

Cormorants 3E

Cormorants are predominantly black birds with slender bodies, short legs and webbed feet. Four species are encountered along the coast of South Africa. Three of these are seabirds endemic to South Africa – the Cape Cormorant, Bank Cormorant and Crowned Cormorant. The Whitebreasted Cormorant feeds mainly in estuaries and freshwater bodies, although there is a marine population that feeds in the open ocean.

Cormorants are most abundant on the west coast of South Africa where the highly productive, cold Benguela upwelling system provides the birds with ample food. Like penguins, cormorants are pursuit divers, diving into the water in pursuit of their prey. They use their feet to propel themselves underwater. But unlike penguins their feathers are not waterproof and when they get wet the extra weight helps cormorants to dive deeper. After a dive they clamber onto rocks where they hold their wings out to dry.

The availability of breeding sites is vital for determining seabird abundance and distribution. Cormorants are colonial breeders, and breed mainly on islands, artificial guano platforms or

inaccessible mainland sites. This is in an effort to avoid predators. The main breeding season for Cape Cormorants is between September and February, while Bank Cormorants and Crowned Cormorants breed throughout the year.

The Cape Cormorant (*Phalacrocorax capensis*) is the most abundant seabird in the region. It is black with an orange-yellow gape of the bill and a turquoise eye. The Cape Cormorant breeds at 69 different sites between Namibia and the Eastern Cape Province, although it does range as far north as Lobito, Angola during the winter months. Cape Cormorants regularly undertake migrations up the east coast of South Africa, following the annual sardine run. The southern African population of Cape Cormorants has declined from more than a million birds in the early 1970s to about 120 000 pairs in the mid-1980s.

Cape Cormorants usually feed on large surface shoals of fish. They feed in flocks, sometimes of thousands of birds. Their tendency to fly in long lines or V-shaped flocks resulted in their Afrikaans name of "trekduiker". Pilchards were once the main source of food for Cape Cormorants, but since the decline in pilchard stocks, anchovies have become their staple diet. Anchovy resources are heavily fished and, as a result, Cape Cormorants are vulnerable to temporary and local shortages of food.

Long flocks of cormorants search for anchovy



The Cape Cormorant holds its wings out to dry

The Bank Cormorant (*Phalacrocorax neglectus*)

The Bank Cormorant was named by fishers who believed that the presence of the birds at sea indicated good fishing banks. The bird is totally black, including its bill and eye.

Bank Cormorants breed on islands off the west coast, usually in small colonies with less than 50 nests. The largest colonies are found at Ichaboe and Mercury Island, where over 70% of the total population breeds. Nests are often lost to rough seas but the birds start to reconstruct their nests within 24 hours when this happens.

Adult birds are rarely encountered more than 10 km from their nests.

They forage in kelp beds, feeding on reef-dwelling fish such as clinids; crustaceans, including rock lobster; octopus and cuttlefish.



Our population of Bank Cormorants is decreasing at an alarming rate

Crowned Cormorants feed in shallow water, close to shore. They favour kelp beds, and rocky shores where they prey on bottom living fish such as clinids. The population of Crowned Cormorants is small, about 2 700 pairs, because the bird's feeding habitat is limited. The population of Crowned Cormorants is stable, but because of its endemic status, the bird is closely monitored.

The White-breasted Cormorant (*Phalacrocorax carbo*)

The largest of the cormorants is the white-breasted with a distinctive white chest and a glossy brown or black body. It nests on islands, coastal cliffs and inland and feeds on fish.

Seabird populations plummet

In the early part of the twentieth century, egg and guano collecting had a dire effect

on seabirds, reducing their populations to a fraction of their original size. Today oil spills, food shortages, climate change and marine pollution all take their toll on seabird populations; cormorants are no exception. For instance, changes in fish abundance and distribution, which may be brought on by an El Niño weather pattern, or by overfishing, might cause cormorants to forage further and further away, abandoning their nests in the process. The seriousness of the threats to seabird populations is illustrated by the fact that the population of Bank Cormorants, a species that is endemic to southern Africa, has halved in the last ten years.

The southern African population of Bank Cormorants has decreased alarmingly in recent years. From a population of 8 700 breeding pairs recorded in 1980, numbers have dropped to a current level of 4 900 pairs. Environmental conditions that are thought to have caused a scarcity of food, plus competition with seals are both cited as reasons for this dramatic drop in numbers. When breeding, Bank Cormorants are also vulnerable to disturbance by humans. Kelp Gulls are quick to prey on eggs and chicks in abandoned nests.

The Crowned Cormorant (*Phalacrocorax coronatus*)

The Crowned Cormorant is glossy black bird with an obvious tuft of upright feathers at the base of the red bill. The eye is red and the gape of the beak yellow.

Crowned Cormorants breed on the west coast, between Walvis Bay and Cape Agulhas. They are coastal birds and seldom venture more than 10 km offshore. Crowned Cormorants build their nests in a variety of habitats, including rocky cliffs, caves, boulders, bushes, trees and even on stacks of dried kelp. They often share the nesting colonies of other birds, including Cape Gannets, African Penguins and Cape and Bank Cormorants.

Author: Claire Attwood September 2000

Classification:

PHYLUM:	Chordata
SUBPHYLUM:	Vertebrata
CLASS:	Aves – Birds
ORDER:	Pelicaniformes
FAMILY:	Phalacrocoracidae
GENUS:	<i>Phalacrocorax</i>

FURTHER INFORMATION: • Payne, A.I.L. and Crawford, R.J.M. (Eds). 1989. *Oceans of Life off Southern Africa*. Vlaeberg Publishers, Cape Town.
• 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 including Botswana, Lesotho, Namibia, South Africa, Swaziland and Zimbabwe*. Volume 1: Non-Passerines.

RELATED FACTSHEETS: • Gannets • Gulls • Birds and Oil Spills • Penguins • Upwelling • El Niño • Pelagic Fish • Guano • Islands around South Africa



Oystercatchers 3E

The African Black Oystercatcher, *Haematopus moquini*, is the only species of oystercatcher that breeds in Africa. The world population is less than 5000 individuals and is confined to the shorelines, estuaries and lagoons of South Africa and Namibia. More than 75% of the population is in South Africa.

The oystercatcher is an easily identified black bird with a bright red bill and eye-ring and red legs. The birds are most often seen in pairs but at high tide they gather together in roosts, usually on offshore rocks or promontories jutting into the sea.

