

# Range expansion of the red-billed quelea, *Quelea quelea*, into the Western Cape, South Africa

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**T**HE RED-BILLED QUELEA, *QUELEA QUELEA*, is a serious problem bird of cultivated grain throughout Africa. It has expanded its range in different parts of southern Africa. Recent sightings over the last seven years in the Western Cape indicate that this species is appearing more frequently here. If queleas do become established in the Western Cape as a breeding species, this could have a serious impact on the economy of the wheat farmers.

The red-billed quelea, *Quelea quelea*, (hereafter referred to as quelea) is a serious problem bird of agricultural crops through most of Africa.<sup>1</sup> Within South Africa alone, millions are killed annually in control operations, but this appears to have little effect on population size.<sup>1</sup> Since the 1980s, it has expanded its range into regions of southern Africa where it was previously uncommon,<sup>2</sup> including the Eastern Cape.<sup>3</sup> Its breeding range extended to the westernmost point of South Africa in 1996<sup>4</sup> and queleas have increased in

abundance in the Midlands of KwaZulu-Natal<sup>5</sup> and in the Karoo.<sup>6</sup> These expansions have been facilitated by changes in agricultural practices, for example, the provision of livestock feedlots and water sources.<sup>3</sup> Brown and Tinney<sup>7</sup> suggested that temperatures encountered in South Africa's agricultural regions do not limit further possible range expansion. This note reviews recent records of queleas in the Western Cape and considers the likelihood that the species will increase to problem bird status in this region.

The quelea bibliography<sup>8</sup> and subsequent publications up to March 2006, and the bird ringing data curated at the South African Bird Ringing Unit (SAFRING), were searched for records of quelea in the Western Cape.

## Results and discussion

In total, 41 records of quelea in the Western Cape were found (Fig. 1). Ten of these records were within 250 km of Cape Town (Table 1): one is from 1946 and the

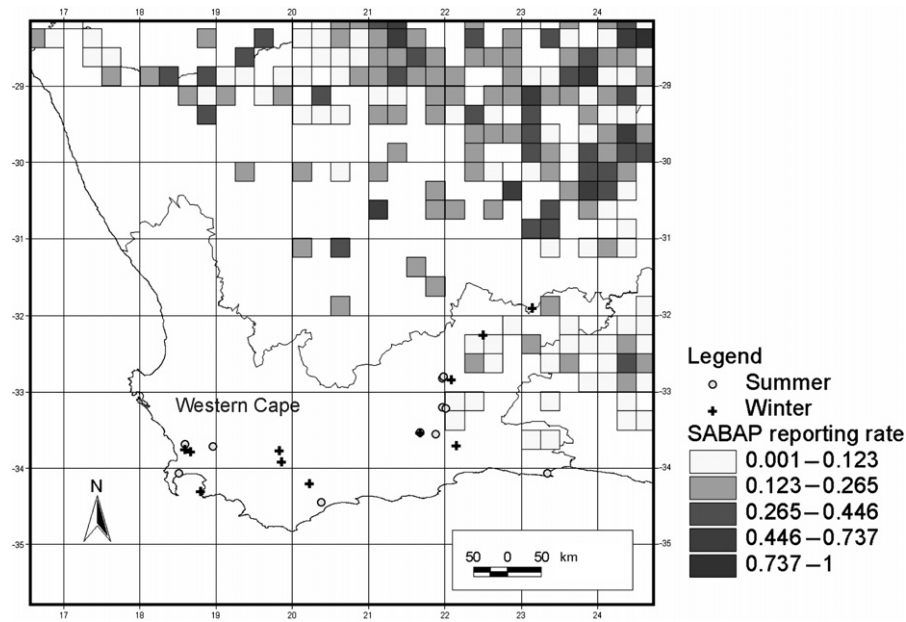
remainder since 1999. There does not seem to be a seasonal pattern because records are scattered through the year (Table 1). In spite of intensive fieldwork in the Western Cape for two atlas projects in 1982–86<sup>9</sup> and 1987–91,<sup>10</sup> there were no records of quelea west of Prince Albert (22°E) in the Western Cape during these periods.

