

Notable recent records of terns, gulls and skuas in southern Mozambique including the first country records of Black Tern *Chlidonias niger*

Author: Allport, Gary

Source: Bulletin of the British Ornithologists' Club, 138(2) : 101-116

Published By: British Ornithologists' Club

URL: <https://doi.org/10.25226/bboc.v138i2.2018.a5>

The BioOne Digital Library (<https://bioone.org/>) provides worldwide distribution for more than 580 journals and eBooks from BioOne's community of over 150 nonprofit societies, research institutions, and university presses in the biological, ecological, and environmental sciences. The BioOne Digital Library encompasses the flagship aggregation BioOne Complete (<https://bioone.org/subscribe>), the BioOne Complete Archive (<https://bioone.org/archive>), and the BioOne eBooks program offerings ESA eBook Collection (<https://bioone.org/esa-ebooks>) and CSIRO Publishing BioSelect Collection (<https://bioone.org/csiro-ebooks>).

Your use of this PDF, the BioOne Digital Library, and all posted and associated content indicates your acceptance of BioOne's Terms of Use, available at www.bioone.org/terms-of-use.

Usage of BioOne Digital Library content is strictly limited to personal, educational, and non-commercial use. Commercial inquiries or rights and permissions requests should be directed to the individual publisher as copyright holder.

BioOne is an innovative nonprofit that sees sustainable scholarly publishing as an inherently collaborative enterprise connecting authors, nonprofit publishers, academic institutions, research libraries, and research funders in the common goal of maximizing access to critical research.

Notable recent records of terns, gulls and skuas in southern Mozambique including the first country records of Black Tern *Chlidonias niger*

by Gary Allport

Received 24 January 2018; revised 4 May 2018; published 22 June 2018

<http://zoobank.org/urn:lsid:zoobank.org:pub:247B1A20-DC1C-41F8-88F4-D7A555149F5E>

SUMMARY.—Interesting sightings in southern Mozambique of 13 species of terns, gulls and skuas are reported, the result of regular observations between October 2010 and September 2017 while I was based in the capital, Maputo. These include the first two records of Black Tern *Chlidonias niger*, the first fully documented record of Lesser Noddy *Anous tenuirostris* and the first observations of live Arctic Terns *Sterna paradisaea* for Mozambique, as well as status updates for Kelp Gull *Larus dominicanus*, Lesser Black-backed Gull *L. fuscus*, Sabine's Gull *Xema sabini*, Gull-billed Tern *Gelochelidon nilotica*, Swift Tern *Thalasseus bergii*, Sooty Tern *Onychoprion fuscatus*, Common Tern *Sterna hirundo*, Black-naped Tern *S. sumatrana*, Roseate Tern *S. dougallii* and Subantarctic Skua *Stercorarius antarcticus* in southern Mozambique.

Regular bird observations were made in the environs of Maputo, Mozambique, from October 2010 until September 2017. Casual observations ranging between Ponta d'Ouro and the Maputo Special Reserve in Maputo Province, in the south, through Gaza Province to the Bazaruto archipelago in Inhambane Province, in the north (see Fig. 1), were recorded in

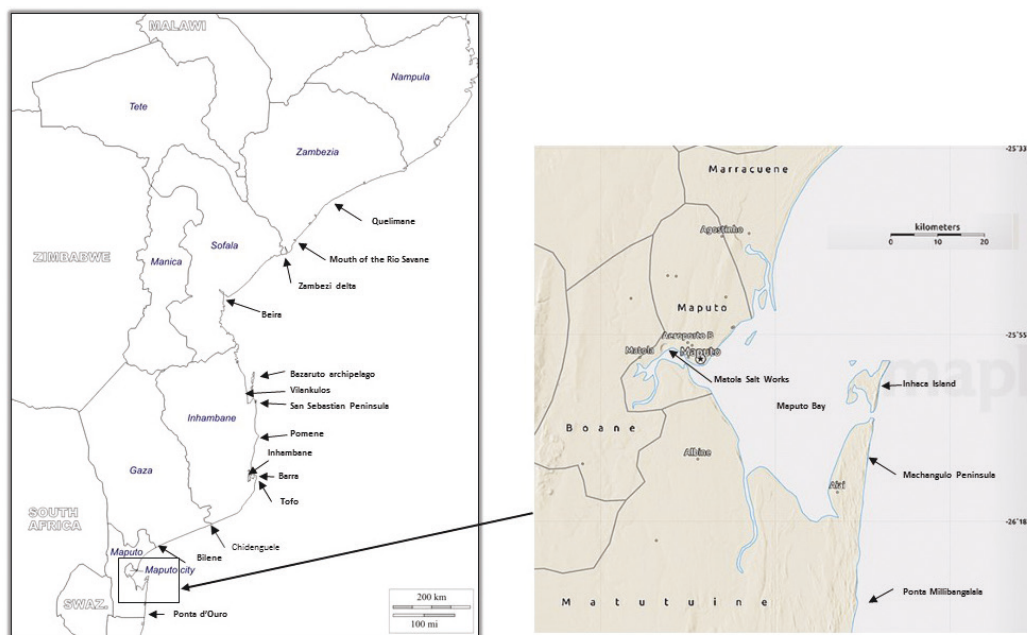


Figure 1. The localities referred to in the text in southern Mozambique (left) and the Maputo Bay area (right).

eBird (www.eBird.com), and informally reported on the Facebook site Birds Mozambique and in the Recent Reports section of *Bull. Afr. Bird Cl.* My purpose here is to place sightings of terns, gulls and skuas on formal record, as part of an ongoing effort to publish all interesting bird records from this part of the country. A sibling publication covering other seabirds is planned.

The primary area covered was the hinterland of Maputo, but with nine visits to Inhambane and Tofo, one to Pomene and two to Bazaruto. Pelagic trips were made from Maputo ($n = 15$), Tofo ($n = 6$) and Bazaruto ($n = 1$). From Tofo and Bazaruto these trips traversed waters due east to c.10–15 km offshore. From Maputo, pelagic trips crossed Maputo Bay and ranged north of Inhaca Island, reaching the continental shelf edge. Two trips ventured further south off the Machangulo Peninsula. For locations see Fig. 1. Birds were observed using binoculars and telescope, but digital photography was an important means of documenting records, especially at sea.

Southern Mozambique is here defined as that part of the country that falls within the Southern Africa ornithological region, and its northern boundary in Mozambique is delineated by the Zambezi River, as well as waters within Mozambique's Exclusive Economic Zone (Hockey *et al.* 2005).

The status of all of the species included here was described by Hockey *et al.* (2005) and many were treated in more detail by *The atlas of the birds of Mozambique* in the two volumes covering southern and central Mozambique (Parker 2000, 2005). Parker (2005) covered the provinces of Sofala and Manica, both of which fall within the Southern African region, but he also covered all of Tete, whereas only the southern part of this province, south of the Zambezi River and the Cahora Bassa Dam, forms part of the Southern Africa ornithological region. All of the data from Parker's studies were included within the Southern African Bird Atlas Project (SABAP) dataset, which were analysed in their entirety at the time by Hockey *et al.* (2005). However, data from Mozambique have continued to be added by observers since 2005 (<http://sabap2.adu.org.za/>). Clancey (1996) also remains an important work underpinning our knowledge of southern Mozambique's avifauna.