The main purpose of joining roosts is to avoid predators – many birds together have a better chance of spotting an approaching predator than does a lone oystercatcher.

The oystercatcher's call is a plaintive, high-pitched "klee-kleep" and a fast "peeka-peeka-peeka" alarm call.

Feeding

The name oystercatcher can be misleading because the birds feed mainly on mussels, limpets, whelks, crustaceans and worms. They rarely eat oysters. Because they obtain their food from the intertidal zone of rocky and sandy shores,

oystercatchers can only feed at low tide. As a result they feed by day and at night. Their long, dagger-like bills and strong neck muscles make them experts at tackling shellfish that other birds find difficult or impossible to handle. On rocky shores their favourite prey is limpets and mussels. On sandy beaches they feed mostly on sand mussels that are buried in the sand and have to be found by touch.

Because of their specialised feeding techniques, Oystercatchers have to feed their young until after they have learnt to fly. Food items are carried to the chicks one at a time and it is often possible to find deposits of shells which collect at the site where the chicks have been fed. These so-called "middens" are a valuable source of information as they give an indication of what the birds have been eating.

Oystercatchers have an impact on the community structure of rocky shores. In areas where oystercatchers are plentiful they remove hundreds of limpets and mussels. As a result there is more seaweed carpeting the rocks. Many small crustaceans live in the seaweed and provide food for other birds such as turnstones and plovers which flourish in these areas.

Breeding

African Black Oystercatchers mate for life – some pairs are known to have been together for nearly 20 years. They may well live for 35 years or more and do not breed for the first



time until they are three or four years old. During the breeding season, which usually begins with the onset of the summer holidays, oystercatchers frequently indulge in noisy and conspicuous displays. They nest on exposed sand, rocks, next to dried kelp or among stones. Their nests are simply a scrape in the ground which is sometimes lined with shell or rock chips but is often left bare. The female birds usually lay two eggs of a greenish or buff, stony colour. The eggs have dark brown spots which provide camouflage against predators. Both parents incubate the eggs, which hatch after about 32 days. This is a time of great risk to the birds, which may be threatened by people, dogs and predators. Most adult birds that are killed by predators die during the breeding season because they have to remain at or near the nest and cannot join the safety of a roost. Thirty five to forty days after the chicks hatch they are ready to take their first flight. Many chicks will not make it to this point, having succumbed to starvation, predators, nest-drenching waves or disturbance by human beings.

Rarer than the southern right

African Black Oystercatchers are South Africa's most rare, endemic coastal bird. They are more rare than the southern right whales that visit our shores in winter and are listed on the International Red Data list as a threatened species.

Oystercatchers are only able to raise one brood of chicks in a year. By comparison with other species of bird, their breeding success is low. Every year fewer than 500 chicks are fledged and many of these chicks will die before they can breed. The two main reasons for low breeding success are disturbance and predation. Oystercatchers breed in summer, probably in an effort to avoid winter storms, when high seas might prevent them from reaching their feeding areas for days at a time. If human disturbance prevents adults from feeding when they have chicks, the effects could be as devastating as winter storms. With their nests in the open and on the ground, the oystercatcher's eggs and young are also at risk from being crushed by walkers or beach vehicles or being eaten by dogs.

Oystercatchers are long-lived and it may take several years for the effects of low breeding success to be detected. A survey of breeding success carried out in March 1997 yielded alarming results – along some parts of the west coast the number of

chicks reared was barely one tenth of that needed to maintain a healthy population. In parts of the Eastern Cape, success was even lower. These findings, coupled with rapid coastal development and increasing demand for recreational use of the seashore have made it clear that South Africa's rarest endemic coastal bird may soon face a crisis situation.

Conservation

The Oystercatcher Conservation Programme is a multi-organisational project, spearheaded by the Percy FitzPatrick Institute of African Ornithology at the University of Cape Town. Its aim is to develop a conservation strategy for the oystercatcher and to raise awareness of the conservation needs of southern Africa's coast. Its success is, to a large extent, dependent on public support and participation. For instance, at Arniston, on the south coast, a section of beach has been barricaded to confine beach vehicles and protect oystercatcher breeding sites. Large signs have been erected at sites around the coast to inform the public and encourage their cooperation.

Author: Claire Attwood September 2000



Oystercatcher eggs

Classification:

PHYLUM:	Chordata
SUBPHYLUM:	Vertebrata
CLASS:	Aves – Birds
FAMILY:	Haematopodidae – oystercatchers
GENUS:	<i>Haematopus</i>
SPECIES:	<i>moquini</i>
COMMON NAME:	African Black Oystercatcher

FURTHER INFORMATION: • Oystercatcher Conservation Programme, Percy FitzPatrick Institute of African Ornithology, University of Cape Town 7701 Rondebosch, Fax: (021) 650 3295, e-mail: ocp@botzoo.uct.ac.za

RELATED FACTSHEETS: • Gulls • Cormorants • Whitefronted Plovers • Off-road Vehicle Use



Gulls, together with cormorants, African Penguins, Cape Gannets, and certain terns, form part of the resident seabird community of southern Africa. A seabird is defined as any bird which usually catches its food in the sea. In the case of gulls this definition is somewhat elastic, even though the association between gulls and the sea is so persuasive that it is common for this group of birds to be referred to as “seagulls”.

Three species of gulls can be seen soaring above the waves or scavenging noisily on the coast of South Africa. These are the Kelp Gull, Hartlaub's Gull and the Greyheaded Gull. The Kelp Gull and Hartlaub's Gull seldom live more than 40 km from the coast but the Greyheaded Gull, thrives on the wetlands of the Highveld.