As yet, queleas have not been recorded breeding in the Western Cape, although 42 juveniles were ringed in Calitzdorp in 2005 (Table 2: [click here to view table online](#)); the hatching site is unknown at present. Claassen<sup>6</sup> stated that queleas had increased in the Karoo over the previous 5–10 years because of available grain at feedlots on ostrich farms, especially around Leeu Gamka (J. Claassen, *in litt.*). Claassen<sup>6</sup> considered that there were suitable breeding sites in reeds and thorn-trees along rivers and reported nests on a farm 15 km north of Leeu Gamka (J. Claassen, *in litt.*). Nests do not prove breeding<sup>11</sup> but it is only a matter of time before evidence of breeding will be found in the Western Cape.

Increased search effort following the start of the national bird atlas project in 1987<sup>10</sup> was thought to have explained at least some of the range expansion of the quelea in the Eastern Cape, though this expansion may have occurred prior to the atlas period.<sup>3</sup> In the Western Cape, however, intensive fieldwork, in the form of

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**Fig. 1.** Records of red-billed quelea in the Western Cape. Also shown are SABAP records (quarter-degree grid cells<sup>2</sup>), and the boundary of the Western Cape province.

both bird ringing and atlasing, took place before the number of quelea records started increasing. Ringing effort in the Western Cape has been high over the last decade with approximately 3000 weavers (southern masked weaver, *Ploceus velatus*; Cape weaver *P. capensis*; southern red bishop, *Euplectes orix*; and yellow bishop, *E. capensis*) ringed annually since 1994 (SAFRING unpublished data). These species occur in the same habitats as queleas but, in spite of this effort, the first quelea was not ringed in the Western Cape until 2001. Thus the recent increase in quelea records cannot be dismissed as being due to increased vigilance. Given the propensity of the species to grow to problem bird proportions, it is important to maintain surveillance to determine whether the quelea establishes itself as a breeding species in the Western Cape. What, if any, action needs to be taken to prevent or slow down this process should be carefully planned by both conservation and agricultural authorities.

The main adaptation the quelea needs to make to establish successfully in the

Western Cape is the transition from breeding in a summer rainfall region to a winter rainfall one. However, this transition has been made by a variety of species that have expanded their ranges into the Western Cape during the 20th century (listed, for example, by Hockey *et al.*<sup>9</sup>). The most closely related species that made this transition is the southern masked weaver, which started breeding in the Western Cape in the 1940s,<sup>12</sup> and became a common breeding species within four decades.<sup>13</sup> Making this adjustment is unlikely to be a problem to the red-billed quelea.

The Overberg and Swartland regions of the Western Cape are important agricultural areas, especially for wheat. If queleas do become established and increase to problem bird proportions, this would have a major impact on wheat production within the region.

Peter Jones and anonymous referees gave helpful comments on earlier drafts of this article. SABIF provided funds for entering ringing data electronically. Michael Brooks prepared the map. SAFRING's sponsors are BirdLife South Africa, the Namibian

Ministry of Environment and Tourism, the Tony and Lisette Lewis Foundation, and the Department of Environmental Affairs and Tourism. The University of Cape Town provided accommodation and services. L.G.U. acknowledges support from the NRF and the University of Cape Town Research Committee.