For seabirds, Clancey (1971) provided the first list of sighting localities in southern Mozambique, while Brooke *et al.* (1981) compiled both published and unpublished data 'from the coast or within sight of it' to supplement Clancey's study. Lambert (2005) is the most important work on seabirds in southern Mozambique, based on 350 days of observations from prawn trawling vessels in Mozambican waters. Rollinson (in press) documented seabirds from a fishing vessel in Mozambican waters off southern and central Mozambique over the course of 79 days, between 1 August and 17 October 2015. As many of the sightings reported herein pre-date those of Rollinson (in press), his findings are discussed alongside those reported here (with his permission).

The main reference for the region is Hockey *et al.* (2005) wherein a short review of the status and records for all species is presented. Only those species for which my records augment knowledge of their status are included herein, and I have not attempted to comprehensively analyse SABAP, eBird and other major data sources for additional material. Taxonomy and nomenclature follow Dickinson & Remsen (2013).

LESSER NODDY *Anous tenuirostris*

Breeds on tropical and subtropical Indian Ocean islands (Safford & Hawkins 2013) and is a seasonal visitor to East Africa, albeit in very variable numbers (Britton 1980, Urban *et al.* 1986). Only a rare vagrant to southern Africa (Urban *et al.* 1986) with four published records (Hockey *et al.* 2005) of which one is from Mozambique and the others are from the east coast of South Africa. No records in the SABAP database. Unsubstantiated reports exist from the

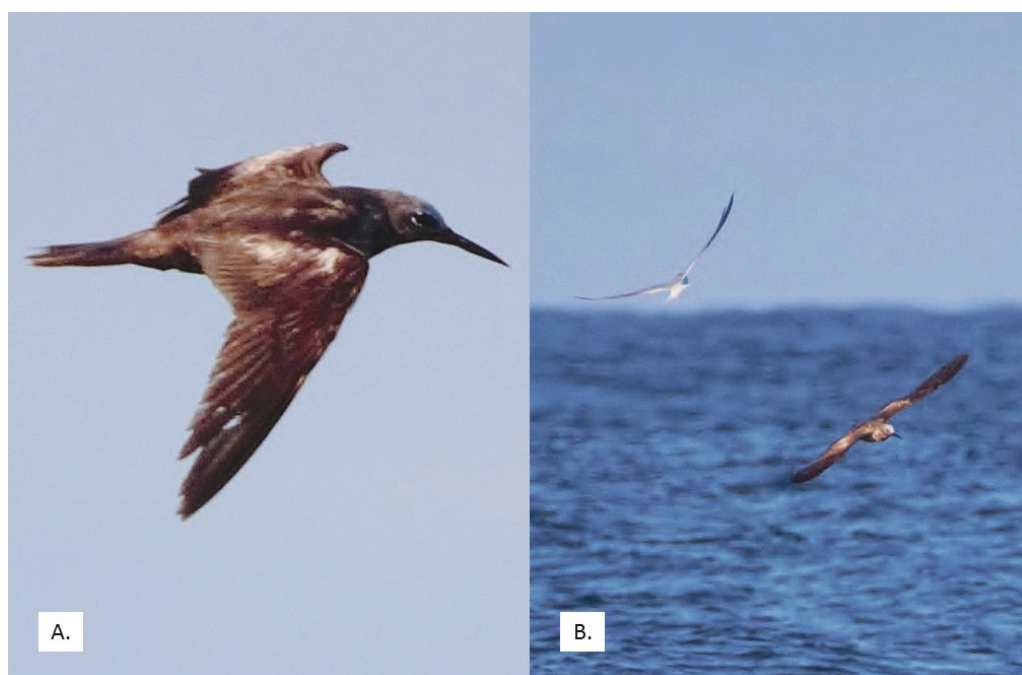


Figure 2. Lesser Noddy *Anous tenuirostris*, off Inhaca Island, Mozambique, 25 April 2013; note the long thin bill with shallow gonydeal angle (A) and pale lores and size relative to the Little Tern *Sterna albifrons* (at left, in B) (Gary Allport)

Bazaruto archipelago and San Sebastian Peninsula.

On 25 April 2013 a noddy sp. was seen briefly in the early morning en route by boat to outer Maputo Bay. It was relocated within a group of Little Terns *Sterna albifrons* later in the day north of Inhaca Island and some poor-quality photographs (Fig. 2) were taken. Its smaller size than Brown Noddy *A. stolidus* (compared to the adjacent Little Terns), long narrow bill with shallow gonydeal angle, and pale lores confirm the identification (Harrison 1983). This is the second record for Mozambique and the first for which published details exist.

SABINE'S GULL *Xema sabini*

Breeds in the Holarctic and migrates south through the Atlantic Ocean to spend the austral summer off southern Africa (Hockey *et al.* 2005). Rare in Mozambique, the first record was by Lambert (1983), followed by another four, all in February–April north of Inhaca Island (Lambert 2005), including one



Figure 3. Second-calendar-year Sabine's Gull *Xema sabini*, north of Inhaca Island, Mozambique, 10 May 2015 (Gary Allport)

immature. Note that Lambert's first record (1983) was not mentioned by Clancey (1996), but was cited as being in press by Griffiths & Sinclair (1982) and subsequently incorrectly attributed to the latter authors by Hockey *et al.* (2005).

One north of Inhaca Island on 10 May 2015 (Fig. 3) is the sixth record for Mozambique. It was considered to be in its second-calendar year (CY) having nearly completed moulting its juvenile plumage, with the exception of some brownish wing-coverts and outer primaries, but sporting an adult non-breeding plumage neck collar (P. Morris pers. comm.).

KELP GULL *Larus dominicanus*

Subspecies *vetula*, known as Cape Gull, breeds in the austral summer on coasts of South Africa as far east as the Riet Keiskamma River, Eastern Cape (Tree 2006), and disperses north along the east and west coasts post-breeding (Crawford *et al.* 1997). Hockey *et al.* (2005) noted that it occurs as far north as Maputo. Parker (2000) described Kelp Gull as an uncommon non-breeding winter visitor to coasts, where it was seen alone or in groups of up to ten, estimating the number visiting this region as unlikely to exceed 300, and the mapped distribution shows records confined to the region of Maputo Bay. Parker (2005) did not record it in central Mozambique. Clancey (1996) noted records from Beira harbour, but these have not been substantiated subsequently and now appear very unlikely (see Lesser Black-backed Gull *L. fuscus*).

Observed annual pattern of occurrence in Maputo Bay follows Parker (2000: 95), but first arrivals in January–February often involve recently fledged juveniles still growing their primaries. Birds of all ages arrive in March, and all depart in August–September. Up to 70 have been observed in Maputo Bay. Considering its confident behaviour on the breeding grounds, *L. dominicanus* is surprisingly discreet in Maputo Bay, feeding 1–2 km offshore, following prawn trawlers, and roosting on inaccessible, isolated sandbanks. It is rarely observed on the Maputo city beachfront, despite being present nearby in good numbers.

It is noteworthy that there were no sightings further north in Mozambique, despite considerable observer effort around Tofo and Inhambane, and potentially suitable habitat at Bilene. Rollinson (in press) observed one at sea c.150 km east of Vilankulos, on 8 October 2015, which appears to be the only recent reliable record north of Maputo.

It seems likely that Maputo Bay is a focal destination for a regularly returning subpopulation of Kelp Gulls, and it is remarkable that recently fledged juveniles reach Maputo Bay probably within just a few weeks of fledging. This is probably linked to feeding opportunities around the small fleet of inshore prawn trawlers that operate daily up to 15 km from Maputo, mostly inside the bay. Equally, the apparent absence of the species further north is perhaps related to the relative lack of inshore fishing vessels regularly working specific areas.

