Update on status and records of Blue Swallow Hirundo atrocaerulea and other hirundines from Mozambique

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Update on status and records of Blue Swallow *Hirundo atrocaerulea* and other hirundines from Mozambique

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Summary.—We update knowledge of the status of seven hirundines in southern Africa, with special focus on Mozambique. Records in Mozambique of the globally threatened Blue Swallow *Hirundo atrocaerulea* have not previously been fully collated, but it is estimated that *c*.50 pairs breed, or 4–10% of the global breeding population, with key sites at Serra Choa, 'Penhalonga' farm near Manica and, probably, around Chimanimani. Further surveys of this species are urgently required to evaluate its status more fully. The first documented record of Pearl-breasted Swallow and details of a recent record of Greater Striped Swallow in Mozambique are presented (both species have been reported previously). The status of White-throated *H. albigularis* and Red-breasted Swallows *Cecropis semirufa*, both of which are poorly known in Mozambique, are updated and recent records discussed. The first documented record of Eastern Saw-wing *Psalidoprocne orientalis* in South Africa and a recent sighting in southern Mozambique are presented. The status of Mascarene Martin *Phedina borbonica* in southern Africa is also reviewed and details of a record in South Africa presented.

Of the 21 species of Hirundinidae (swallows and martins) in the southern African subregion (as defined by Hockey *et al*. 2005) 15 have been recorded in Mozambique. We update the status of seven of these species here. Four are regular in immediately adjacent parts of South Africa and Zimbabwe but are rare, little known and poorly documented in Mozambique: White-throated *Hirundo albigularis*, Pearl-breasted *H. dimidiata*, Red-breasted *Cecropis semirufa* and Greater Striped Swallows *C. cucullata* (Hockey *et al*. 2005). Another three are known to occur in Mozambique but are also poorly documented—Eastern Saw-wing *Psalidoprocne orientalis*, Blue Swallow *H. atrocaerulea* and Mascarene Martin *Phedina borbonica*.

With increasing focus on Mozambique by field ornithologists and ease of documentation with digital photography and sharing of observations via citizen science portals such as BirdLasser (https://www.birdlasser.com) and eBird (https://ebird.org/), there have been recent records of all seven of these little-known species. The purpose of this paper is to review and update existing information concerning their status in Mozambique and, in some cases, South Africa and the wider subregion. Blue Swallow *Hirundo atrocaerulea* is globally threatened (BirdLife International 2020a), present in important numbers in Mozambique and breeds at key sites amenable to protection, making the species of particular interest.

Methods

The main body of field work underpinning these records was undertaken in Mozambique by GA (for locations and other details, see Allport 2018; and Appendix), with additional observations by OH & ZH. Other records were drawn from eBird and the Southern African Bird Atlas Project (SABAP) and, where significant, the observers involved were contacted for details. Localities mentioned in the text are in Mozambique unless

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otherwise stated (see Appendix). Nomenclature largely follows Dickinson & Christidis (2014), with amendments from other authorities where relevant, including Hockey *et al*. (2005; the most comprehensive ornithological summary for the southern African subregion), and Gill *et al*. (2020; followed by most birders in the subregion).

BLUE SWALLOW *Hirundo atrocaerulea*

Blue Swallow is an intra-African migrant with a disjunct breeding range across Afromontane mist-belt grasslands in south-east DR Congo, Tanzania, far north-east Zambia, Malawi, eastern Zimbabwe, eastern South Africa and Eswatini (Evans & Barnes 2000, Evans & Bouwman 2010, Evans *et al*. 2015). It breeds in October–March in southern Africa and this population migrates north to spend the non-breeding season on the shores of Lake Victoria in DR Congo, Uganda and Kenya (Evans *et al*. 2015). The global population is small, just 1,000–2,499 mature individuals, with a declining trend and it is considered globally Vulnerable (BirdLife International 2020a). It occurs in Mozambique (Clancey 1996) but is poorly known and its conservation status has been assessed as Critically Endangered at the national level (Little 2013).

Breeding range and records.—To nest the species requires natural montane grassland at 890–2,300 m, typically above 1,500 m, with sinkholes, Aardvark *Orycteropus afer* burrows or disused mine shafts, in which the birds nest, usually solitarily. There are also a few records of nesting in barns and under bridges (Meikle 2010, Matsvimbo & Wachi 2014, Evans *et al*. 2016). Montane grassland is being converted to agriculture, potentially a major driver of the species' decline (Combrink & Little 2012, BirdLife International 2020a). Breeding density reaches 3–4 pairs/km^2 in prime habitat, e.g. in eastern Zimbabwe (Snell 1969, Wakelin *et al*. 2018) and efforts to improve existing nest sites and to create new ones, mimicking Aardvark holes, have proven successful (Maclean 1993).