1. Bruggers R.L. and Elliott C.C.H. (eds) (1989). *Quelea quelea: Africa's pest bird*. Oxford University Press, Oxford.
2. Mundy P.J. and Herremans M. (1997). Redbilled quelea *Quelea quelea*. In *The Atlas of Southern African Birds*, vol. 2: Passerines, eds J.A. Harrison, D.G. Allan, L.G. Underhill, M. Herremans, A.J. Tree, V. Parker and C.J. Brown, pp. 573–575. BirdLife South Africa, Johannesburg.
3. Whittington-Jones C.A. (1997). Apparent range expansion of the redbilled quelea *Quelea quelea* in the Eastern Cape Province of South Africa. *Ostrich* 68, 97–103.
4. Underhill L.G. (1998). Redbilled queleas breeding at the Orange River estuary. *Bird Numbers* 7(2), 23.
5. Berruti A. (1995). An investigation into the biology of the redbilled quelea *Quelea quelea* in the Bergville–Winterton area of KwaZulu-Natal. Durban Natural History Museum, unpubl. report.
6. Claassen J. (2002). Voëls brei gebiede suidwaarts uit. *Promerops* 250, 26.
7. Brown C.R. and Tinney G.M. (1998). Thermal relations of red-billed quelea: implications for extending distribution. *Ostrich* 69, 379.
8. Oschadleus H.D. (2001). Bibliography of the African quelea species. Avian Demography Unit Research Report, Cape Town.
9. Hockey P.A.R., Underhill L.G., Neatherway M. and Ryan P.G. (1989). Atlas of the birds of the south-western Cape. Cape Bird Club, Cape Town.
10. Harrison J.A., Allan D.G., Underhill L.G., Herremans M., Tree A.J., Parker V. and Brown C.J. (eds) (1997). *The Atlas of Southern African Birds*, vol. 1. Passerines, vol. 2. Non-passerines. BirdLife South Africa, Johannesburg.
11. Oschadleus H.D. (1989). Redbilled queleas in Dundee. *Bokmakierie* 41, 36–37.
12. Roberts A. (1941). Notes on some birds of the Cape Province. *Ostrich* 11, 112–135.
13. Brooke R.K. (1985). Range expansion in the Cape Province, and the problem of the type locality of the masked weaver *Ploceus velatus* Vieillot. *Ostrich* 56, 214–215.
14. Gill E.L. (1952). Some first records for the Cape. *Bokmakierie* 4, 27–29.
15. Graaf J. (1999). Red-billed quelea at Vrolijkheid. *Promerops* 239, 20.
16. Ellis B. (2001). Sightings. Red-billed quelea. *Promerops* 246, 18.
17. Ayre A. and Jones H. (2002). CBC rarities report. Red-billed quelea. *Promerops* 249, 19.
18. Schmidt O. (2001). Red-billed queleas moving south? *Promerops* 248, 23–24.
19. Louw K. (2003). Sightings. *Promerops* 253, 20–21.
20. Tygerberg Ringing Unit (2003). Sightings. Red-billed quelea. *Promerops* 255, 18.
21. McCall M. and Tygerberg Ringing Unit (2004). Sightings. Red-billed quelea. *Promerops* 258, 19.
22. Carter J. (2005). Sightings. *Promerops* 264, 20.

**Table 1.** Published records and bird ringing records (SAFRING database, ringer indicated) of red-billed quelea within 250 km of Cape Town, Western Cape, listed chronologically. Click here to view all Western Cape records.

Reference	Date	Locality	Coordinates	Notes
Gill (1952) <sup>14</sup>	1946	Zeekoeivlei	34°05' S 18°30' E	One flock
Graaf (1999) <sup>15</sup>	22 Mar 1999	Vrolijkheid Nature Reserve	33°55' S 19°52' E	Small flock
Ellis (2001) <sup>16</sup>	21 Feb 2001	Kuiperskraal farm	33°45' S 18°36' E	Ringed 1 male
Ayre and Jones (2002) <sup>17</sup>	1–23 Mar 2001	Rooi-Els	34°17' S 18°49' E	Flock of 11 birds
Schmidt (2001) <sup>18</sup>	7 Apr 2001	Robertson	33°48' S 19°53' E	Small flock
Louw (2003) <sup>19</sup>	5 Oct 2002	De Hoop Nature Reserve	34°27' S 20°23' E	Flock of 15 birds
Tygerberg Ringing Unit (2003) <sup>20</sup>	5 Apr 2003	Groot Fisantekraal farm	33°47' S 18°40' E	Ringed 1 bird
McCall (2004) <sup>21</sup>	31 Dec 2003	Goedeontmoeting farm	33°41' S 18°36' E	One ringed male
SAFRING, G. Scholtz	27 Nov 2004	Paarl Bird Sanctuary	33°43' S 18°58' E	Ringed 2 birds
Carter (2005) <sup>22</sup>	30 Jul 2005	Uitvlug farm, NE of Protom	34°12' S 20°14' E	150–200 birds

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**Table 2.** Published records and bird ringing records (SAFRING database, ringer indicated) of red-billed quelea in the Western Cape, listed chronologically.