LESSER BLACK-BACKED GULL *Larus fuscus*

A rare non-breeding Palearctic migrant to the coast, most frequently reported in the austral summer (Parker 2000). Donnelly (1974) discussed records of the species in southern and central Africa, and assigned a number of sightings of black-backed gulls at Beira to *L. fuscus*. Brooke *et al.* (1981) and Parker (2005) followed Donnelly (1974), reporting at least eight records from Beira prior to 1974, in January, March, May, July, August, November and December. Seventeen birds were subsequently reported there on 7 December 1974 (Sinclair 1979). Without explanation, Clancey (1996) elected not to follow Donnelly (1974), reporting just one record from Beira in April 1971 (by Weikowitz), but mentioned Kelp Gull *L. dominicanus* as occurring in Beira harbour. Parker (2005) reported further singles at Beira in February 1995 and February 2001. There are 35 records in the SABAP database from the

TABLE 1
Records of Lesser Black-backed Gull *L. fuscus* from southern Mozambique.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Beira ¹	x	2	x		x		x	x			x	x
Beira ²	2	4	1			2	4	3		1	2	17
Maputo ³		1								1	1	
Maputo ⁴	3	1			1					2 (1)	2	

Sources: ¹ Brooke *et al.* (1981) (indicated as 'x' where no counts provided) and Parker (2005); ² SABAP database; ³ Parker (1999); ⁴ this study (record in brackets from Bazaruto archipelago).



Figure 4. Three Lesser Black-backed Gulls *Larus fuscus*, Maputo, Mozambique, 16 January 2016, all showing characters of nominate *fuscus* (Baltic Gull), second-calendar year (left back, partially obscured), subadult (middle) and fourth-calendar year (right) (Gary Allport)

Beira region in the 2009–17 period, numbering 1–6 records per annum (Table 1). Further south, Parker (2000) reported two records, at Inhaca in October–November 1976 (Brooke *et al.* 1981) and Maputo Bay in February 1995.

An adult was seen at Ilha de Benguerra, Bazaruto archipelago, on 20 October 2013, with the following observed on beaches at Maputo; one (adult) 9 October 2011, one (2CY) 2 February 2015 (with A. F. A. Hawkins), 6–17 May 2015, 25 November 2015, three (2CY, 4CY, subadult) 16–19 January 2016 (Fig. 4), one (subadult) 23 February 2016 (with C. Cohen) and one (2CY) 7 November 2016.

All birds displayed features consistent with race *L. f. fuscus*, known as Baltic Gull (Jonsson 1998) and there were no sightings of birds that may have been Heuglin’s Gulls *L. f. heuglini*. However, as the two races were not always formerly recognised, it is probable that some older records, and even some recent observations, may have involved *L. f. heuglini*, which has been recorded south to Port Elizabeth, South Africa (A. J. Tree pers. comm.).

These records further establish the status of Baltic Gull as a rare but regular visitor to southern Mozambique. The overall pattern is of most records in the austral summer and the majority of reports from Beira in December, but small numbers of birds are present year-round.

All records are from the coast, which is noteworthy as Baltic Gull is known to migrate south inland via the African Rift Valley, regularly occurring at the Great Lakes (Kilpi & Saurola 1984, Bustnes *et al.* 2013) and overwintering more widely in the Congo Basin (Kylin *et al.* 2010), with vagrants regularly reaching the interior of southern Africa (Hockey *et al.* 2005). It is very uncommon on the coasts of East Africa north of Mozambique (Zimmerman *et al.* 1996; N. Baker *in litt.* 2017). The pattern of records suggests that some individuals cross to the coast from the Rift Valley, perhaps at its southern end by following the River Zambezi, and then disperse south along the Mozambican coastline.

Baltic Gull breeds in a restricted area of Scandinavia and has declined during the last 50 years (Bevanger & Thingstad 1990), although numbers have stabilised more recently (Lorentsen 2007); the current population is c.2,000 pairs, making it a globally rare subspecies. Given the length of the southern Mozambique coastline, it is possible that this apparently rare bird nevertheless does occur in numbers significant at a population level.

GULL-BILLED TERN *Gelochelidon nilotica*

A resident and Palearctic winter visitor to West Africa, the Rift Valley and coasts of East Africa as far south as Dar es Salaam, Tanzania (Britton 1980, Urban *et al.* 1986). Vagrant to Mozambique. Two records involving four birds were reported by Hockey *et al.* (2005); two each at Gorongosa National Park in December 1972 (Sinclair 1975, Ryan 1997) and at Lake Chuali in June 1995 (Ryan 1997). However, the mapped distribution in Hockey *et al.* (2005) shows five locations in southern Mozambique, of which two of the others accord with Parker (2000)—Maputo / Matola Salt Works and Lago Manjacaze. The final record is mapped in Hockey *et al.* (2005) at an inland locality near the Zimbabwe border, but is not authenticated (and not in the SABAP database). The species is listed as an addendum by Clancey (1996), which Parker (2005) cited as his source for the Gorongosa record. The Lago Chuali record was reported as being from 1995 by Hockey *et al.* (2005) but in 1996 by Ryan (1997); presumably this discrepancy does not imply that there were two different observations. These records are summarised in Table 2. The most recent Mozambican record was in November 2017 on the Matola River, near Maputo (J. R. Nicolau pers. comm.)

One seen feeding along the shore off Matola Salt Works (with R. Hughes) beside Lesser Crested Terns *T. bengalensis* on 11 May 2011 was the fifth record for southern Mozambique. Noted field characters included the short, strong black bill, cleaner paler upperparts and dark tips to the primaries on the underwing. However, photographs taken at the time were incorrectly exposed and do not serve as documentation.

TABLE 2
The four published records of Gull-billed Tern *Gelochelidon nilotica* in southern Mozambique.

Date	Location	Count	Source	Cited by
December 1972	Gorongosa National Park	2	Sinclair (1975)	Hockey <i>et al.</i> (2005)
March 1995	Salinas da Matola	1	Hockey <i>et al.</i> (1996), Parker (2000)	
June 1995/6?	Lago Chuali	2	Ryan (1997), Parker (2000)	Hockey <i>et al.</i> (2005)
August 1996	Lago Manjacaze	1	Parker (2000)	

SWIFT TERN *Thalasseus bergii*

Widespread on coasts in southern Africa. It breeds in the Cape and is a year-round non-breeding visitor to Mozambique (Hockey *et al.* 2005), where regularly recorded as far north as Beira (Clancey 1996), mostly within 18–25 km of the coast but occasionally over the shelf-break (Lambert 2005). Parker (2000) described it as uncommon on coasts in the southern provinces, often seen alone, most frequently in October–April, but with records in all months. Notably, Brooke *et al.* (1981) reported up to 300 during two weeks in October–November 1976 on Inhaca Island, with birds observed displaying and copulating. In central Mozambique, Parker (2005) reported a more seasonal pattern—absent in March–July and a peak in January, but less common than further south, with probably 300 birds in the region. However, Lambert (2005) reported the species as uncommon in the south, where mostly restricted to Maputo Bay and Inhaca Island, but more frequent further north and often the most abundant tern aside of Common Tern, with 30–270 daily in March 1987 and March–April 1988, between Inhambane and the Save River mouth.