Prior to European settlement in South Africa, Kelp Gulls and Hartlaub's Gulls were purely coastal birds, feeding on a range of marine organisms, from molluscs and crustaceans to shoaling fish. Today, these gulls are so well adapted to human beings

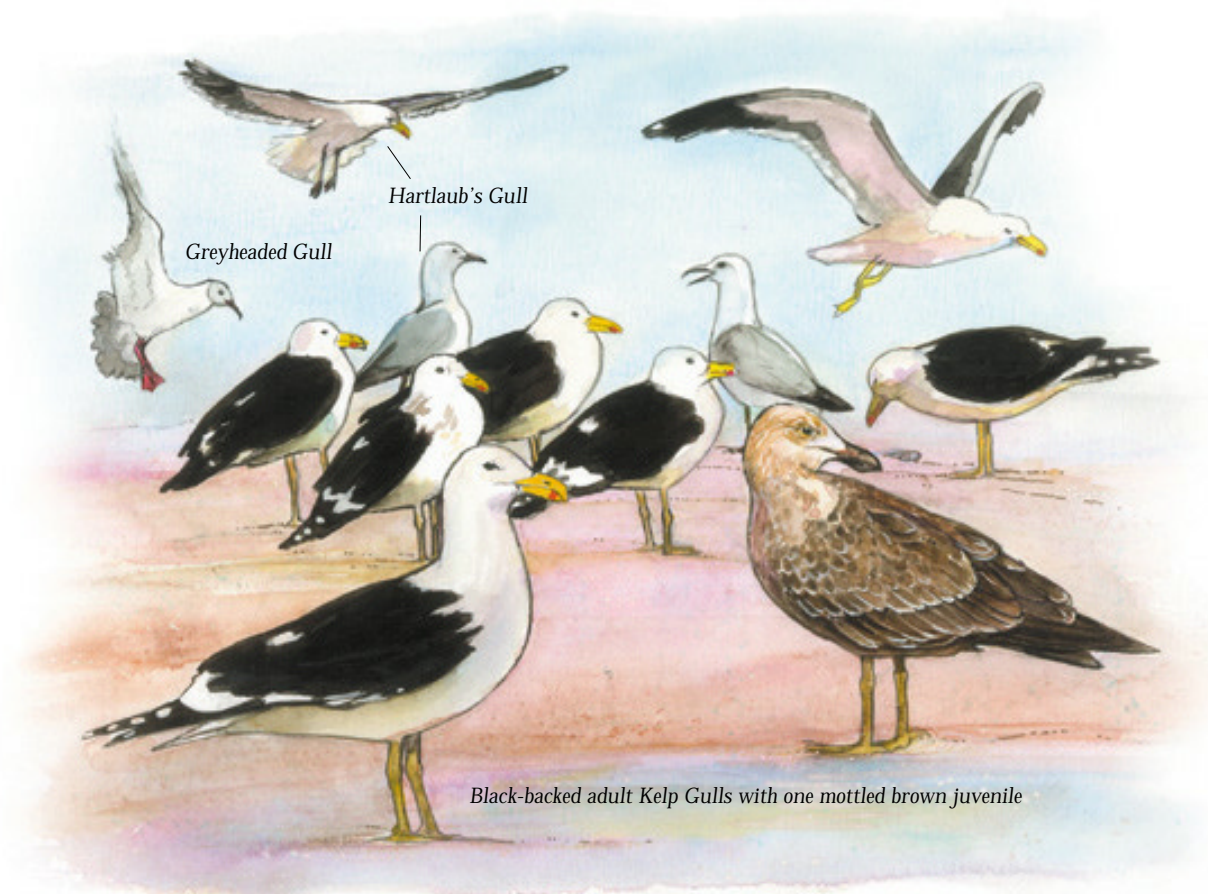
that many gull populations are found hundreds of kilometres from the ocean. Instead of a diet of marine organisms, gulls have become accustomed to feeding on offal from fishing boats, human refuse, terrestrial insects and snails and dead animals washed up on beaches.

The Kelp Gull (*Larus dominicanus*)

This black and white gull is the largest in southern Africa. It was formerly known as the Southern Blackbacked Gull and is widespread in the southern hemisphere. The largest concentrations of Kelp Gulls are found in New Zealand where more than one million pairs have been recorded. The southern African population is recognized as a distinct subspecies which breeds nowhere else. The adults in this population retain the dark eye of immaturity when breeding whereas other subspecies develop pale eyes.

Kelp Gulls collect white mussels by treading in wet sand and can be seen dropping black mussels from a height onto rocks to smash the shells.

They often nest with other seabirds, such as African Penguins, Cape Gannets, cormorants and terns and will prey on the eggs and chicks of these birds if nests are left exposed. Kelp



Black-backed adult Kelp Gulls with one mottled brown juvenile

Gulls also terrorise other birds, forcing them to regurgitate their food. Juvenile Kelp Gulls are brown and can be seen 'begging' for food from the adults. The chick pecks the red spot on the beak of the adult to cause it to regurgitate a meal.

Gulls are colonial breeders. Kelp Gulls breed during summer at guano platforms and offshore islands, in rocky areas and on sandy beaches.

There is a protected gull breeding site on the cliffs between Muizenberg and Monwabisi Beach in False Bay.

The Hartlaub's Gull (*Larus hartlaubii*)

The Hartlaub's Gull was previously thought to be the same species as the Australian Silver Gull, but the adult of that species does not have the dark eye of the Hartlaub's Gull. The Hartlaub's Gull is endemic to South Africa and Namibia and is confined to the productive Benguela system and the western Agulhas bank. There are approximately 12 000 breeding pairs within this range. Its natural diet made up of the invertebrates that are associated with stranded kelp (*Ecklonia maxima*); as a result the bird's distribution corresponds with that of kelp. The highest concentrations of Hartlaub's Gulls are found inland but there is a coastal population which feeds mainly along the seashore.

Hartlaub's Gulls breed throughout the year although it has been suggested that the autumn breeding season in the Western Cape has been timed to coincide with the increased availability of food after early winter storms.

The Greyheaded Gull (*Larus cirrocephalus*)

The Greyheaded Gull is widely, but patchily, distributed in South America, sub-Saharan Africa and Madagascar. In southern Africa it is found mainly in wetter inland areas although it is known to wander into drier areas if there are bodies of open water available. There is only one record of Greyheaded Gulls feeding in the open sea off southern Africa.

Greyheaded Gulls favour human environments, such as sewage farms, rubbish dumps or tall buildings for nesting. Coastal colonies breed in winter. Interestingly, Greyheaded Gulls

are closely related to Hartlaub's Gulls and have been known to breed with them. Hybrid birds have produced young to the flying stage but it is not yet known if the hybrids are fertile.

Living with humans

Probably because they have adapted well to the human environment, the populations of all three southern African gulls are stable. In fact, the number of Kelp Gulls increased substantially in the southwestern Cape during the 1980s. This may signify a gradual return to previous levels of abundance. Earlier in the twentieth century large numbers of Kelp Gulls were shot and their eggs destroyed because they were known to prey on the eggs and chicks of guano producing birds, such as penguins and cormorants.