In the southern African subregion the breeding range extends from the KwaZulu-Natal Midlands north through Mpumalanga, Eswatini and the eastern highlands of Zimbabwe

Figure 1. Blue Swallow *Hirundo atrocaerulea*, Mount Tsetserra, Manhica province, Mozambique, 12 December 2017; one of a pair prospecting a potential nest site at this location (Zak Pohlen)

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(Evans & Bouwman 2010, Evans *et al*. 2015). In Mozambique limited information is available, but it is known from, suspected or possibly occurs in, four regions as follows.

1. 'Eastern Highlands of Zimbabwe': the most significant and best-known area of occurrence in Mozambique lies in the uplands at the border with Zimbabwe, and considered to be part of the 'Eastern Highlands of Zimbabwe' breeding subpopulation by Evans *et al*. (2015), who estimated 620 birds in total. Clancey (1996) described it as 'relatively common' in Manica and Sofala provinces, occurring locally in suitable habitat from Espungabera north to the headwaters of the Pungwe River. However, no sources were cited by Clancey (1996) and no quantitative data were presented.

In the south of this region Beasley (1995) reported Blue Swallows in Chimanimani, but it is unclear if these were inside Mozambique. Jackson's (1973) visits were not in the breeding season, while Little (2013) did not visit Chimanimani but suggested that the species would not be found there due to disturbance; he did, however, flag one unnamed locality (19°37′30.8712″S, 32°52′30.0432″E; 1,780 m) as suitable, but probably also heavily disturbed. The account of Important Bird & Biodiversity Area 'Chimanimani Mountains (Mozambique)' (IBA MZ006: Parker 2001, BirdLife International 2020b) lists Blue Swallow as a trigger species for site selection. Timberlake *et al*. (2016) reported suitable habitat for Blue Swallows in the Chimanimani area but did not record any (their survey was possibly not in the right season); however, numerous Aardvark burrows were noted as potential nest sites. They considered there to be as much suitable habitat on the Mozambique side of Chimanimani as on the Zimbabwe side of the massif, suggesting that the breeding population there could be significant. Searches of apparently suitable short grasslands on the Mozambican side in December 2019 found no Blue Swallows or sinkholes (C. Gesmundo & Z. Pohlen *in litt*. 2020; https://ebird.org/checklist/S62136659). It may be that the quartzite sand soils in this part of the massif are unsuitable for sinkhole formation; Blue Swallows elsewhere on the massif, in Zimbabwe, were found in grasslands on schist (which are less common on the Mozambique side; Z. Pohlen *in litt*. 2020). There is, however, an anecdotal report of breeding in the buffer zone of the Reserva Nacional de Chimanimani in high-altitude grasslands (1,700 m) at Tantara (Z. Pohlen *in litt*. 2020). At least five were found slightly further north at Mt. Tsetserra in December 2017 (K. Coetzer *in litt*. 2017, https://ebird.org/checklist/S53126655; C. Gesmundo & Z. Pohlen *in litt*. 2017, https://ebird.org/checklist/S41246173). Two were apparently paired and were seen entering a hole in grasslands at 2,000–2,250 m, but no nest was found in a rapid and cautious inspection of the site.

Further north, there is a significant breeding population of Blue Swallows on a farm, 'Penhalonga', above an active bauxite mine operated by Mina Alumina Ltda., in the mountains north-west of Manica. The farm is in Mozambican territory but is usually accessed from Mutare, in Zimbabwe, with the result that its Blue Swallows have been reported via Zimbabwean channels but are little known in Mozambique (Meikle 2010, Matsvimbo & Wachi 2014; J. Meikle *in litt*. 2020). Little (2013) surveyed the area in November 2013 (mostly at 1,800 m) finding 43 Blue Swallows on transects. Three active nests were found (although locating nests was not the object of the survey) and the estimated population was 25–30 pairs. No sinkholes or Aardvark holes were found, and all active nests were in prospective mine holes; these may be the reason that this population has persisted, perhaps after the local Aardvarks were extirpated by hunting. Matsvimbo & Wachi (2014) visited the site in October 2013–March 2014 reporting *c*.20 swallows around the farm buildings, including juveniles. There has been no systematic survey of the breeding population at this important site, making this a priority.

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Further north, at least two were seen near Catandica in March 2003, with breeding considered possible (Parker 2005). Cizek (2009) gave more details concerning this area and suggested that Parker's records were more likely from the Serra Choa north-west of Catandica, where possibly as many as ten were seen hawking with Eastern Saw-wings over tall *Protea* grasslands on 17–19 March 2008, some of them juveniles (Cizek 2009). Little (2013) visited this area and found the majority of the 'isolated plateau' had been converted to agriculture, but he saw 13 birds in a remote grassland (18°02'26.63"S, 33°02'30.40"E) and two pairs, one of which was breeding at 1,403 m. The total population was estimated at 10–15 breeding pairs. Most recently 5–6 Blue Swallows, including a juvenile, were seen there on 5 December 2020. The area was considered to comprise suitable breeding habitat, not significantly converted for agriculture, and local breeding was considered probable. Local observers report the species is present every summer; that land use change is restricted to areas accessible via the limited network of access tracks; and that there is still a significant area of intact mist-belt grassland (P. Stramandinoli Branco & E. Marais *in litt*. 2021; https://ebird.org/checklist/S80242328).