Found breeding in the 19th century at the Zambezi River (Kirk 1864, Stark & Sclater 1906, Clancey 1975, J. Kirk *in* Brooke & Cooper 1982) and is assumed to have bred there later than this, but there are no proven records (Parker 2000). There is one report of breeding in northern Mozambique (C. Bento pers. comm. *in* Parker 2005) but no precise locality is given.

Swift Tern has six subspecies distributed coastally from Namibia to East Africa and throughout the Indian Ocean to Australia (Gochfeld *et al.* 2017). The status of those races present in Mozambique is unclear, but three or four subspecies are seemingly involved.

T. b. bergii breeds on the coast of Namibia and South Africa, from Swakopmund to Stag Island, Eastern Cape (Cooper *et al.* 1990, Hockey *et al.* 2005), and ringing recoveries show that it disperses along the Atlantic coast as far north as Namibia and east and north to the Indian Ocean coast of KwaZulu-Natal. This race presumably reaches southern Mozambique in the non-breeding season (Clancey 1975, Cooper *et al.* 1990) although definitive evidence is lacking (Cooper *et al.* 1990). It shows a relatively dark upperwing, approximately the tone of Common Gull *Larus canus* (Olsen & Larsson 2010).

T. b. thalassinus breeds on coasts of Tanzania and Kenya, and has much paler upperparts than *T. b. bergii*, with the grey tone equivalent to Lesser Crested Tern *T. bengalensis* (see Stevenson & Fanshawe 2002). It is smallest in wing and bill lengths (Table 3) of the first three taxa discussed here. This race has not been confirmed to occur in Mozambique, but it appears probable that *T. b. thalassinus* is present in at least the northern coastal provinces (see below).



Figure 5. Swift Tern *Thalasseus bergii*, off Tofo, Inhambane Province, Mozambique, 29 August 2016, possibly of the race *velox*, showing relatively dark upperwings of a grey tone similar to Lesser Black-backed Gull *L. fuscus* (Gary Allport)

TABLE 3 Wing and bill lengths (in mm), showing mean + (n) of three subspecies of Swift Tern <i>Sterna bergii</i> (Olsen & Larsson 2010)		
Subspecies	Wing	Bill
<i>S. b. bergii</i>	357.5 (18)	62.3 (45)
<i>S. b. thalassinus</i>	337.0 (25)	56.7 (29)
<i>S. b. velox</i>	366.0 (30)	64.6 (37)

Western populations of *T. b. velox* breed in the north-west Indian Ocean and Red Sea. Described as darkest, with upperparts equivalent in tone to Lesser Black-backed Gull *Larus fuscus* (Olsen & Larsson 2010). It has the largest wing and bill lengths of the first three taxa mentioned here (Table 3). Reported in coastal East Africa as a non-breeding migrant (Stevenson & Fanshawe 2002) and Seychelles as a vagrant (Safford & Hawkins 2013).

T. b. enigma is based on two specimens collected just north of Beira, which were initially identified by Clancey (1970, 1971) as Royal Terns *T. maxima*, but subsequently described as a new subspecies (Clancey 1975, 1979) thought probably to breed in central Mozambique and possibly Madagascar. Upperparts described as intermediate between *thalassinus* and *bergii*, and the specimen in breeding plumage was reported to have a narrower white forehead separating the black cap from the bill than other races. The taxon has subsequently been synonymised with nominate *bergii* based on small sample size and limited data (Dickinson & Remsen 2013, Gochfeld *et al.* 2017). Hockey *et al.* (2005) also stated that it is 'synonymised with the nominate' but A. J. Tree (*in litt.* 2017) reported that this was an error and the authors intended to lump it with *thalassinus*. Safford & Hawkins (2013) assigned breeders in Madagascar to *thalassinus* and discounted the validity of *enigma*.

In the Maputo Bay area, the species was recorded on 33 days with a mean count of 7.2 birds and daily maxima of 30 on two occasions. Records were in all months except February–March, with no apparent peak. Most birds were scattered feeding across the bay, often following prawn trawlers, picking up offal, and were not seen sufficiently well to assign to race. All observed well enough to enable subspecific identification were assigned to *bergii*, based on their darker upperparts than nearby Lesser Crested Terns. However, two seen on 18 May 2011 showed very dark upperparts, akin to Lesser Black-backed Gull, and are thought to have been race *velox*.

During seven day counts in the Tofo area the mean was 90.1 birds with a max. count of 400 in April. Records were from April–May and August. Larger counts were partly as a result of migratory movements and counts at roost sites. Most were seen distantly through a telescope and very few were assigned to race, but again the majority were assigned to *bergii* except one with the very dark upperparts of race *velox* (Fig. 5).

On 20 October 2013 a group of 80 was found roosting on a sandbank off Benguera Island, Bazaruto. Lighting conditions were harsh, with bright sunlight, and the birds were observed against pale sand background, but all were apparently paler than those seen further south. The group included 2–3 adults in complete breeding plumage—which did not show a notably narrow frons—plus several immatures, and was accompanied by several Lesser Crested Terns *T. bengalensis* with similar upperparts coloration.

My records do not shed much additional light on the status of the different subspecies of Swift Tern in Mozambique, which remains enigmatic. There is reasonable evidence that *T. b. bergii* migrates to southern Mozambique, at least as far north as Maputo Bay, in the non-breeding season (June–December) and presumably some immature non-breeders of this race are resident year-round. Swift Tern does not breed until 3–7 years old, and non-breeders remain away from the colonies, sometimes for many years (A. J. Tree pers. comm.). The total number of breeding pairs per year in southern Africa as a whole is very variable (Cooper *et al.* 1990), suggesting that large numbers skip nesting in certain years. Nevertheless, it appears that significant numbers are present on the Mozambique coast from Inhambane northwards in March–May (Lambert 2005) when adult *T. b. bergii* are breeding in the Cape. Evidence of nesting on Inhaca Island in October (Brooke *et al.* 1981) also suggests the presence of a population of Swift Terns on the southern Mozambique coast that may possess a different annual breeding cycle. Whether these potential breeders represent a different taxon is unproven.

The use of upperparts coloration in subspecies designation clearly merits further attention. Birds seen in August at Tofo and in all months at Maputo were too dark for *thalassinus* but some were considered sufficiently dark to be *velox*. The group seen at Bazaruto in October was also perplexing, showing upperparts that concur with the description of *T. b. enigma* but no other features ascribed to the latter (Clancey 1975, 1979). Swift Terns observed by Brooke *et al.* (1981) in Maputo Bay were also described as showing paler upperparts and presumed to be tropical breeders of the race *enigma*; however, A. J. Tree (*in litt.* 2017) feels that they should be assigned to *thalassinus*. Observers are encouraged to make detailed observations of the species in Mozambique.

SOOTY TERN *Onychoprion fuscatus*

Widely distributed across open oceans in the tropics (Harrison 1983) and breeds in the Mozambique Channel, in the French Southern Ocean Territories (Le Corre & Safford 2001) and in northern Mozambique. Thousands attempt to breed on the small island of Puga-puga, near Angoche in northern Mozambique, but almost all of their eggs and many adults are taken as food by local people (Kromer 1998). Flocks numbering hundreds occasionally move offshore south-east of southern Mozambique, reaching 28°S (Lambert 2005). Following easterly gales, some reach South African waters in KwaZulu-Natal and the Agulhas Current, even occurring inland occasionally (Brooke & Sinclair 1978, Avery 1982, Maclean 1984).