Gulls and humans do not always live in harmony, however. In 1987 a colony of 4 000 Hartlaub's Gulls established itself at Ysterplaat, the airforce base near Cape Town. Birds and aircraft proved to be a dangerous mix and the colony had to be dispersed by breaking eggs, collecting chicks and shooting about 300 birds. It has been suggested that the number of Greyheaded Gulls on the highveld should be reduced in an effort to assist the breeding success of more scarce water birds. (Gulls have been culled in other parts of the world because they prey on other species of breeding birds.)

Author: Claire Attwood September 2000

Classification:

PHYLUM:	Chordata
SUBPHYLUM:	Vertebrata
CLASS:	Aves – Birds
ORDER:	Charadriiformes
FAMILY:	Laridae – Gulls
GENUS:	<i>Larus dominicanus</i> – Kelp Gull or Black-backed Gull <i>Larus hartlaubii</i> – Hartlaub's Gull <i>Larus cirrocephalus</i> – Grey-headed Gull

FURTHER INFORMATION:

- Payne, A.I.L. and Crawford, R.J.M. (Eds) 1995: *Oceans of Life off Southern Africa*, Vlaeberg Publishers (2 Ed), Cape Town.
- 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 including Botswana, Lesotho, Namibia, South Africa, Swaziland and Zimbabwe*. Volume 1: Non-Passerines.

RELATED FACTSHEETS:

- Cormorants • Birds and Oil Spills • Plastic Pollution



Albatrosses 3E

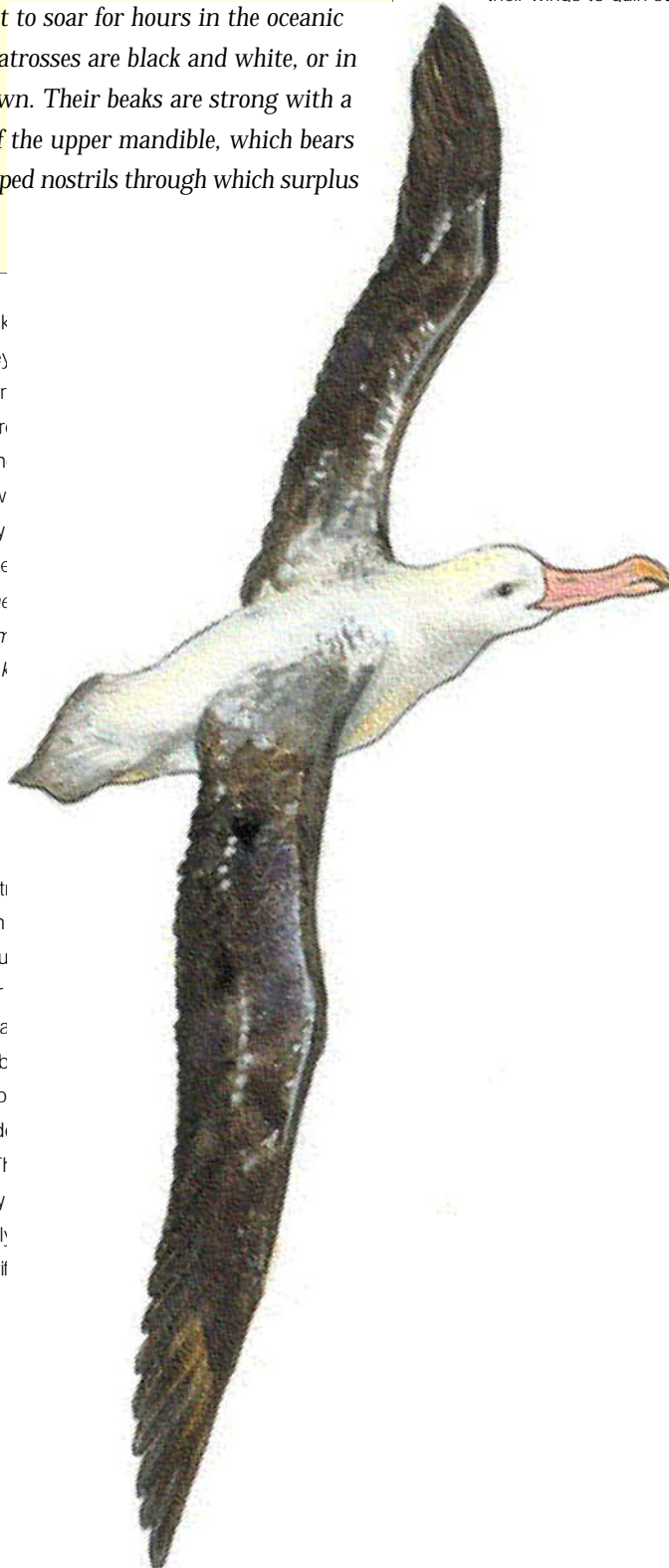
Albatrosses are amongst the largest of flying birds. They have goose-sized bodies with very long slender wings. The largest is the Wandering Albatross with a wing span of up to 3.5 m, enabling it to soar for hours in the oceanic air currents. Albatrosses are black and white, or in a few species brown. Their beaks are strong with a hook on the tip of the upper mandible, which bears unusual tube-shaped nostrils through which surplus salt is excreted.

Albatrosses are well known since the days of Magellan they were called 'Gooney' and had a reputation because of their experience also known as harbin because they need water because they need water considered extremely Coleridge wrote in the *And I had done an her And it would work 'er For all averr'd, I had k the Bird That made the breeze to blow.*

Distribution

Nine species of Albatrosses are confined to the Southern Hemisphere breeding mainly on southern oceanic islands. Four species are found in the North Pacific. The most common albatrosses is the subantarctic where the Roaring Fifties provide the Howling Fifties provide the support to keep them aloft. Their long span is supported by powerful muscles as they rarely flap their wings. They glide swiftly

the wind, gathering speed and when just above the water they veer sharply round into the wind and soar upwards gaining height for the next glide. They use thermals to assist in take-off but on a calm day they have to taxi, running along flapping their wings to gain sufficient air speed for lift off.



Albatrosses feed on marine organisms on the surface of the sea, such as crustaceans – especially krill. They also catch squid at night when they are on the ice. They often feed on refuse and refuse eaters. Unlike gannets, they do not come on the water to retrieve food.

On islands where there are no introduced carnivores would wreak havoc among the densely packed nests.

