

## Benguela Current Forage Fish Workshop 2 - 4 November 2020 – Online via GoToMeeting

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### South Africa's Seabirds – Distribution, Foraging, Population Trends and Status

AB Makhado, BM Dyer, M Masotla, L Upfold and RJM Crawford

#### **Species and distributions**

Fifteen species of seabird breed in South Africa (Hockey et al. 2005). The Great White Pelican *Pelecanus onocrotalus*, White-breasted Cormorant *Phalacrocorax lucidus*, Grey-headed Gull *Larus cirrocephalus* and Caspian Tern *Hydroprogne caspia* breed at inland as well as coastal localities. The other eleven species breed only along the coast between the Orange River and Algoa Bay, in the southern part of the Benguela Current Large Marine Ecosystem (BCLME). Seven species (African Penguin *Spheniscus demersus*, Cape Gannet *Morus capensis*, Cape *P. capensis*, Bank *P. neglectus* and Crowned *Microcarbo coronatus* Cormorants, Hartlaub's Gull *L. hartlaubii* and Damara Tern *Sternula balaenarum*) and two subspecies (Kelp Gull *L. dominicanus vetula* and Greater Crested (Swift) Tern *Thalasseus bergii bergii*) are endemic to the BCLME. In the southern hemisphere, Leach's Storm Petrel *Oceanodroma leucorhoa* breeds only at a few islands in the southern BCLME, but it has an extensive breeding distribution in the northern hemisphere (BirdLife International 2020). The Roseate Tern *S. dougallii* has a wide breeding distribution in the Atlantic, Indian and western Pacific Oceans (BirdLife International 2020) but in southern Africa only breeds at a few localities along South Africa's south coast (Hockey et al. 2005).

Most of the seabirds that breed around mainland Southern Africa are resident in the BCLME region, may disperse north along the west and east coasts of Africa and occasionally cross waters of the Atlantic and Indian Oceans (Hockey et al. 2005). Exceptions include the four species that also utilise inland waters (Great White Pelican, White-breasted Cormorant, Grey-headed Gull, Caspian Tern); Damara Terns, which migrate north along the African coast to the Gulf of Guinea in their non-breeding season (Braby et al. 1991), as Cape Gannets, especially immature birds, formerly did (Broekhuysen et al. 1961); those piscivores that range into the west Indian Ocean (Roseate Tern) or follow the 'sardine run' eastward from South Africa's south coast to Kwa-Zulu Natal (KZN) in the austral winter (African Penguin, Cape Gannet, Cape Cormorant, Kelp Gull, Greater Crested Tern); and Leach's Storm Petrel, many of which migrate south from the northern hemisphere in the austral summer. Other than Leach's Storm Petrel, which has an oceanic distribution, and those species that can feed inland, the BCLME's seabirds mostly feed in coastal waters or over the continental shelf with Cape Gannet and Kelp Gull able to move farther offshore than the others.

#### **Foraging and food**

Great White Pelicans and the gulls feed near the sea surface, along the shoreline, at islands and in coastal waterbodies. They are also known to forage in coastal croplands (Crawford et al. 1995). Leach's Storm Petrels too are feeders at the sea surface. Gannets and terns plunge from the air onto their prey, whereas African Penguins and the cormorants dive from the surface to pursue their prey and can feed in deeper water than the other species (e.g. Berruti et al. 1989, Hockey et al. 2005, Ludynia et al. 2010, Pichegru et al. 2009, Cook et al. 2012).

African Penguins, Cape Gannets, Cape Cormorants and Greater Crested Terns often feed in large flocks on abundant schooling fish, such as sardine *Sardinops sagax* and anchovy *Engraulis encrasicolus* (e.g. Crawford et al. 2011, 2019; Hamman et al. 2012, Green et al. 2014). Bank Cormorants are benthic feeders on rock lobsters *Jasus lalandii* (a high energy food item), a wide variety of fish (the bearded goby *Sufflogobius*

*bibarbatus* being an important component of their food in Namibia) and cephalopods (Dyer et al. 2019). Crowned Cormorants and White-breasted Cormorants feed mainly on inshore and estuarine fish such as Clinidae, Gobiidae, Mugilidae and Sparidae (Hockey et al. 2005, Crawford et al. 2012, 2013). Leach's Storm Petrels catch small pelagic fish, squid and planktonic crustaceans. Great White Pelicans and Kelp Gulls capture fish and other seabirds; Kelp Gulls also eat marine crustaceans, molluscs and animal carcasses. Hartlaub's and Grey-headed Gulls catch zooplankton, small fish and coastal invertebrates. The four terns feed mainly on zooplankton and small fish. Cape Gannets, Great White Pelicans and Kelp Gulls feed on fish or offal discarded by fisheries; Pelicans and the three gull species also scavenge at rubbish tips and the gulls will also frequent the food outlets (Hockey et al. 2005). The different distributions of the seabirds (both horizontally and by depth) and their assorted feeding strategies ensure considerable partitioning of their diets, although abundant prey are fed upon by a variety of species.