Several records from coastal southern Mozambique between Beira and Inhaca Island (Brooke *et al.* 1981, Clancey 1996, Harrison *et al.* 1997, Parker 2000). Lambert (2005) found that small to large flocks of Sooty Terns regularly straggle offshore as far south as 26°S, hunting over schools of fish, sometimes accompanied by skuas and other seabirds. They never followed trawlers in the area south of the Save River mouth, but sometimes followed vessels at night, calling loudly. Few were sighted by Lambert in December–January, but flocks of 5–90 birds were seen daily in February–March and November, and hundreds were sometimes found at the shelf-break. In April–October Lambert reported the species more sporadically, but when present was often in flocks of 350–550 birds north of 25°S, usually within 20 nautical miles of the coast. Lambert observed an increase in frequency with decreasing latitude. East of Maputo Bay, around 25°S, 34–35°E, the max. count was 155 on 17 March 1985 (5–140 birds was the norm) but further north, at the Bazaruto archipelago, up to 400 were recorded together. Rollinson (*in press*) recorded Sooty Terns throughout his voyage in southern Mozambique, with flocks as large as 750 noted.

My observations fit the pattern described above. Sooty Terns were seen in small numbers off Tofo in May (2–50 birds), August (75) and October (singles). The pattern of occurrence was similar in waters off Maputo, with 1–10 individuals seen in October–May. However, on 3 October 2016, 800 were seen off Inhaca Island and over the shelf-edge in groups of up to 100 birds. The most notable event was on 18 May 2011 when an estimated 9,000 birds of all ages were seen off Inhaca Island, feeding intensively over bait fishes.

COMMON TERN *Sterna hirundo*

An abundant Palearctic visitor to the southern African coast in the austral summer, mostly August–April, with some regularly remaining in the austral winter (Brooke & Sinclair 1978, Maclean 1984, Urban *et al.* 1986). Status is similar in Kenya and Tanzania (Zimmerman *et al.* 1996). Thousands have been reported from southern Mozambique (Brooke *et al.* 1981, Kohler & Kohler 1996, Lambert 2005) and Parker (2000) estimated that numbers visiting this region probably exceed 100,000 individuals. Published analysis of ringing records shows that most visitors to western and southern coasts of southern Africa breed in the northern

Western Palearctic (Vandevall 1988, Underhill *et al.* 1999), migrating via the eastern Atlantic to reach Mozambique after rounding the Cape. Evidence suggests that some western / northern birds use the eastern route (A. J. Tree unpubl. data). Recoveries of Common Terns ringed at colonies in south-east Europe (in the Black Sea region) are almost entirely from east of 27°E on Indian Ocean coasts of southern Africa (Vandevall 1988) suggesting they travel south via the Red Sea to East Africa and then along the coast. Their contribution to the population in the region may be under-estimated (Vandevall 1988). In addition to the nominate subspecies, an unknown percentage of *S. h. longipennis* contributes to the total Mozambican population (Brooke & Sinclair 1978, Vandevall 1988, Zimmerman *et al.* 1996, Hockey *et al.* 2005; A. J. Tree *in litt.* 2017).

Common Tern was the most abundant inshore seabird between Ponta d'Ouro and Bazaruto with hundreds seen daily, and up to 5,000 occasionally. Often 1,000 or more birds congregated over schools of small fish brought to the surface by tuna *Thunnus* spp. in shallower waters (<80 m), but with distinctly reduced numbers beyond the shelf-edge. However, it was clear from careful observations based on recent identification data (e.g. Olsen & Larsson 2010), supported by photographs, and with advice from A. J. Tree, that other similar tern species were present in small numbers within these flocks. It was not always possible to undertake systematic searches, but other species were identified in the field among the many Common Terns, often based on structural characters, while some were identified *post hoc* from photographs.

ROSEATE TERN *Sterna dougallii*

Breeds on the coasts of Kenya, Tanzania and the western Indian Ocean islands, with a geographically isolated population in Algoa Bay, South Africa (Urban *et al.* 1986, Tree 2005). Movements are poorly understood, but records are rare in south-eastern Africa, with most apparently of birds from Bird Island (ringing recoveries and sightings). One record from Durban is thought to be of the race *S. d. arideensis* from South Asia and the eastern Indian Ocean, and several records from Eastern Cape are also considered to relate to this taxon (Tree 2003, Tree & Klages 2003, *in prep.*). Note that this taxon is now considered synonymous with *S. d. gracilis*, as are all other forms described for the Indo-Pacific region, as part of a revision in the light of genetic and population studies (Lashko 2004, Tree 2005).

Not recorded in northern Mozambique (Urban *et al.* 1986) and an uncommon non-breeding visitor to southern Mozambique, first observed at Bazaruto in June 1950 (M. L. Van Eyssen *in* Clancey 1996), then in January 1997 and January 1998 (U. & P. Kohler *in* Parker 2000). In June 2003, 60 pairs of adults were displaying intensely near Inhassoro, opposite Bazaruto Island (F. Couto pers. comm. *in* Tree & Klages 2003). These were in synchrony with those breeding in South Africa. More recently, a group of displaying birds was seen on the nearby San Sebastian Peninsula in October 2016 (A. Lund *in litt.* 2016).

Away from Bazaruto, at least one was at the mouth of the Rio Savane in September 2001 (A. Hester *in* Parker 2005) and six were on the Pungwe River near Beira in April 1956 (Long 1964), but these were treated as unconfirmed by Parker (2005). Further south one was seen at Inhaca Island in November 1976 (Brooke *et al.* 1981).

Small numbers were seen on pelagic trips from Maputo (seven of 15 trips). All were in non-breeding plumage and appeared to be adults (at least not juvenile) showing an incomplete cap with grizzled forehead, weak carpal bar and outer tail feathers longer than juveniles. All were identified based on a combination of slightly longer shape than Common Tern *S. hirundo* but relatively shorter wings, long bill (*cf.* Arctic Tern *S. paradisaea*), clean white underparts (adult Common Terns breeding in Central Asia are often dark grey on the underparts in summer and transitional plumages), and paler, cleaner greyish-white

upperparts, particularly the secondaries, contrasting with a dark wedge on the outermost 2–4 primaries (Larsson & Olsen 2010). None was visibly moulting. A. J. Tree confirmed my identification of the first birds seen from photographs (although none is of publishable quality). It is possible that juveniles and immatures were overlooked, although structural features were usually key to the initial identification and would apply equally at any age.

There was one sighting from a pelagic off Tofo, on 3 May 2015, and one was seen from shore at Ponta Milibangalala, in Maputo Special Reserve, on 23 May 2015. All other sightings were north of Inhaca Island; 1–2 on 18 May 2011, seven on 9 November 2013 (with F. Koimburi), and singles on 25 November 2013, 23 January and 13 April 2014, 3 October 2015 and 31 January 2016.

A count of 80 at Bazaruto in January 1998 (U. & P. Kohler *in* Parker 2000) suggests that birds in this area originate from East Africa or the Indian Ocean islands, rather than South Africa, because the only known breeding sites in Algoa Bay supported no more than 140 pairs at the time (Parker 2000). However, Hockey *et al.* (2005) was more cautious, treating these birds as of unknown provenance.

Genetic analysis has revealed two distinct lineages in Atlantic *S. d. dougallii* and Indo-Pacific *S. d. gracilis*, and the South African population represents secondary contact and introgression between them (Lashko 2004). Tree (2005) suggested that South African and western Indian Ocean populations be treated as intermediate forms, noting evidence that suggests colonies in the Indian Ocean especially are unstable—supported by Nisbet & Ratcliffe (2008)—and breeding populations may shift annually within the species' range.