Albatrosses are very long lived birds, surviving well over 50 years. They do not start breeding until they are 5 years old. Their courtship ritual involves dancing. They face one another and slightly bowed and then they lean to side emitting harsh croaks and they raise their beak skywards and emits a call. They approach from time to time – a signal which may be followed by the female laying in a cup-shaped nest of twigs. The parents sit on the nest for periods ranging from 20 to 81 days in larger ones. The male sits for a short while and guarded for a while and then it is left by itself as both parents return at intervals of about ten days to feed the chick with squid and fish for the chick. The parents fledge in two to three months. In some species sit out the severe winter months. As a result, breeding is rare.

Albatrosses seen off southern Africa

There are two species known as the 'great albatrosses' which have very large wing spans, white heads, backs and upper wings and black flight feathers and tail. The largest of these is the **Wandering Albatross**, *Diomedea exulans*, which is common in Cape waters beyond the continental shelf. Their closest breeding sites are Gough, Marion and Prince Edward Islands. The **Royal Albatross** breeds in New Zealand and is occasionally seen along the Benguela Current. It has a distinctive black line along the cutting edge of the upper mandible.

There are several 'dark-backed' albatrosses, the largest being the **Shy Albatross** which is common in winter around Mozambique and Namibian trawling grounds. The underwing has a narrow dark edge and a black spot where it joins the body. The **Blackbrowed Albatross** is the most common of the smaller dark-backed albatrosses and thousands occur in Cape and Namibian waters. They have a heavy yellow bill with an orange tip and a thin black 'eye-brow'. The **Yellow-nosed Albatross** is the most common off the Wild Coast and KwaZulu-Natal where it follows the sardine run during winter. This is the smallest albatross and has a grey head and a black bill with a yellow band on the upper mandible.

Albatrosses and humans

Albatrosses have been exploited at various times for their meat and feathers. In the Pacific Islands they pose a danger to aircraft when they use runways for take off. As a solution nearby dunes have been flattened to reduce up-drafts of wind. The greatest problem is longline fishing. In the Southern Ocean alone more than a 100 million hooks are set annually, resulting in 44 000 albatrosses being caught and drowned every year after swallowing these baited hooks. Crews of these fishing vessels are being taught to cast their lines in a bird-friendly way, by adding extra weights to the lines so they sink faster, fishing at night when fewer birds feed, and rigging bird-line streamers that act as 'scarecrows'. In this way the slaughter of birds can be reduced by over 80 percent.

Author: Margo Branch September 2000

Classification:

PHYLUM:	Chordata
SUBPHYLUM:	Vertebrata
CLASS:	Aves – Birds
ORDER:	Procellariiformes
FAMILY:	Diomedidae
GENERA AND SPECIES:	<i>Diomedea exulans</i> – Wandering Albatross <i>Diomedea cauta</i> – Shy Albatross <i>Diomedea melanophus</i> – Black-browed Albatross <i>Diomedea chlororhynchus</i> – Yellow-nosed Albatross <i>Phoebastria fusca</i> – Sooty Albatross

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- Gosling, M. 1997. Hooks of death. *African Wildlife* Vol 51 (3): 28-31.
- Percy FitzPatrick Institute of African Ornithology, University of Cape Town, Rondebosch 7701, South Africa. Tel (021) 650-3293, fax (021) 650-3295, e-mail ocp@botzoo.uct.ac.za
- Sinclair, I., Hockey, P. & Tarboton, W. 1993. *Birds of Southern Africa*. Struik. Cape Town.

RELATED FACTSHEETS:

- Gannets • Islands of the Sub-Antarctic • Sardine Run • Krill



Flamingos 3E

Flamingos are elegant, colourful waders that present a spectacle of almost unrivalled splendour when gathered in huge flocks. If disturbed they take off by running laboriously along the water surface flapping their enormous wings and emitting loud honking calls like those of geese. Their long legs and necks, pink wings with black flight feathers, and their unusual method of feeding set them apart from all other birds. Two species occur in southern Africa. The Greater Flamingo, is the largest of all flamingos reaching lengths of 140 cm. It is almost white with brilliant red wing patches in flight and has a pale pink bill with a dark tip. The Lesser Flamingo is smaller and pinker than the greater flamingo and its bill is dark red with a black tip.

Distribution

The Lesser Flamingo is one of the smallest species of flamingo but is the most abundant, numbering perhaps six million. It is found in India, the Persian Gulf and Madagascar but occurs predominantly in Africa. More than half of the world population inhabits the alkaline lakes of Ethiopia, Kenya and Tanzania, where over a million birds can be seen on a single lake. These spectacular concentrations attract tourist from across the world.