Parker (2005) commented that all suitable habitat in the border region south of Catandica lies within Zimbabwe, but historical and recent observations, as reported above, suggest otherwise.

In summary, the potential area of occurrence in this border region is significant, stretching 175 km north to south and including several local areas of upland habitat within Mozambique mostly delimited to the west by bordering Zimbabwe. The key sites in this region are: Serra Choa, considered by Cizek (2009) to be the most significant area of suitable montane breeding habitat (above 1,200 m) for the species in Mozambique; the area was in pristine condition in 2008, more degraded by 2013 (Little 2013) but suitable breeding habitat remains in 2020; 'Penhalonga' farm above Manica; and the Chimanimani Mountains. A large part of the latter site is now protected within Reserva Nacional de Chimanimani (established 2003; Biofund 2020a). The records from Mt. Tsetserra reported above fall outside this reserve but within the Chimanimani Trans Frontier Conservation Area Buffer Zone (Ghiurghi *et al*. 2010).

2. Mt. Gorongosa (part of Gorongosa National Park since 2010; Biofund 2020b) is *c*.100 km east of the area described above. Tinley (1977) reported 40 km^2 of montane and submontane grassland above 1,400 m there, and it has been speculated that Blue Swallow breeds on its upper slopes (Parker 2001, Evans & Bouwman 2010). Access has been and still is difficult due to local security concerns, and as a result avifaunal data are few. Little (2013) reported third-party sightings of Blue Swallows from the mountain 'suspected [to be] on passage' but without details. Its presence is confirmed by a sight record of one on 12 December 2012 from an agricultural area on its lower slopes (E. Marais *in litt*. 2019). This site probably holds a breeding population of Blue Swallows and, based on the extent of suitable habitat, a potentially significant one. However, it should be noted that the species is clearly absent from Mt. Namuli where the rocky or peaty soils mean that rainwater immediately waterlogs the ground, depriving it of safe nest sites in the form of dry holes and burrows (Timberlake *et al*. 2009, Timberlake 2017), so it is possible that Mt. Gorongosa, a granitic inselberg like Mt. Namuli, is also unsuitable for breeding Blue Swallows.

3. The Kirk Range: Blue Swallow was recorded in the south-west Malawi / Mozambique frontier area centred on Mt. Tsangano in the early 1940s (Benson 1942; see Fig. 3 in Evans *et al*. 2015) but not since. There are no protected areas in Mozambican territory within this region (https://ibat-alliance.org/) and a cursory examination of Google Earth suggests there is little or no remaining natural high-altitude grassland, so the likelihood of a breeding

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population appears low, but surveys have been recommended (Evans *et al*. 2015) and would still be valuable.

4. Mulanje Mountains: 40–60 pairs breed in the Mulanje Mountain Forest Reserve in southern Malawi (Little 2013, BirdLife International 2020c) and there are small areas of suitable uplands (>1,200 m) on two mountains south-east of the massif, inside Mozambique; Mt. Milanje and a small peak north of Nacarre (15°42′33.4″S, 35°50′15.8″E). On Google Earth imagery, these areas each show *c*.5 km^2 of relatively pristine natural habitat, and could support a few pairs of Blue Swallows. Surveys of both sites in the breeding season would be of value.

Migration.—There is just one documented record of a Blue Swallow not in breeding habitat in Mozambique, which is undated but pre-1980, on the Indian Ocean coast at the Zambezi River mouth (Brown & Britton 1980); the record has been queried (Little 2013). However, it is very likely that a large percentage of the Blue Swallows breeding in southern Africa pass through Tete province en route north to spend the non-breeding season on the shores of Lake Victoria (see Fig. 6 in Evans & Bouwman 2010). There are, however, no sight records from well-watched localities such as Kruger National Park to suggest the route of overland passage (T. Hardaker *in litt*. 2020). There is no evidence that Blue Swallows possess any specific habitat preference on migration, so concentrations of migrants seem unlikely.