My records are the first to suggest infrequent but regular presence of Roseate Tern in southernmost Mozambique and may reflect movement between breeding populations as suspected by Tree (2005).

BLACK-NAPED TERN *Sterna sumatrana*

Breeds in the tropical Indo-Pacific including Seychelles, and is a vagrant to Madagascar and other south-west Indian Ocean Islands (Safford & Hawkins 2013). The first record in the southern African region was reported by Hockey *et al.* (2005) as an adult and immature on Inhaca Island in November 1976, citing Sinclair (1977) and Brooke *et al.* (1981). However, Brooke *et al.* (1981) reported four birds on 10 November and three on 11 November 1976. There are at least nine records from KwaZulu-Natal (Hockey *et al.* 2005), including four immatures at Umvoti River mouth in January–March 1976, pre-dating the Mozambique records (Urban *et al.* 1986). Two records from southern Mozambique were mapped by Hockey *et al.* (2005) but with no further evidence or details.

Two were seen well with the naked eye (whilst surf fishing) at Pomene, on 20 October 2012, chasing each other and calling vociferously. One was seen off Inhaca Island on 22 November 2014, also with the naked eye while I was fishing. All three were adults showing no signs of moult and easily identified by virtue of their pure white underparts, very pale grey upperparts, clear single black-edged outer primary, white rump, long thin black mask extending onto the nape and long black bill. These are the fourth and fifth published records for southern Mozambique.

ARCTIC TERN *Sterna paradisaea*

A common Holarctic passage migrant along South Africa's west coast, but uncommon on the east coast, chiefly in July–November and March–May (Urban *et al.* 1986, Hockey *et al.* 2005). Many immatures winter in the region and most recoveries of ringed birds are in October–January (Brooke & Sinclair 1978, Vandevale 1988). No records in Kenya and



Figure 6. One of a group of Arctic Terns *Sterna paradisaea*, north of Inhaca Island, Mozambique, 23 July 2017; note uniform-aged primaries unlike in the non-breeding (presumed first-year) Common Terns *S. hirundo* seen the same day (Gary Allport)

Tanzania (Zimmerman *et al.* 1996, Stevenson & Fanshawe 2002) or the Malagasy region (Safford & Hawkins 2013).

As mapped by Urban *et al.* (1986) and Hockey *et al.* (2005), Arctic Tern is believed to be regular on the Mozambique coast south of Inhaca Island. However, Clancey (1971) knew of no records—but suspected its occurrence—and the only confirmed record known to Brooke *et al.* (1981) was a ringing recovery further north, at San Martinho (25°S, 34°E), Sul do Save, on 3 July 1967, of a bird ringed in Helsinki, Finland, on 8 July 1966 (Støn 1969). Another record involved a pullus ringed on 24 June 1991 in Denmark that was found moribund aboard a ship 75 km off Chidenguele, Gaza Province, on 27 December 1991 (J. Madsen *in litt.* 2017 *per* A. J. Tree).

Lambert (2005) strongly suspected the presence of Arctic Terns among the large flocks of Common Terns off Maputo, but was unable to confirm this, despite trapping some birds, as all of these proved to be *S. hirundo*.

I found Arctic Tern to occur in small but variable numbers off Maputo. Searching the flocks by eye was the most effective way of finding them, using the smaller, rounder head, less elongated body shape and shorter bill, while the wing feathers of uniform age was often an additional useful character (see Fig. 6). Singles were observed among flocks of Common Terns, but it was difficult to be sure how many were involved. Most were in non-breeding plumage, with the appearance of non-breeding adults or immatures. One or two individuals were seen on eight dates in September–November, January and April. Additionally, 20 were estimated among 700 Common Terns on 10 May 2015, all of which were adults in distinctive full breeding plumage (unfortunately, no publishable photographs were taken). On 12 July 2017 a monospecific group of 12 was found on the sea, in water 400 m deep north of Inhaca Island, all of them in non-breeding plumage, presumably birds in their second- or possibly third-calendar year.

These are the first confirmed sight records of Arctic Tern in Mozambique. The pattern of occurrence, mostly in the austral summer, matches observations in South Africa (Hockey *et al.* 2005) and the pattern of ringing recoveries in the region (Vandevale 1988). No juveniles in their first-calendar year were found, the youngest being in July of its second-calendar

year. It is interesting to note that the two ringing recoveries were of a first-year in December and a second-calendar-year bird in July.

The record of a group of first-summer / second-calendar-year birds on 12 July matches the observations of Rollinson (in press), who observed a total of 29 Arctic Terns on 2–5 August 2015 in three southerly far offshore locations. All were in non-adult plumage and all of those aged were first-summer / second-calendar-year birds. These observations suggest the presence of a small population of non-breeders, which spend their first year in the south-west Indian Ocean.

Adults satellite-tracked from Greenland and Iceland moved east into the southern Indian Ocean, but returned west along the Antarctic pack ice edge to spend most of the austral summer (December–March) in the southern Atlantic (Egevang *et al.* 2010), then returned directly north to breed, crossing the equator around 3 May. Adult Arctic Terns satellite-tracked from the Netherlands, however, were found to stage further east in the central Indian Ocean, between 20–40°N, 65–100°E (Fijn *et al.* 2013).

The record of 20 off Maputo Bay in May accords with the dates when adults head north, after having spent the austral summer feeding along the Antarctic pack ice. It is assumed that these birds were moving south through Mozambican waters to then head north in the Atlantic Ocean. However, Vandevale (1988) noted that an overland nocturnal migration of Arctic Terns near Mogadishu, Somalia, in April (Ash 1983) and a single bird caught at night near Khartoum, Sudan, in May (Nikolaus 1984), along with records from the Ural Mountains (Russia), Black, Mediterranean and Red Seas, and even Kashmir (Vandevale 1988, Urban *et al.* 1986), indicate the possibility of at least some migration via the eastern Indian Ocean. Thus birds off Mozambique may have been heading north. Satellite-tracking juveniles and those breeding further east in the Palearctic should better establish the significance of the Indian Ocean as a migration route and non-breeding area.

BLACK TERN *Chlidonias niger*

An abundant Palearctic visitor to the southern African west coast in the austral summer, mostly in August–April, but some regularly remain in the austral winter (Brooke & Sinclair 1978, Maclean 1984, Sinclair & Ryan 2003). Uncommon on coasts of South Africa but



Figure 7. Black Tern *Chlidonias niger* (centre), Maputo Bay, Mozambique, 31 January 2015 (A. F. A. Hawkins)

recorded in small numbers off KwaZulu-Natal (Hockey *et al.* 2005). One record from the Malagasy region (Turner & Dowsett 1988, Safford & Hawkins 2013) and rare in East Africa with very few records (Britton 1980, Urban *et al.* 1986, Stevenson & Fanshawe 2002). No records in Mozambique.

On 9 November 2013 a juvenile Black Tern was observed on a pelagic trip off Inhaca Island, loosely associated with a group of *c.*50 Common Terns. The bird was in fresh plumage with charcoal-grey upperparts and, after being initially misidentified as a subadult Sooty Tern *Onychoprion fuscatus*, it was re-identified, followed for 20 minutes and some poor-quality photos were taken (see <https://ebird.org/view/checklist/S15630763>). Black upper breast-side patches were noted along with its smaller size compared to adjacent Common Terns and flatter-winged, buoyant flight action. This is the first record for Mozambique.