### **Population trends and conservation status**

There were recent large decreases in the South African populations of African Penguin, Cape Cormorant and Bank Cormorant, whereas those of Cape Gannet and Greater Crested Tern increased (Crawford et al. 2015, 2016, Sherley et al. 2019, 2020). The three that decreased exhibit behavioural inertia and have restricted foraging ranges when breeding. Conversely, the two that increased show more plasticity and are able to range over wide areas or move between breeding localities (Crawford et al. 2014). However, off northwest South Africa the numbers of all five species decreased markedly. These seabirds all compete with fisheries for food and it is thought that movement of forage resources away from the northern colonies led to a mismatch in the distributions of their breeding localities and prey and to attempts by several species to establish or augment colonies on the southern mainland closer to food resources. It is also likely, because many fishing plants are located in the northwest, that there was increased competition between seabirds and fisheries for prey as forage resources moved south and east (Crawford et al. 2015). There were similar shifts to the south and east in the distributions of three seabirds that do not compete with fisheries for prey (Crowned Cormorant, White-breasted Cormorant, Kelp Gull), suggesting some environmental forcing, but decreases of these species off northwest South Africa were less severe than for those that compete with fisheries and their populations in South Africa remained stable or increased in the long term (Crawford et al. 2015). There has been a large decrease in Damara Terns breeding in northwest South Africa (Crawford et al. 2018).

There has been a deteriorating conservation status of seabirds in South Africa across four assessments made between 1976 and 2015 (Table 1). In 1976, seven species were listed as Vulnerable and the others as Least Concern. In 2015, two were Critically Endangered, four Endangered, three Vulnerable, one Near-threatened and five Least Concern.

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**Table 1.** Historical classifications of the conservation status of South Africa's breeding seabirds.

Source	Conservation status*			
	Siegfried et al. (1976)	Brooke (1984)	Barnes (2000)	Taylor et al. (2015)
African Penguin <i>Spheniscus demersus</i>	Vulnerable	Vulnerable	Vulnerable	Endangered
Leach's Storm Petrel <i>Oceanodroma leucorhoa</i>			Occasional breeding species	Critically Endangered <sup>#</sup>
Great White Pelican <i>Pelecanus onocrotalus</i>	Vulnerable	Rare	Near-threatened	Vulnerable <sup>§</sup>
Cape Gannet <i>Morus capensis</i>	Least Concern	Least Concern	Vulnerable	Vulnerable <sup>@</sup>
Cape Cormorant <i>Phalacrocorax capensis</i>	Least Concern	Least Concern	Near-threatened	Endangered
Bank Cormorant <i>P. neglectus</i>	Vulnerable	Least Concern	Vulnerable	Endangered
Crowned Cormorant <i>Microcarbo coronatus</i>	Vulnerable	Least Concern	Near-threatened	Near-threatened
White-breasted Cormorant <i>P. lucidus</i>	Least Concern	Least Concern	Least Concern	Least Concern
Kelp Gull <i>Larus dominicanus vetula</i>	Least Concern	Least Concern	Least Concern	Least Concern
Hartlaub's Gull <i>L. hartlaubii</i>	Least Concern	Least Concern	Least Concern	Least Concern
Grey-headed Gull <i>L. cirrocephalus poicephalus</i>	Least Concern	Least Concern	Least Concern	Least Concern
Caspian Tern <i>Hydropogone caspia</i>	Vulnerable	Rare	Near-threatened	Vulnerable <sup>§</sup>
Greater Crested (Swift) Tern <i>Thalasseus b. bergii</i>	Least Concern	Least Concern	Least Concern	Least Concern
Roseate Tern <i>S. dougallii</i>	Vulnerable	Endangered	Endangered	Endangered <sup>§</sup>
Damara Tern <i>Sternula balaenarum</i>	Vulnerable	Rare	Endangered	Critically Endangered <sup>#</sup>

\*Classifications of Least concern are assumed from their non-classification in other categories

<sup>#</sup>Globally Vulnerable (IUCN 2020)

<sup>§</sup>Globally Least Concern (IUCN 2020)

<sup>@</sup>Globally Endangered (IUCN 2020)