Numbers.—The estimate of *c*.100 breeding pairs in Mozambique (Evans & Barnes 2000) was thought too generous by Cizek (2009), an assertion partly based on Parker's plausibly incorrect statement that no suitable habitat lies within Mozambique borderlands (see above). Evans & Bouwman (2010; Table 2) estimated *c*.50 pairs/100 individuals in Mozambique, of which 30 pairs nest in 'strictly protected areas' and 20 pairs at unprotected sites, but gave no details of the locations concerned either in their text or in the supplementary materials online; it is presumed that the first group might be in the Reserva Nacional de Chimanimani. The only survey work enumerating populations in Mozambique was by Little (2013), who undertook a brief survey in November 2013 and estimated 35–45 pairs, based on his field data and reviews of known sites (Table 1).

TABLE 1
Estimated numbers of breeding Blue Swallows *Hirundo atrocaerulea* at sites in Mozambique.

Breeding site	**Pre-2013 estimates (Little 2013, Evans *et al*. 2015)**	**2013 estimate (Little 2013)**	**Updated estimate (this study)**
Catandica and Serra Choa	3–10 birds	10–15 pairs	Confirmed still present, breeding likely 2020
Manica, 'Penhalonga'	Unknown	25–30 pairs	No further data
Mt. Tsetserra	Unknown	0	1–3 pairs
Chimanimani	Unknown	Not visited	Breeding probable
Mt. Gorongosa	Unknown	Not visited	Single bird; breeding likely
Kirk Range	30 pairs	0	No further data; likely zero
Totals	**33–40 pairs**	**35–45 pairs**	***c*.50 pairs**

Based on Little (2013) and new information reported herein an estimate of at least 50 breeding pairs at known sites is reasonable. However, this does not include any birds from Chimanimani. Thus, given the species' range in Mozambique and its possible breeding density (Snell 1969) the estimate above of 50 pairs/100 individuals is probably a minimum and, despite this being an apparently small number, it nevertheless represents 4–10% of the global breeding population.

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It is also worth noting that Mozambican montane habitats may be of particular long-term value for the species as its higher altitude grasslands have generally not been planted with alien exotic pines *Pinus* sp. and *Acacia pycnantha*, which in Zimbabwe invade disturbed ground, including potential nest sites. Therefore, in the absence of these alien invasive plants, grasslands in Mozambican parts of the Eastern / Manica Highlands could be even more important for the species' conservation, although they encompass smaller areas than in Zimbabwe (A. Cizek *in litt*. 2020).

Targeted surveys of the key areas outlined above—especially Serra Choa and surrounding plateaux, the uplands around Manica, Reserva Nacional de Chimanimani and the Mt. Gorongosa section of Gorongosa National Park—are needed to update the status and numbers of this globally threatened species in Mozambique, and to formulate conservation measures at the key sites where it breeds.

EASTERN SAW-WING *Psalidoprocne orientalis*

Treated as a species by Hockey *et al*. (2005) comprising four subspecies across Africa (Hall & Moreau 1970) of which two occur in the southern African subregion. *P. o. percivali* occurs in southern Malawi, eastern Zimbabwe, and central Mozambique south to the Save River, adjacent to the Eastern Highlands and eastern Mashonaland Plateau of Zimbabwe (Hockey *et al*. 2005, Parker 2005; A. Cizek *in litt*. 2020). It is distinguished from the more widespread (and sometimes considered conspecific) Black Saw-wing *P. prisoptera holomelas* by its white underwing-coverts (Sinclair & Ryan 2010).

Records from the SABAP2 database (http://sabap2.birdmap.africa/) show *P. o. percivali* to be more frequent within its known range during the austral summer (November–March) while the extent of its non-breeding grounds is not certainly known, although speculated to be in Mozambique (Irwin 1981, Harrison *et al*. 1997). Clancey *et al*. (1969) reported it at Inhaminga in June–July with many other aerial feeders (including Mascarene Martin; see below), one of the few non-breeding season records of this subspecies (Hockey *et al*. 2005).

Figure 2. Eastern Saw-wing *Psalidoprocne orientalis percivali*, Phinda Private Game Reserve, KwaZulu-Natal, South Africa, 8 October 2016; note distinctive white underwing-coverts. The first record of this subspecies for South Africa (Daryl Dell)

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Two recent records of *percivali* are from October/November 2016. The first was in northern KwaZulu-Natal, South Africa, where one in mid-primary moult was photographed by DD at Imagine Pan, Phinda Private Game Reserve on 8 October 2016 (Fig. 2). This is the first documented record of this taxon in South Africa. Another was seen in Maputo on 5 November 2016 feeding alone, flying low over the short grass of a school playing field, showing its clean white underwing-coverts. The bird was watched for 30 minutes in early morning but was not seen subsequently despite searches (https://ebird.org/checklist/S68432656; G. Allport *in Bull. Afr. Bird Cl*. 24: 108–109).

These two records were 500–700 km south of the previous southernmost localities and at a season when this taxon might be expected to be returning to its breeding areas. Whether these records indicate an as yet undocumented regular southerly movement within southern Mozambique and eastern South Africa in the non-breeding season or if they were simply 'nomadic' movements with other hirundines is unclear (a Mascarene Martin was also recorded on the same day at Phinda; see below).