Reference	Date	Locality	Coordinates	Notes
Gill (1952) <sup>1</sup>	1946	Zeekoeivlei	34°05'S 18°30'E *	One flock
Martin et al. (1988) <sup>2</sup>	Mar 1986	Karoo National Park	32°15'S 22°30'E	Flock of 12 birds
Schmidt (2001) <sup>3</sup>	15 Dec 1998	S of Leeu Gamka	32°48'S 21°59'E	Two birds
Graaf (1999) <sup>4</sup>	22 Mar 1999	Vrolijkheid Nature Reserve	33°55'S 19°52'E *	Small flock
Schwarzenberger and Dean (2003) <sup>5</sup>	Sep–Nov 1999	Prince Albert	33°13'S 22°01'E	Seen
SAFRING, J.J. Claassen	6 Jan 2001	Welgemoed, near Leeu Gamka	32°49'S 21°58'E	Ringed 6 mm and 4 ff
Ellis (2001) <sup>6</sup>	21 Feb 2001	Kuiperskraal farm	33°45'S 18°36'E *	Ringed 1 male
Ayre and Jones (2002) <sup>7</sup>	1–23 Mar 2001	Rooi-Els	34°17'S 18°49'E *	Flock of 11 birds
Schmidt (2001) <sup>3</sup>	7 Apr 2001	Robertson	33°48'S 19°53'E *	Small flock
SAFRING, P. Coetzee	14 Apr 2001	Kandelaarsrust, Oudtshoorn	33°42'S 22°09'E	Ringed 1 adult
Schmidt (2001) <sup>3</sup>	(14+) April 2001	Oudtshoorn	33°42'S 22°09'E	Flock of 1000 birds
Martin et al. (2002) <sup>8</sup>	3 Dec 2001	Red Stone Hills farm, near Calitzdorp	33°33'S 21°53'E	Flock of 200 birds
Goodwin (2000) <sup>9</sup>	Undated record	Near Plettenberg Bay airport	34°05'S 23°19'E	'Appeared briefly'
SAFRING, J.J. Claassen	26 Jan 2002	Welgemoed, near Leeu Gamka	32°49'S 21°58'E	Ringed 9 mm and 6 ff
Oschadleus and Shaw (2002) <sup>10</sup>	21 Apr 2002	Three Sisters	31°54'S 23°09'E	Roost of 50–100 birds
Louw (2003) <sup>11</sup>	21 Sep 2002	Near Leeu Gamka	32°48'S 21°59'E	Seen
Louw (2003) <sup>11</sup>	21 Sep 2002	E of Prince Albert	33°13'S 22°01'E	Seen
Louw (2003) <sup>11</sup>	5 Oct 2002	De Hoop Nature Reserve	34°27'S 20°23'E *	Flock of 15 birds
Tygerberg Ringing Unit (2003) <sup>12</sup>	5 Apr 2003	Groot Fisantekraal farm	33°47'S 18°40'E *	Ringed 1 bird
SAFRING, T. Robertson	4 May 2003	Calitzdorp	33°32'S 21°41'E	Ringed 7 ff
SAFRING, T. Robertson	9 May 2003	Calitzdorp	33°32'S 21°41'E	Ringed 2 birds
SAFRING, J.J. Claassen	10 Aug 2003	8 km W of Prince Albert	33°12'S 21°58'E	Ringed 3 ff
SAFRING, T. Robertson	23 Aug 2003	Calitzdorp	33°32'S 21°41'E	Ringed 2 birds
McCall (2004) <sup>13</sup>	31 Dec 2003	Goedeontmoeting farm	33°41'S 18°36'E *	One ringed male
SAFRING, M. Ford	24 May 2004	Janwillemfontein farm	32°50'S 22°05'E	Ringed 2 ff
Hadaker (2005) <sup>14</sup>	24 Sep 2004	S of Leeu Gamka	32°48'S 21°59'E	Seen
SAFRING, T. Robertson	31 Oct 2004	Calitzdorp	33°32'S 21°41'E	Ringed 1 bird
SAFRING, G. Scholtz	27 Nov 2004	Paarl Bird Sanctuary	33°43'S 18°58'E *	Ringed 2 birds
SAFRING, T. Robertson	28 Dec 2004	Calitzdorp	33°32'S 21°41'E	Ringed 3 birds
SAFRING, T. Robertson	5 Jan 2005	Calitzdorp	33°32'S 21°41'E	Ringed 2 ff
SAFRING, T. Robertson	7 Jan 2005	Calitzdorp	33°32'S 21°41'E	Ringed 1 juv
SAFRING, T. Robertson	9 Jan 2005	Calitzdorp	33°32'S 21°41'E	Ringed 6 juv
SAFRING, T. Robertson	17 Feb 2005	Calitzdorp	33°32'S 21°41'E	Ringed 1 juv
SAFRING, T. Robertson	21 Feb 2005	Calitzdorp	33°32'S 21°41'E	Ringed 21 juv
SAFRING, T. Robertson	24 Feb 2005	Calitzdorp	33°32'S 21°41'E	Ringed 3 juv
SAFRING, T. Robertson	2 Mar 2005	Calitzdorp	33°32'S 21°41'E	Ringed 1 juv
SAFRING, T. Robertson	15 Mar 2005	Calitzdorp	33°32'S 21°41'E	Ringed 8 juv
SAFRING, T. Robertson	16 Mar 2005	Calitzdorp	33°32'S 21°41'E	Ringed 1 juv
SAFRING, T. Robertson	29 Jun 2005	Calitzdorp	33°32'S 21°41'E	Ringed 1 female
Carter (2005) <sup>14</sup>	30 Jul 2005	Uitvlug farm, NE of Proteem	34°12'S 20°14'E *	150–200 birds
Boer (2006) <sup>16</sup>	27 Nov 2005	Prince Albert area	33°13'S 22°01'E	Seen