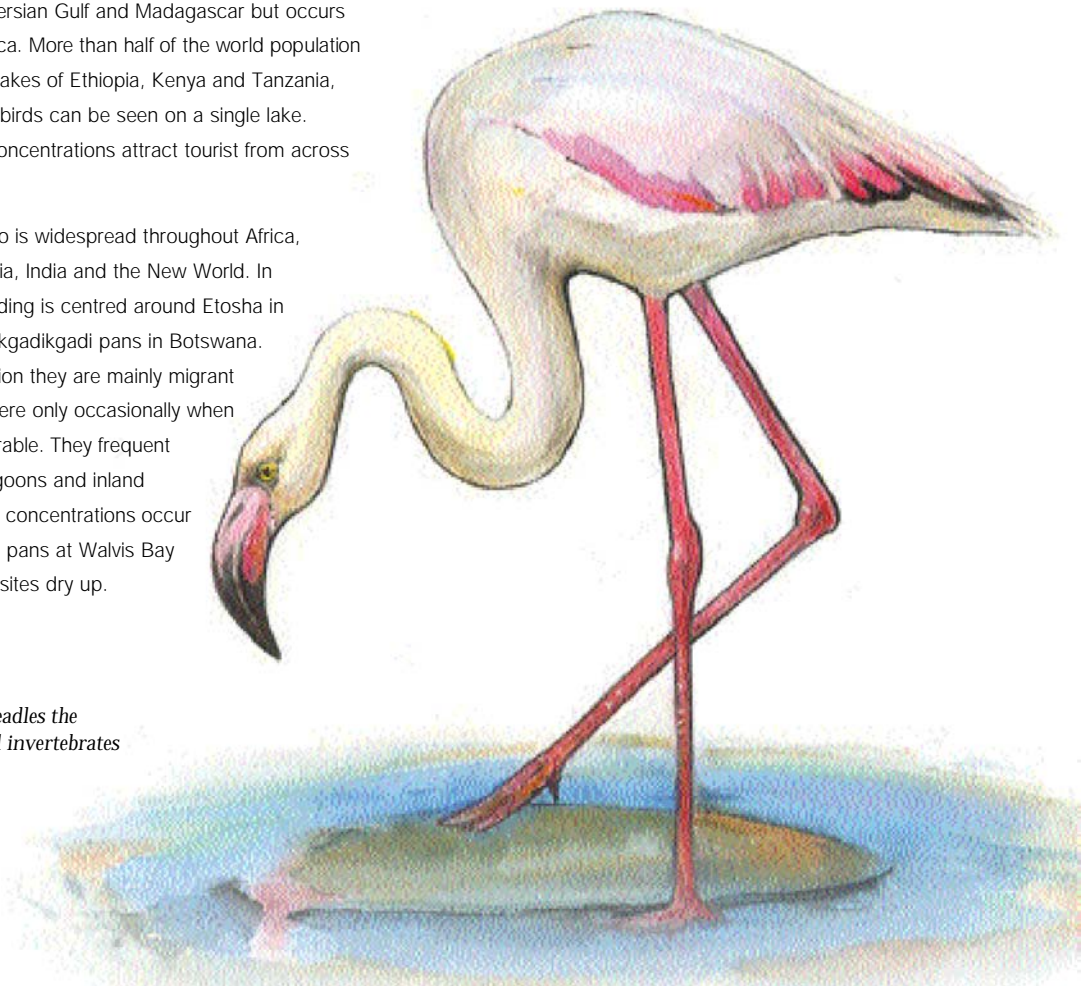
The Greater Flamingo is widespread throughout Africa, southern Europe, Asia, India and the New World. In southern Africa breeding is centred around Etosha in Namibia and the Makgadikgadi pans in Botswana. Elsewhere in the region they are mainly migrant visitors and breed there only occasionally when conditions are favourable. They frequent estuaries, coastal lagoons and inland brackish pans. Huge concentrations occur seasonally in the salt pans at Walvis Bay when their breeding sites dry up.

Greater Flamingo treads the mud to disturb small invertebrates

Feeding

The downward-curved bills of flamingos are unique in the bird world and specially adapted for filter-feeding. The bend in the middle of the bill allows it to open evenly along its entire length. Flamingos use their tongues to pump water through hair-like lamellae in the bill to trap small items of food. (It is remarkable how similar this mechanism is to the enormous curved jaws of the baleen whales which also filter food from the water.)

The two species of flamingo often live in the same wetland but due to different feeding habits they exploit different food sources. Greater Flamingos have very coarse lamellae and eat mostly small aquatic invertebrates, which they disturb from the bottom by treading with their webbed feet. Circular wheel-like depressions are left in the mud. Their long necks and legs enable them to feed in quite deep water with their heads upside down near the bottom. The beaks of Lesser Flamingos have dense fine lamellae suited to sieve microscopic blue-green algae and diatoms from near the surface of water. While feeding the head and bill is held upside down and swept from side to side. The algae bloom prolifically in the warm alkaline lakes of East Africa where it is estimated that 100 000 Lesser Flamingos consume 18 tons of algae a day. They frequently feed at night.



Breeding

The flamingos' pink coloration is obtained from carotinoid pigments abundant in their natural diet. The bright colour is essential to stimulate breeding. The birds synchronously perform 'wing-salute', 'head-flagging' and 'broken-neck' displays to initiate breeding. They nest in colonies, each forming a mound of mud with a shallow depression at the top. They lay one or rarely two eggs which are chalky white overlaying a bluish shell. Incubation, undertaken by both parents, lasts about 28 days and the chicks are fledged after about 75 days. The chicks leave their nests after about two weeks and gather in large nurseries where they are fed by their own parents on regurgitated fluid. They appear to recognise their parents by voice.

Flamingos and humans

Disturbance by low-flying aircraft is a principal reason for breeding failure in several places, including South Africa. Flamingos partially acclimatise to land vehicles and people but are panicked by aircraft and fly off. In East Africa at Lake Elementia 6 000 pairs of flamingos were forced off their nests by marauding Marabou Storks – the increase of storks was due in part to greater food availability provided by abattoirs from the increased human population. A proposed hydro-electric scheme in Kenya to the north of Lake Natron could affect the hydrology of the area causing flooding of nests and an increase of tilapia. These fish could attract pelicans which may displace flamingos from their nesting sites, as has happened elsewhere. Flamingos are an excellent species for promoting environmental appreciation and tourism and can feed and breed successfully in man-made wetlands and commercial salt pans.

Author: Margo Branch September 2000

Classification:

PHYLUM:	Chordata
SUBPHYLUM:	Vertebrata
CLASS:	Aves – birds
FAMILY:	Phoenicopteridae
GENUS AND SPECIES:	<i>Phoenicopterus ruber</i> – Greater Flamingo <i>Phoenicopterus minor</i> – Lesser Flamingo



Lesser Flamingo sieves plankton from the water

FURTHER INFORMATION:

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- Ginn, P. J., McIlhenny, W. G. & Milstein, P. le S. 1989. *Complete Book of Southern African Birds*. Struik Winchester. Cape Town.
- Velasquez C. R. & Hockey, P. 1995. Crimson-winged dancers of the salt seas, Africa's flamingos. *Africa*, Vol 3 (1): 66-75

RELATED FACTSHEETS:

- Plankton • Wetlands • Langebaan Lagoon • St Lucia • Orange River Mouth



Penguins 3E

Although all 18 species of penguin are confined to the southern hemisphere, the African Penguin *Spheniscus demersus* is the only penguin to occur naturally on the African continent, apart from a few rare visitors of other species from the sub-Antarctic islands. It is endemic to South Africa and Namibia, breeding on 25 islands and a few mainland sites between Bird Island, off Port Elizabeth, and Hollams Bird Island, Namibia.

Life history of the African Penguin

The African Penguin, also known as the Jackass Penguin because of its donkey-like bray, is easily recognised by its sleek black and white plumage. Like all penguins, it is flightless, using its wings to "fly" underwater as it searches for small fish on which to feed. While in the water the feathers provide an effective insulating barrier, but these deteriorate over time and must be replaced annually. For this reason, the birds moult once per year, usually in November. Without their insulating plumage they cannot go to sea to feed, and are confined to land for three weeks until new feathers have grown. In order to survive this fast, the birds spend more time feeding at sea in the weeks leading up to the moulting period, and lay down reserves of fat that can be used up while they are landbound.