On 31 January 2015 a short pelagic trip was undertaken off Portuguese Island, Maputo Bay, during which *c.*300 Common Terns were seen and photographs taken. A. F. A. Hawkins subsequently found a Black Tern among one of the groups of terns in one of his photographs (Fig. 7). This bird does not show marked contrast in the age of the primaries and is probably an adult in winter plumage (Olsen & Larsson 2010). This is the second record for Mozambique.

SUBANTARCTIC SKUA *Stercorarius antarcticus*

Known off South Africa as a regular non-breeding visitor from its subantarctic breeding islands (Maclean 1984, Sinclair & Ryan 2003). Ryan *et al.* (2006) found the species in the Mozambique Channel near Europa Island, in the French Southern Ocean territories, but outside Mozambican waters, and Safford & Hawkins (2013) reported small numbers off Madagascar.

Hockey *et al.* (2005) mapped this species' range in Mozambique as coastal waters south of Inhaca Island, but there are few previous records to substantiate this. Clancey (1996) and Parker (2000) reported two in Mozambican waters, in August 1959 at Maputo (Brookeworth 1960) and in April 1968 off Inhaca Island (Jensen 1968). However, Lambert (2005) found 20 individuals on 17 dates, most of which were off Inhaca Island, but records were widely scattered with the northernmost off Quelimane.

All of my own records were made in 2015, when one was seen from shore near Tofo on 5 May, another single was north of Inhaca Island on 10 May and four were there on 13 June. In addition a single was seen off Tofo on 20 April 2015 (E. Marais pers. comm.) and another was video-recorded there on 7 April 2012 (H. Darrin pers. comm.). All were identified (relative to South Polar Skua *S. maccormicki*) by heavy build with broad wings, solid dark brown underparts and nape, and relatively narrow white band at bases of the primaries.

The species clearly ranges further north in Mozambique than has previously been documented. Rollinson (in press) observed a total of 32 birds, all in southerly locations east of Maputo. None was further north. It is interesting to note that, despite regular surveys offshore from Maputo, the bulk of the records was in 2015.

Acknowledgements

I thank Frank Hawkins for 'finding' the second Black Tern and for use of his photographs. Ross Hughes, Callan Cohen and Felix Koimburi were able field companions and shared in the findings reported herein. Dominic Rollinson reviewed this paper and provided access to his own, as yet unpublished, paper, and Etienne Marais, Angela Lund and Hannah Darrin availed me of details of unpublished sightings. Boat owners Jose Botte and Richard Martins and his family were excellent company on many long days at sea. Trevor Hardaker, Tony Tree, Neil Baker and Pete Morris helped with identification and ageing of birds. Tony Tree and Sam Jones made detailed comments on a draft submission. Arctic Tern ringing data are provided courtesy of the Danish Bird Ringing Centre at the Natural History Museum of Denmark, Univ. of Copenhagen, and thanks go to Tony Fox and J. Madsen for help to access this information.

References:

- Ash, J. S. 1983. Over fifty additions of birds to the Somalia list including two hybrids, together with notes from Ethiopia and Kenya. *Scopus* 7: 54–79.
- Avery, G. 1982. Results of beach patrols conducted in South Africa in 1981. *Cormorant* 10: 87–96.
- Bevanger, K. & Thingstad, P.-G. 1990. Decrease in some central Norwegian populations of the northern subspecies of the Lesser Black-backed Gull (*Larus fuscus fuscus*) and its possible causes. *Fauna Norv. Ser. C. Cinclus* 13: 19–32.
- Britton, P. 1980. *Birds of East Africa*. East African Natural History Society, Nairobi.
- Brooke, R. K. & Sinclair, J. C. 1978. Preliminary list of southern African seabirds. *Cormorant* 4: 10–17.
- Brooke, R. K. & Cooper, J. 1982. Seabirds of southern Mozambique - corrections. *Cormorant* 10: 58.
- Brooke, R. K., Cooper, J. & Sinclair, J. C. 1981. Additional records of seabirds on the coast of southern Mozambique. *Cormorant* 9: 30–40.
- Brookeworth, C. 1960. Notes on seabirds in harbours in Portuguese East Africa. *Ostrich* 31: 173–174.
- Bustnes, J. O., Moe, B., Helberg, M. & Phillips, R. A. 2013. Rapid long-distance migration in Norwegian Lesser Black-backed Gulls *Larus fuscus fuscus* along their eastern flyway. *Ibis* 155: 402–406.
- Clancey, P. A. 1970. Miscellaneous taxonomic notes on African birds XXIX. *Durban Mus. Novit.* 8: 375–390.
- Clancey, P. A. 1971. A handlist of the birds of southern Moçambique. *Mem. Inst. Invest. Cient. Moçambique Sér. A* 10: 148–309; 11: 1–69.
- Clancey, P. A. 1975. Miscellaneous taxonomic notes on African birds XLI. *Durban Mus. Novit.* 10: 189–210.
- Clancey, P. A. 1979. Miscellaneous taxonomic notes on African birds LIII. *Durban Mus. Novit.* 12: 1–17.
- Clancey, P. A. 1996. *The birds of southern Mozambique*. African Bird Books, Westville.
- Cooper, J., Crawford, R. J. M., Suter, W. & Williams, A. J. 1990. Distribution, population size and conservation of the Swift Tern *Sterna bergii* in southern Africa. *Ostrich* 61: 56–65.
- Crawford, R. J. M., Nel, D. C., Williams, A. J. & Scott, A. 1997. Seasonal pattern of abundance of Kelp Gulls *Larus dominicanus* at breeding and non-breeding localities in southern Africa. *Ostrich* 68: 37–41.
- Dickinson, E. C. & Remsen, J. V. (eds.) 2013. *The Howard and Moore complete checklist of the birds of the world*, vol. 1. Fourth edn. Aves Press, Eastbourne.
- Donnelly, B. G. 1974. The Lesser Black-backed Gull *Larus fuscus* in southern and central Africa. *Bull. Brit. Orn. Cl.* 94: 63–68.
- Egevang, C., Stenhouse, I. J., Phillips, R. A., Petersen, A., Fox, J. W. & Silk, J. R. 2010. Tracking of Arctic terns *Sterna paradisaea* reveals longest animal migration. *Proc. Natl. Acad. Sci. USA* 107: 2078–2081.
- Fijn, R. C., Hiemstra, D., Phillips, R. A. & van der Winden, J. 2013. Arctic Terns *Sterna paradisaea* from the Netherlands migrate record distances across three oceans to Wilkes Land, East Antarctica. *Ardea* 101: 3–12.
- Gochfeld, M., Burger, J., Kirwan, G. M., Christie, D. A. & Garcia, E. F. J. 2017. Greater Crested Tern (*Thalasseus bergii*). In del Hoyo, J., Elliott, A., Sargatal, J., Christie, D. A. & de Juana, E. (eds.) *Handbook of the birds of the world Alive*. Lynx Edicions, Barcelona (retrieved from www.hbw.com/node/54019 on 8 November 2017).
- Griffiths, A. M. & Sinclair, J. C. 1982. The occurrence of Holarctic seabirds in the African sector of the southern ocean. *Cormorant* 10: 35–44.
- Harrison, J. A., Allan, D. G., Underhill, L. G., Herremans, M., Tree, A. J., Parker, V. & Brown, C. J. (eds.) 1997. *The atlas of southern African birds*, vol. 1. BirdLife South Africa, Johannesburg.
- Harrison, P. 1983. *Seabirds: an identification guide*. Croom Helm, Beckenham.
- Hockey, P. A. R. & the Rarities Committee. 1996. Rare birds in South Africa 1993–1995. *Africa—Birds & Birding* 1(3): 65.
- Hockey, P. A. R., Dean, W. R. J. & Ryan, P. G. 2005. *Roberts—Birds of southern Africa*. Seventh edn. Trustees of the John Voelker Bird Book Fund, Cape Town.
- Jensen, R. A. C. 1968. Observations on migrants at Inhaca Island, Mozambique. *Ostrich* 39: 269–270.
- Jonsson, L. 1998. Baltic Lesser Black-backed Gull *Larus fuscus fuscus* – moult, ageing and identification. *Birding World* 11: 295–317.
- Kilpi, M. & Saurola, P. 1984. Migration and wintering strategies of juvenile and adult *Larus marinus*, *L. argentatus* and *L. fuscus* from Finland. *Orn. Fenn.* 61: 1–8.
- Kirk, J. 1864. On the birds of the Zambesi Region of eastern tropical Africa. *Ibis* 6: 307–339.
- Kohler, P. & Kohler, U. 1996. The Bazaruto archipelago, Mozambique, a site of potential international importance for Palearctic waterbirds. *Ostrich* 67: 165–167.
- Kromer, J.-L. 1998. A Sooty Tern *Sterna fuscata* breeding colony off northern Mozambique. *Bird Numbers* 7(3): 6–7.
- Kylin, H., Louette, M., Herroelen, P. & Bouwman, H. 2010. Nominate Lesser Black-backed Gulls (*Larus fuscus fuscus*) winter in the Congo basin. *Orn. Fenn.* 87: 106–113.
- Lambert, K. 1983. Sturmschwalbe (*Hydrobates pelagicus*) und Schwalbenmöwe (*Xema sabini*) vor der Küste von Moçambique. *Beitr. Vogelk.* 29: 12–16.
- Lambert, K. 2005. The spatial and seasonal occurrence of seabirds (Aves) off southern Mozambique. *Durban Mus. Novit.* 30: 45–60.