MASCARENE MARTIN *Phedina borbonica*

Two subspecies are recognised; the nominate on Mauritius and Reunion, and *P. b. madagascariensis* breeds in Madagascar and makes local movements, as well as long-distance migrations in the non-breeding season (mainly June–August) when it has been found at widely scattered sites mainly in coastal East Africa; south-east Kenya, Pemba Island (off Tanzania), Malawi, and central Mozambique (Safford & Hawkins 2013; D. A. Turner *in litt*. 2020).

Benson (1944) was first to document the species on mainland Africa where 'hundreds' were observed at Lake Chilwa, southern Malawi, on 28 June 1944. Clancey *et al*. (1969) were next to record the species in the southern African subregion at Inhaminga, Sofala province, during 16 June–13 July 1968 (note that the subregion is confusingly referred to as the 'South African region' by Clancey *et al*. 1969). Nine specimens were collected and it

Figure 3. Mascarene Martin *Phedina borbonica*, Macaneta, Maputo Province, Mozambique, 18 May 2020; note this bird shows streaking on the undertail-coverts, a feature given for Brazza's Martin *P. brazzae*, a possible vagrant to the subregion (Sinclair & Ryan 2010), but which was excluded by its larger size compared to nearby Lesser Striped Swallows *Cecropis abyssinica* and call (https://www.xeno-canto.org/475668) (Gary Allport)

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was subsequently reported as having been present 'in large numbers' (Clancey 1996). It was not recorded in the subregion again until 5–9 July 1997 when 20–100 per day were seen in groups of 3–10 between Dondo and Inhamitanga (Cohen *et al*. 1997), followed by sightings in Vilanculos Coastal Wildlife Sanctuary of three in June 2002 and another individual there in winter 2004 (Read *et al*. 2014). An area of more regular occurrence was then found in the lowlands between Beira / Dondo and the Zambezi Delta inland to Inhaminga, in April–September, with an estimated 1,000 or more birds in a wide range of habitats (Parker 2005).

None was recorded during atlas work further south in Mozambique (Parker 2000) but it was later found south of the Save River in *Brachystegia* woodland near Panda in July 2001 (Spottiswoode & Ryan 2002), with subsequent irregular anecdotal reports from the same area, but no more documented records. Further west, one was seen in a mixed group of hirundines at Crooks Corner, Kruger National Park, on 1 August 2002, the first record for South Africa (S. L. James *in litt*. to C. Cohen 2002, Hockey *et al*. 2005, but was not submitted to the BirdLife South Africa National Rarities Committee; T. Hardaker *in litt*. 2019). To the south, a flock of *c*.20 was in the Limpopo floodplain, south-west of Xai-Xai on 28 July 2014 (M. Booysen *in litt*. 2015; https://www.facebook.com/photo.php?fbid=855274861151821&set=a.855274844485156&type=3&theater&ifg=1) and there were a small number of reports in the adjacent littoral in the austral winter, mostly without details, except one at Zona Braza, near Xai-Xai on 11 August 2018 (K. Coetzer *in litt*. 2018; https://ebird.org/checklist/S54040448). A single was recorded from a fishing vessel at sea *c*.100 km east of Inhambane on 27 September 2015 (Rollinson 2018)—presumably on return migration to Madagascar—and most recently a bird in advanced primary moult was at Macaneta on 18–19 May 2019 (GA, OH & ZH *in Bull. Afr. Bird Cl*. 26: 241; https://ebird.org/checklist/S56490728; Fig. 3).

The bird at Macaneta is the southernmost record in Mozambique, but there is one other undocumented record from further south, a single seen by DD in Phinda Private Game Reserve, northern KwaZulu-Natal, South Africa, on 8 October 2016 (see Eastern Saw-wing above). There are no photos, but the bird was seen well in a mixed flock of swallows and swifts, and noted as larger than the accompanying Lesser Striped Swallows (thus too large to be Brazza's Martin), medium brown above, and paler and heavily streaked below. This is the second report for South Africa.

WHITE-THROATED SWALLOW *Hirundo albigularis*

Uncommon to locally common breeding visitor to southern Africa's uplands, arriving late July–September, with peak breeding activity in October–December. It departs in mid April and May, moving north and north-west to Angola, Zambia, south-east DR Congo and, possibly, Tanzania (Hockey *et al*. 2005).

A breeding record reported from Beira (mentioned by Clancey 1996, and detailed in Sclater 1911) seems likely to reflect confusion with Wire-tailed Swallow *H. smithii* (Parker 2005). The first documented record for Mozambique was by Jackson (1973) who found it common along upland watercourses in the Mucrera watershed of Chimanimani in August–September (ten collected; Natural History Museum, Bulawayo). Clancey (1996) described it as marginal in southern Mozambique, with a few records on the border with Zimbabwe in the breeding season (Beasley 1995). Most recently, 4–6 birds were seen at two localities in Chimanimani in December 2019 (Z. Pohlen *in litt*. 2020; https://ebird.org/checklist/S62136659, https://ebird.org/checklist/S62165776).