After the moulting period the penguins feed at sea for a few weeks and then return to the colony for the breeding season, which starts in January. They prefer to build their nests on a soft surface where they can dig a shallow burrow. About three weeks after returning to the colony the female lays two eggs, the second egg being laid a few days after the first. Each parent takes turns to incubate the eggs while the other

undertakes feeding trips. The eggs hatch after an incubation period of 41 days each, but for the first 15 days the chicks cannot be left alone. Apart from being vulnerable to predation by Kelp Gulls, they are unable to thermoregulate and would quickly succumb to exposure. Once past this high-risk period, the chicks huddle together to keep warm and fend off gulls when they are left at the nest by their parents.

Both parents feed the chicks, regurgitating macerated fish when they return from a feeding trip. The larger, first-hatched chick is able to push aside the smaller one during feeding, so it grows rapidly and is ready to fledge after about 90 days, at an average weight of 2.6 kg. The smaller chick often dies of starvation because of this competition for food, but if it survives it is able to feed and grow rapidly once the older chick has set off to sea, until it too is ready to fledge. Juvenile penguins spend considerable time at sea, returning to the colony to moult at the age of 12 to 22 months. They breed for the first time at five to six years of age.

Interactions with humans

The African Penguin has been classified by the World Conservation Union as "vulnerable", with a high risk of extinction in the wild in the medium-term future. For the African Penguin, this translates to a 10% chance of extinction within 100 years. The estimated 575 000 adult penguins that existed a century ago had been reduced by half by 1950, when the first aerial census was conducted, and today number less

Young chicks are fluffy and brown until the first moult



Juveniles lack the black chest strip

Adult

than 180 000. This means that the population has been decreasing at 1-2% per year over this period.

Initially, penguin numbers were decimated by egg- and guano-collecting. Almost 13 million penguin eggs were collected and sold for human consumption between 1900 and 1930, and even in the early 1960s approximately 35 000 eggs were taken per year. The practice was only halted in 1967. Guano was scraped from islands off South Africa and Namibia to be marketed as a fertiliser, which impacted the penguins in two ways. Disturbance of the penguins caused them to abandon their eggs and chicks, while removal of guano deprived the birds of nest material. Previously, nests hollowed out in the porous guano had remained dry and sheltered, but those constructed on bare rock were exposed to the elements and often flooded during rainstorms.

Recent declines in penguin numbers can be attributed mainly to oil pollution. Feathers lose their insulating ability when covered with oil, and the penguins soon become cold, water-logged and unable to swim effectively. Since penguins must enter the water to feed, oiling can result in death by starvation. Following the Apollo Sea oil spill in June 1994 about 10 000 penguins were oiled. About half died, but of the 4076 that were cleaned, fitted with flipper bands and released, 73% had been resighted at breeding colonies five years later. The survival rate was even better when 20 000 oiled penguins were rescued after the 'Treasure' sank in June 2000. This represents a remarkable success rate; in the northern hemisphere the average post-release survival rate for most oiled and cleaned seabirds is only six days.

Penguins are also impacted by displacement of island nesting sites by seals, which are increasing in number, and the introduction to islands of predatory feral cats. Furthermore, penguins compete with other predators as well as the fishing industry for food, as they eat small pelagic fish such as anchovy and pilchard, which are also targeted by the purse-seine fishery. Overfishing caused the pilchard stock to collapse in the 1970s and the penguins had to rely on the smaller anchovy, stocks which are prone to large fluctuations in abundance. The pilchard resource is now recovering and is replacing anchovy as the dominant pelagic species on the west coast, ensuring a year-round food supply for penguins. This trend is reflected in a westward shift of the penguin

population in recent years. For example, in 1983 penguins recolonised Robben Island after an absence of about 180 years. The colony expanded rapidly from nine pairs in 1983 to 4 400 pairs in 1999, an increase too fast to be explained by breeding alone. Resightings of banded birds indicate that most are immigrants that have relocated from Dyer Island, further east.

Penguins were also observed for the first time at Boulders, near Simonstown, in 1985, and the colony had grown to 900 pairs by 1999. The Boulders colony is part of the new Cape Peninsula National Park, and is a popular tourist attraction, with up to 50 000 visitors per month. However, the penguins' smelly guano and noisy calls have caused conflict with adjacent residents, and attempts are being made to confine the expansion of the colony.

Fact file on Treasure oil spill, June 2000

- 18 516 oiled birds rescued from Robben and Dassen Islands.
- 3 350 chicks rescued and artificially reared.
- 1957 oiled birds died, mortality rate 10.3%.
- 19 506 un-oiled penguins relocated to Eastern Cape and released at Cape Recife.
- Penguins swam 778 km from Cape Recife to Robben Island at an average speed of 1-3 km/hr.
- 12 000 volunteers worked 556 000 hours during the rescue operation.

Author: Sue Matthews September 2000

Classification:

PHYLUM:	Chordata
SUBPHYLUM:	Vertebrata
CLASS:	Aves – Birds
ORDER:	Sphenisciformes
FAMILY:	Spheniscidae
GENUS:	<i>Spheniscus</i>
SPECIES:	<i>demersus</i>
COMMON NAME:	African Penguin

FURTHER INFORMATION: • Gosling, M. 2000. *Nightmare in Table Bay*. African Wildlife vol 54 (5)

• Payne, A. I. L., Crawford, R. J. M. & Van Dalsen, A. 1989. *Oceans of Life off Southern Africa*. Vlaeberg Publishers, Cape Town.

RELATED FACTSHEETS: • Pelagic Fishing • Oil Pollution • Birds and Oil Spills • Guano • Islands around South Africa • Seals



Whitefronted Plover 3E

The diminutive *Whitefronted Plover* *Charadrius marginatus* is endemic to sub-Saharan Africa. It is encountered along the entire South African coast where it forages on both sandy and rocky shores. Inland it occurs at lakes and along large sandy rivers such as the Zambezi, Limpopo and Okavango. The *Whitefronted Plover* is the most common coastally-breeding wader species in southern Africa.