Coordinates with \* indicate records within 250 km of Cape Town.  
mm = males, ff = females, juv = juveniles.

- Gill E.L. (1952). Some first records for the Cape. *Bokmakierie* 4, 27–29.
- Martin R., Martin J., Martin E. and Braack H.H. (1988). A preliminary list of the birds of the Karoo National Park. *Koedoe* 31, 203–226.
- Schmidt O. (2001). Red-billed queleas moving south? *Promerops* 248, 23–24.
- Graaf J. (1999). Red-billed quelea at Vrolijkheid. *Promerops* 239, 20.
- Schwarzenberger A. and Dean W.R.J. (2003). The influence of vegetation structure on bird communities in a Karoo village, South Africa. *Ostrich* 74, 209–216.
- Ellis B. (2001). Sightings. Red-billed quelea. *Promerops* 246, 18.
- Ayre A. and Jones H. (2002). CBC rarities report. Red-billed quelea. *Promerops* 249, 19.
- Martin R., Martin E., Tyler D. and Pepler D. (2002). More sightings of red-billed queleas. *Promerops* 250, 26.
- Goodwin R. (2000). Birds of Bitou (Greater Plettenberg Bay area). Private publication, September 2000.
- Oschadleus D. and Shaw K. (2002). Red-billed quelea at Three Sisters. *Promerops* 252, 17.
- Louw K. (2003). Sightings. *Promerops* 253, 20–21.
- Tygerberg Ringing Unit (2003). Sightings. Red-billed quelea. *Promerops* 255, 18.
- McCall M. and Tygerberg Ringing Unit (2004). Sightings. Red-billed quelea. *Promerops* 258, 19.
- Hadaker T. (2005). A Western Cape birding trip. *Kite* 66, 7–8.
- Carter J. (2005). Sightings. *Promerops* 264, 20.
- Boer B. (2006). Sightings. Red-billed quelea. *Promerops* 265, 17.