Further north, it was reported by Parker (2005) in south-west Tete Province in January, July and August 1992 (S. Edwards *per* V. Parker), in flocks of up to 35 at Cahora-Bassa Dam in June 2000 (Douglas 2002), and a single at nearby Dongo in December 2017 (M. Costeira da Rocha *in litt*. 2017; https://ebird.org/checklist/S41043124). These birds all seem likely to

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be non-breeders or on passage and, like Blue Swallow (see above), this species probably crosses the Zambezi Valley in Tete Province on its north–south migration.

There are four recent records from the littoral (Table 2), which suggest it is a rare migrant. These are most likely to be birds on passage from breeding areas further south-west, and were detected as a result of increased observer coverage rather than due to a change in status. It is notable that the records from Macaneta in May 2019 coincided with a single Pearl-breasted Swallow *H. dimidiata* and Mascarene Martin at the same site.

TABLE 2
Recent records of White-throated Swallow *Hirundo albigularis* from the Mozambique littoral.

Date	Location		Source
14 October 2011	Beira	1	C. Randler (*in litt*. 2011; https://ebird.org/checklist/S59244273)
8 February 2015	Maputo	1 juv	GA (pers. obs.; https://ebird.org/checklist/S21721550)
15 September 2016	Machangulo	1	R. Swart (*in litt*. 2016; https://ebird.org/checklist/S53562167)
19 May 2019	Macaneta	1	OH & ZH (pers. obs. 2019; https://ebird.org/checklist/S56478522)
20 May 2019	Macaneta	2 ad/juv	GA (pers. obs. 2019; https://ebird.org/checklist/S21721550)

PEARL-BREASTED SWALLOW *Hirundo dimidiata*

Occurs in Angola, Zambia, south-east DR Congo, south-west Tanzania (just one record), Malawi (west of the Rift Valley) and in five fairly discrete areas of southern Africa, north Botswana, north-east Zimbabwe, central Namibia, and north-east and southern Cape province of South Africa (Urban *et al*. 1992, Hockey *et al*. 2005). It is probably mainly resident, with some post-breeding movements in the north, but is migratory in the Cape south of *c*.26°S. There is an apparent influx to northern Botswana, Zambia and DR Congo in the non-breeding season (mainly May–July), with a notable peak in Zimbabwe in July (Tree 1986). It occurs in varied habitats including grassland, scrub, broadleaf woodland, miombo edge and clearings, cultivation, and habitations, often near water, normally in pairs or small groups, rarely up to *c*.100 (Hockey *et al*. 2005).

Its status in Mozambique is unclear. Clancey (1996) noted that the species was recorded by Kemp at Pafuri on the South Africa / Mozambique border, stating that it 'Almost certainly occurs occasionally as a non-breeding visitor' but no records in Mozambique were known at the time. The species was not recorded by Parker (2000), while an undocumented report from Beira was considered unlikely (Parker 2005), and it has not been recorded by the SABAP in Mozambique. However, Urban *et al*. (1992) stated that Pearl-breasted Swallow occurs in western Mozambique and mapped its range as including all of the western Zambezi Valley, mostly in Tete province. None of the references cited by Urban *et al*. (1992) mentioned records for this area, indeed in a comprehensive review of the species Benson (1949) stated 'I have failed to trace any records from Basutoland or Portuguese East Africa [Mozambique]', and none was mapped by Hall & Moreau (1970) in Mozambique. Possibly presence was assumed by Urban *et al*. (1992) based on confirmed records both to the north, in Zambia and Malawi, and south in Zimbabwe, of the Zambezi Valley, but extensive field work in Tete province by Parker (2005) yielded no records. Hockey *et al*. (2005) did not include Mozambique in the species account under Distribution, but confusingly it is mentioned in Geographical Variation under subspecies *marwitzi* '…Zimbabwe, extreme w Mozambique, and e Limpopo province…' and 'Extralimitally to Angola, Zambia, n Mozambique…' but no specific sources were given to underpin reports in Mozambique.

However, there are three recent records in eBird, of which one is supported by field notes and photographs that document the first record for Mozambique. On

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19 May 2019 OH & ZH were searching for a Mascarene Martin seen the previous day at Macaneta. Several hirundines were seen perched on overhead wires, including Lesser Striped Swallows *Cecropis abyssinica*, a White-throated Swallow, the Mascarene Martin and a Pearl-breasted Swallow. The latter resembled a Northern House Martin *Delichon urbicum* but lacked a white rump. It conveniently lifted its wings to reveal the distinctive white underwing-coverts confirming the identification (Fig. 4). The bird was not seen again despite searches the next day. Its occurrence fits with the timing of the northbound post-breeding movement outlined above (Tree 1986).