- Lashko, A. 2004. Population genetic relationships in the Roseate Tern: globally, regionally and locally. Ph.D. thesis. James Cook Univ., Townsville.
- Le Corre, M. & Safford, R. J. 2001. La Réunion and Îles Eparses. Pp. 693–702 in Fishpool, L. D. C. & Evans, M. I. (eds.) *Important Bird Areas in Africa and associated islands: priority sites for conservation*. Pisces Publications, Newbury & BirdLife International, Cambridge, UK.
- Lorentsen, S. H. 2007. [The national monitoring programme for seabirds. Results up to and including the breeding season 2007]. NINA Report 313. Norwegian Institute for Nature Research, Trondheim. (In Norwegian.)
- Maclean, G. L. 1984. *Roberts' birds of southern Africa*. Fifth edn. John Voelcker Bird Book Fund, Cape Town.
- Nisbet, I. C. T. & Ratcliffe, N. 2008. Comparative demographics of tropical and temperate Roseate Terns. *Waterbirds* 31: 346–356.
- Nikolaus, G. 1984. Further notes on birds new or little known in the Sudan. *Scopus* 8: 38–42.
- Olsen, K. M. & Larsson, H. 2010. *Terns of Europe and North America*. Bloomsbury, London.
- Parker, V. 2000. *The atlas of the birds of Sul do Save, southern Mozambique*. Avian Demography Unit, Cape Town & Endangered Wildlife Trust, Johannesburg.
- Parker, V. 2005. *The atlas of the birds of central Mozambique*. Endangered Wildlife Trust, Johannesburg & Avian Demography Unit, Cape Town.
- Randall, B. M. & Randall, R. M. 1984. Seabirds recorded in Algoa Bay during trips to and from St. Croix Island, South Africa. *Cormorant* 12: 63–70.
- Rollinson, D. P. in press. Seabird sightings off southern and central Mozambique, August–October 2015. *Bull. Afr. Bird Cl.* 25.
- Ryan, P. G. 1997. Gullbilled Tern. P. 773 in Harrison, J. A., Allan, D. G., Underhill, L. G., Herremans, M., Tree, A. J., Parker, V. & Brown, C. J. (eds.) *The atlas of southern African birds*, vol. 1. BirdLife South Africa, Johannesburg.
- Ryan, P. G., Graham, J. & Sutherland, A. C. 2006. Pelagic birding trips in the southern Mozambique Channel. *Bull. Afr. Bird Cl.* 13: 197–204.
- Safford, R. J. & Hawkins, A. F. A. (eds.) 2013. *The birds of Africa*, vol. 8. Christopher Helm, London.
- Sinclair, J. C. 1975. New distributional data 6: Gullbilled Tern *Gelochelidon nilotica*. *Ostrich* 46: 172.
- Sinclair, J. C. 1977. Black-naped Tern in Natal. *Bokmakierie* 29: 18–19.
- Sinclair, J. C. 1979. Birds at sea in the Indian Ocean. *Cormorant* 7: 7–10.
- Sinclair, I. & Ryan, P. G. 2003. *Birds of Africa south of the Sahara*. Struik Publishers, Cape Town.
- Stark, A. & Sclater, W. L. 1906. *The birds of South Africa*, vol. 4. R. H. Porter, London.
- Sten, I. 1969. Die Vogelberingung in Finnland im Jahre 1967. *Mem. Soc. Fauna Flora Fenn.* 45: 63–154.
- Stevenson, T. & Fanshawe, J. H. 2002. *The birds of East Africa: Kenya, Tanzania, Uganda, Rwanda, Burundi*. T. & A. D. Poyser, London.
- Tree, A. J. 2003. An example of the Indian Ocean race of Roseate Tern at Port Alfred. *Bee-eater* 54(1): 12–13.
- Tree, A. J. 2005. The known history and movements of the Roseate Tern *Sterna dougallii* in South Africa and the western Indian Ocean. *Mar. Orn.* 33: 41–47.
- Tree, A. J. 2006. An eastward extension of Kelp Gull breeding activity. *Bee-eater* 57(3): 58.
- Tree, A. J. & Klages, N. T. W. 2003. Status, biometrics, moult and possible relationships of the South African population of Roseate Tern. *Ostrich* 74: 74–80.
- Turner, D. A. & Dowsett, R. J. 1988. Additions and corrections to Afrotropical and Malagasy avifaunas. 1. Western Indian Ocean islands. *Tauraco* 1: 130–138.
- Urban, E. K., Fry, C. H. & Keith, S. (eds.) 1986. *The birds of Africa*, vol. 2. Academic Press, London.
- Underhill, L. G., Tree, A. J., Oschadleus, J. D. & Parker, V. 1999. *Review of ring recoveries of waterbirds in southern Africa*. Avian Demography Unit, Cape Town.
- Vandevale, F. J. 1988. Origins and migration of some Palaearctic terns wintering in Africa south of the Zambezi and Cunene rivers. *Gerfaut* 78: 131–150.
- Zimmerman, D. A., Turner, D. A. & Pearson, D. J. 1996. *Birds of Kenya and northern Tanzania*. Christopher Helm, London.

Address: BirdLife International, The David Attenborough Building, Pembroke Street, Cambridge, CB2 3QZ, UK, e-mail: Gary.Allport@birdlife.org