	Crozets	28/03/1856	99	97 csks Oil and 2 csks Sealskins	32	32

<i>Fox</i>	Spence and Co.	Prince Edward's Island	13/11/1856	51	27 csks Oil, 1 csk Sealskins	9	9
<i>Charlotte</i>	De Pass, Spence and Co.		01/02/1857	78	60 csks Oil	20	20
<i>Maria</i>	John Jearey	Crozets	Wrecked	120	Wrecked	Wrecked	0
<i>Eblana</i>	De Pass, Spence and Co.	Crozets	20/02/1858	138	190 csks Oil	63	63
<i>Flora</i>	Thomson, Watson and Co.	Prince Edward Island	13/01/1858	152	45 tons S.E. Oil	45	45
<i>Prince</i>	Poppe and Co.	Crozets	07/10/1865	123	In Ballast	0	0
<i>Guadelquiver</i>	Goodliffe, Smart and Searle		01/12/1865	113	In Ballast	0	0
<i>Prince</i>	Poppe and Co.		17/12/1865	123	Oil	Unknown	50
<i>Guadelquiver</i>	Goodliffe and Co.		22/03/1866	113	Oil	Unknown	46
<i>Prince</i>	Poppe and Co.	Crozets	26/04/1866	123		Unknown	50
<i>Guadelquiver</i>	Goodliffe and Co.	Crozets	19/05/1866	113	Oil	Unknown	46
<i>Prince</i>	Poppe and Co.		Wrecked	123	Wrecked	Wrecked	0
<i>Guadelquiver</i>	Goodliffe and Co.	Crozets	02/10/1866	113	Oil	Unknown	46
<i>Guadelquiver</i>	Goodliffe and Co.		06/02/1867	113	Oil	Unknown	46
<i>Esther</i>	Poppe and Co.	Crozets	22/02/1867	134	Oil	Unknown	55
<i>Esther</i>	Poppe and Co.		14/05/1867	134	Oil	Unknown	55
<i>Guadelquiver</i>	Goodliffe and Co.		08/06/1867	113	Oil	Unknown	46
<i>Esther</i>	Poppe and Co.	Crozets	25/08/1867	134	Ballast	0	0
<i>Liffey</i>	Goodliffe and Co.	Crozets	05/11/1867	134	Oil	Unknown	55
<i>Esther</i>	Poppe and Co.	Crozets	25/03/1868	134	Oil	Unknown	55
<i>Liffey</i>	Goodliffe and Co.		12/06/1868	134	Oil	Unknown	55
<i>Esther</i>	Poppe and Co.		28/12/1869	134	Oil	Unknown	55
TOTAL							4955

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The list of vessels involved in the Cape Town/Crozets elephant seal oil trade listed in Appendix A has been compiled for the most part from an extensive search through the *Cape of Good Hope Shipping List* (1840–1843) as well as the *Cape of Good Hope and Port Natal Shipping and Mercantile Gazette* (1844–1861) for any vessels and people involved in this trade and any mention of the sea elephanting trade. The gaps in this record were filled through information obtained in the Commercial Exchange Shipping List, the African Court Calendar, and the Blue Books for the Cape of Good Hope. The bibliography has been split up between primary sources and secondary sources. The primary sources found in the Cape Town Archives Repository have been listed alphabetically according to their source code and volume number, while all secondary sources are listed alphabetically according to the surname of the author.

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