Figure 4. Pearl-breasted Swallow *Hirundo dimidiata*, Macaneta, Mozambique, 19 May 2019; the first documented record for Mozambique (Olivier Hamerlynck)

In addition, there is a sighting of two at Pafuri, just 200 m inside Mozambique, on 31 March 2017 (A. Hogue & H. Stevens *in litt*. 2017; https://ebird.org/checklist/S37103572) and four at Massinghir Dam, near Limpopo National Park, on 8 August 2018 (K. Coetzer *in litt*. 2018; https://ebird.org/checklist/S49230616). These two records lack supporting details but fit the expected pattern of occurrence in the South Africa border region of Mozambique as predicted by Clancey (1996).

RED-BREASTED SWALLOW *Cecropis semirufa*

Widespread in equatorial Africa and a migrant to northern and western parts of southern Africa, nesting in the austral summer (September–April). Irwin (1981) noted that Mosque Swallow *C. senegalensis* generally replaces it at lower elevations in Zimbabwe, notably in the major river valleys of the Southeast Lowveld.

National and subregion accounts (Clancey 1996, Parker 2000, 2005, Hockey *et al*. 2005) report this species to be of very restricted distribution in Mozambique (*contra* the map in Urban *et al*. 1992). It was first recorded in Rio Savane, near Beira, on 15 August 1968 when O. E. Baddeley collected two at a nest (Clancey 1996) and 1–2 pairs were found breeding by R. K. Brooke at Vila Pery (= Chimoio; no year given; Clancey 1996). More recently, Parker (2000) found the species along the Mozambique border with South Africa abutting Kruger National Park, at two localities on the south side of the Save Delta, and at three in the Save and Gorongosa basins slightly further north (Parker 2005). He also cited two further records, from near the Zimbabwe border in Tete province and the southern Zambezi Valley, but discounted others from Ocitene and Villa Ulungue, Tete province (Herdam 1994), suggesting they involved confusion with Red-rumped Swallows *Hirundo daurica*. Parker (2005) found the latter to be an uncommon summer migrant around marshes on the Angonia Plateau of north-east Tete province. There is a recent record from the Maputo area of a pair attempting to nest in a culvert at Macaneta on 31 October 2015 (GA & J. Allport; https://ebird.org/checklist/S25669150), but the species was not seen thereafter despite regular coverage of the site until 2019.

Across its range Red-breasted Swallow is mostly encountered in pairs where suitable nest sites are available, usually in road culverts or other concrete structures; the species is quite

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striking and not easily overlooked. It is likely, therefore, that recent records in Mozambique indicate a range expansion probably in response to infrastructure development, resulting in increased availability of man-made nest sites (especially road culverts using concrete pipes), and also possibly due to woodland clearance and fragmentation, creating more of its favoured open areas (Jackson & Spottiswoode 2004). In South Africa there has been a significant range extension into the littoral plain of north-east KwaZulu-Natal, with birds occupying man-made structures for breeding (Hockey *et al*. 2005).

This species is therefore likely to have extended its range into the Mozambique littoral during the last 50 years, but it remains very uncommon. There is a sharp contrast in frequency along the border with South Africa, especially abutting Kruger National Park, where there is a high reporting rate in SABAP from the park's lowlands, but this rapidly falls away to nothing within a few kilometres across the Mozambique border (SABAP2 database). There is sufficient observer coverage in this part of Mozambique to be confident that it is a true difference in abundance.

GREATER STRIPED SWALLOW *Cecropis cucullata*

This intra-African migrant is a near-endemic breeder to the southern African subregion, nesting in the austral summer across open montane and coastal lowland grasslands of central and southern South Africa. It also breeds in Lesotho and western Eswatini, Namibia, and widely across the Zimbabwean plateau above 1,200 m, but is numerous only in the Manica Highlands (Irwin 1981, Hockey *et al*. 2005). It spends the austral winter in southern DR Congo and Zambia (Urban *et al*. 1992), and the latest arrivals in the austral spring are in the south-east of the breeding range, e.g. September–October in Eswatini (Parker 1994) and KwaZulu-Natal (Cyrus & Robson 1980); migration probably follows a westerly route (Harrison *et al*. 1997).

Status in Mozambique is unclear. It was reported breeding on the Mozambique / Zimbabwe border at 'Inyanga' by Snell (1969; now Nyanga, Zimbabwe, the nearest border area being adjacent to Serra Choa; see Blue Swallow above) and has been seen as a migrant in adjacent South African Kruger National Park and in northernmost KwaZulu-Natal (Harrison *et al*. 1997, SABAP2 database). Based on this—and along with several other species—Clancey (1996) reported that it 'Almost certainly occurs occasionally in Mozambique', which may be true but there are no documented records in Parker (2000, 2005), the SABAP2 database or eBird. Cizek (2009) reported a single, in rolling grasslands of Serra Choa in March 2008, as the first record for Mozambique. The observer is familiar with the species and there is no reason to doubt the sighting, but there is no documentation. Also, the species is included without details in the bird list for Chimanimani (Timberlake 2017).

The only detailed report is recent. On 31 March 2019, two adults were seen in a mixed group of aerial feeders around a small river bridge on the main road (N1) north of Manhica (25°09'3.6"S, 32°48'25.2"E). Behaving as a pair, they were seen entering a culvert under the main road several times. The birds were seen well and their larger size was clearly discernible alongside Lesser Striped Swallows, while the smaller stripes on the breast and overall paler coloration made the identification clear (J. Buggs-Balmer *in litt.* 2019). This sighting appears to be of a breeding pair late in the season.

The species' westerly migration route makes it less likely that Greater Striped Swallow would wander into Mozambique than might be expected based on its abundance and migratory habits in the subregion; but a vagrant spring overshoot in September–October seems the most likely period for the species in Mozambique, making it perhaps surprising that this record involved a breeding pair.

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Discussion

The distributional limits of all of the species discussed above, except Mascarene Martin and Eastern Saw-wing, coincide with southern Mozambique's international borders with South Africa and Zimbabwe in this part of their ranges, and this boundary is characteristic of a suite of other bird species too. These limits follow the boundary between two of the eight biogeographical regions identified in Africa based on cluster analyses of bird distributions (Linder *et al*. 2012). The 'South African' region lies inland on uplands to the west, and the 'Zambezian' savanna region covers the Mozambique littoral to the east; the boundary represents a step-change in climate, elevation and vegetation types.

The position of the current political borders of Mozambique with South Africa and Zimbabwe were determined in the late 19th century by the British and Portuguese governments. The borderlands were surveyed in detail by both parties and the delineation was based on the prevailing realities of colonial power (Pakenham 1990, Roque 2010). Portuguese colonisation was effectively maritime at that time, based around a series of coastal settlements, with expeditionary, piecemeal occupation of the littoral, maintaining agricultural interests inland but with a strong focus on coastal trading. In contrast, British occupation was focused on lucrative mineral interests in the Highveld of modern-day Mpumalanga and Gauteng provinces, South Africa, and Britain had the upper hand in negotiations with the Portuguese state, which was then near-bankrupt (Pakenham 1990). It is a remarkable coincidence that these two competing colonial interests met at a border coinciding with a clear biogeographical boundary.

All the species reported here are members of the guild of aerial insectivores, however, it is still notable that there have been several records of locally rare species together in very short periods of time at certain sites. Clancey *et al*. (1969) first noted Mascarene Martin in the region at Inhaminga among a huge concentration of aerial feeders, but records of Eastern Saw-wing and Mascarene Martin at Phinda were not apparently part of larger movements with no notable influxes of other species (DD pers. obs). Records of Mascarene Martin, White-throated and Pearl-breasted Swallows at Macaneta were the only hirundines present at the time (except locally breeding Lesser Striped Swallows). These exceptional rarities used a short section of wire over three days, with no similar records at this well-watched locality before or since. Co-occurrence of this sort is hard to explain.

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Appendix: Gazetteer of localities mentioned in the text.

Locality	**Coordinates**
Mozambique	
Catandica	18°03′40.0″S, 33°10′58.0″E
Dondo	19°36′54.7″S, 34°43′43.9″E
Espungabera	20°26′55.7″S, 32°46′30.5″E
Inhaminga	18°25′04.1″S, 35°01′45.4″E
Inhamitanga	18°13′12.0″S, 35°09′55.4″E
Maputo	25°56′38.8″S, 32°36′54.9″E
Mt. Gorongosa	18°25′37.6″S, 34°06′07.3″E
Mt. Milanje	16°05′02.4″S, 35°48′09.7″E
Mt. Namuli	15°22′14.4″S, 37°03′01.8″E
Mt. Tsetserra (or Tsetsera)	19°23′34.3″S, 32°47′32.9″E
Panda	24°03′56.5″S, 34°43′50.7″E
'Penhalonga' Farm	18°49′43.47″S, 32°43′21.20″E
Serra Choa	*c*.17°59′17.6″S, 33°01′13.4″E
Tantara	19°37′29.47″S, 32°52′36.27″E
South Africa	
Crooks Corner, Kruger National Park	22°25′34.5″S, 31°18′27.1″E
Imagine Pan, Phinda Private Game Reserve	27°48′30.6″S, 32°20′45.6″E
Malawi	
Lake Chilwa	15°19′47.1″S, 35°42′35.3″E

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