Beach users are likely to be familiar with this small, pale bird that is commonly seen scuttling along the shoreline or among dune fields high up on the beach. It is distinguished from other small plovers by its white collar and the lack of distinct markings on its chest and head, although it may have a thin black line through the eye and across the forehead. On open sandy beaches in the Western Cape the *Whitefronted Plover* occurs in densities of up to seven or eight birds per kilometre. Further east, in the Eastern Cape and KwaZulu-Natal, average densities are less than one bird per kilometre.

The *Whitefronted Plover*'s call is a clear 'wiit' and an alarm call of 'tukut'.

Feeding

The diet of a *Whitefronted Plover* is largely dependent on the bird's location. In the Western Cape, for instance, the fly larvae and amphipods that inhabit stranded kelp fronds are an

important source of food. But in the Eastern Cape, where kelp does not wash ashore, the birds derive much of their food from the large dune fields that back the beaches. Rocky shores offer a diverse range of food; on Marcus Island the plovers have been known to take 28 different prey species, the most abundant of which are fly larvae. At Langebaan Lagoon, where vast mudflats ooze with countless molluscs and crustaceans, the main prey items are small gastropods, bivalves and isopods.

Whitefronted Plovers employ an interesting foraging technique which is known as 'foot trembling'. This entails wiggling their toes rapidly on the sand in order to bring invertebrates to the surface. Once at the surface the *Whitefronted Plover* will peck at the prey item with their short bills.

Breeding

The breeding season for *Whitefronted Plovers* varies according to the birds' location. In most cases the birds breed before the onset of the rainy season, but in the Western Cape they breed at the close of the wet season, to coincide with a peak in the abundance of terrestrial invertebrates.

During the breeding season *Whitefronted Plovers* actively defend their territories against intruders of their own species, as well as other shorebirds such as sanderlings and Kittlitz's Plovers. They attack interlopers by rushing towards them with their heads held low or by flying straight at them. *Whitefronted Plovers* remain faithful to their territories for years; one pair is known to have held the same territory for eight years.

Researchers suggest that their tireless defence of territory may facilitate rapid breeding when conditions are suitable.

Whitefronted Plover guards its simple nest in the sand.



This adaptation is likely to be particularly important on unstable beaches where the food supply fluctuates.

Not all Whitefronted Plovers defend territories. Some – probably young birds and unsuccessful breeders – form non-territorial flocks, which are tolerated by territory holders if the birds remain in the lower reaches of their territories. Non-territorial birds therefore forage relatively low on the shore.

The nest of the Whitefronted Plover is a simple scrape in the ground. Clutch size ranges from one to three eggs, but the average size is two. Interestingly, the female bird may take up to four days to complete the task of laying her eggs and during this period the birds will make few visits to the nest. Incubation takes approximately 27 days and the female bird is largely responsible for sitting on the eggs during daylight hours. Researchers suggest that the male plover takes over this responsibility at night.

Whitefronted Plovers are not productive breeders. A study at Langebaan Lagoon – where the density of Whitefronted Plovers is about four times that of the adjacent coastline – showed that an average pair would have to lay between four and seven two-egg clutches to produce one fledgling. At this locality small grey mongooses *Galerella pulverulenta* and water mongooses *Atilex paludinosus* were the main predators of eggs. Avian predators include the Bokmakierie *Telophorus zeylonus* and African Black Oystercatcher *Haematopus moquini*. Low breeding success is partially offset by the high survival rate of adults. The average life expectancy of a Whitefronted Plover is approximately 11 years.

A stable population

Whitefronted Plovers are common along the entire length of the South African coastline; the coastal population is estimated to be approximately 14 500 birds. At present their conservation status does not appear to be cause for concern. Although the birds are fairly tolerant of disturbance, people, dogs and off-road vehicles probably compound their low rate of breeding success. They are somewhat less vulnerable to disturbance than the African Black Oystercatcher, owing to the fact that they do not breed during the peak holiday season.

Related species

Coastal plovers that breed in South Africa

Threebanded Plover has a distinctive black double breast band, grey cheeks and a red eye ring and base to the bill. Common on water bodies but not the open coast.

Kittlitz's Plover in breeding plumage has a distinctive black forehead line that extends to the nape of the neck, and a buff neck and chest. Immature birds have a pale buff eyebrow stripe extending to the nape of the neck. Common in mudflats and estuaries.

Blacksmith Plover is larger and the easiest plover to identify with its bold black, grey and white markings and loud ringing 'tink, tink, tink' alarm call. Common in grassy areas on the edge of wetlands.

Summer visitors that migrate to breed in the Northern Hemisphere

Ringed Plover is a small short-legged bird with a white collar above a blackish-brown breast band. Frequents coastal and inland wetlands. Most migrate north during winter.

Mongolian Plover and **Sand Plover** are larger than the Whitefronted Plover and do not have a white collar. The Sand Plover is the larger with a longer beak but both have a rufous breast band in breeding plumage and greyish-brown rump and tail. They occur in coastal wetlands in summer and the Mongolian Plover is fairly common in Natal.

Author: Claire Attwood September 2000

Classification:

PHYLUM:	Chordata
SUBPHYLUM:	Vertebrata
CLASS:	Aves – Birds
ORDER:	Charadriiformes – Waders
FAMILY:	Charadriidae – Plovers
GENUS:	<i>Charadrius</i>
SPECIES:	<i>marginatus</i>
COMMON NAME:	Whitefronted Plover

FURTHER INFORMATION:

- Hockey, P.A.R. 1995. *Waders of Southern Africa*. Struik Winchester, Cape Town.
- 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 including Botswana, Lesotho, Namibia, South Africa, Swaziland and Zimbabwe*. Volume 1: Non-Passerines.

RELATED FACTSHEETS:

- Oystercatcher • Gulls • Cormorants • Langebaan Lagoon • Sandy Beach



Gannets 3E

Worldwide, three species of gannets exist: the Northern, Australian and Cape Gannet. The Cape Gannet breeds only in southern Africa and is therefore considered endemic to the region (found nowhere else), while the Australian Gannet is a very rare vagrant. Cape Gannets are impressive, large white birds with golden heads and striking blue eyes and bills. Black lines outline the bill and eyes and extend down the throat (**gular stripe**). The wing tips and tail are black, as are the legs, which have turquoise stripes extending down to the tips of the toes. Gannets can be seen plummeting into the water from a height, with wings folded to penetrate the surface. They live in vast jostling colonies on islands and have developed the art of territorial defence, using their sharp beaks and such elaborate rituals of appeasement and greeting that early Dutch settlers named them **Malgas** (mad geese).

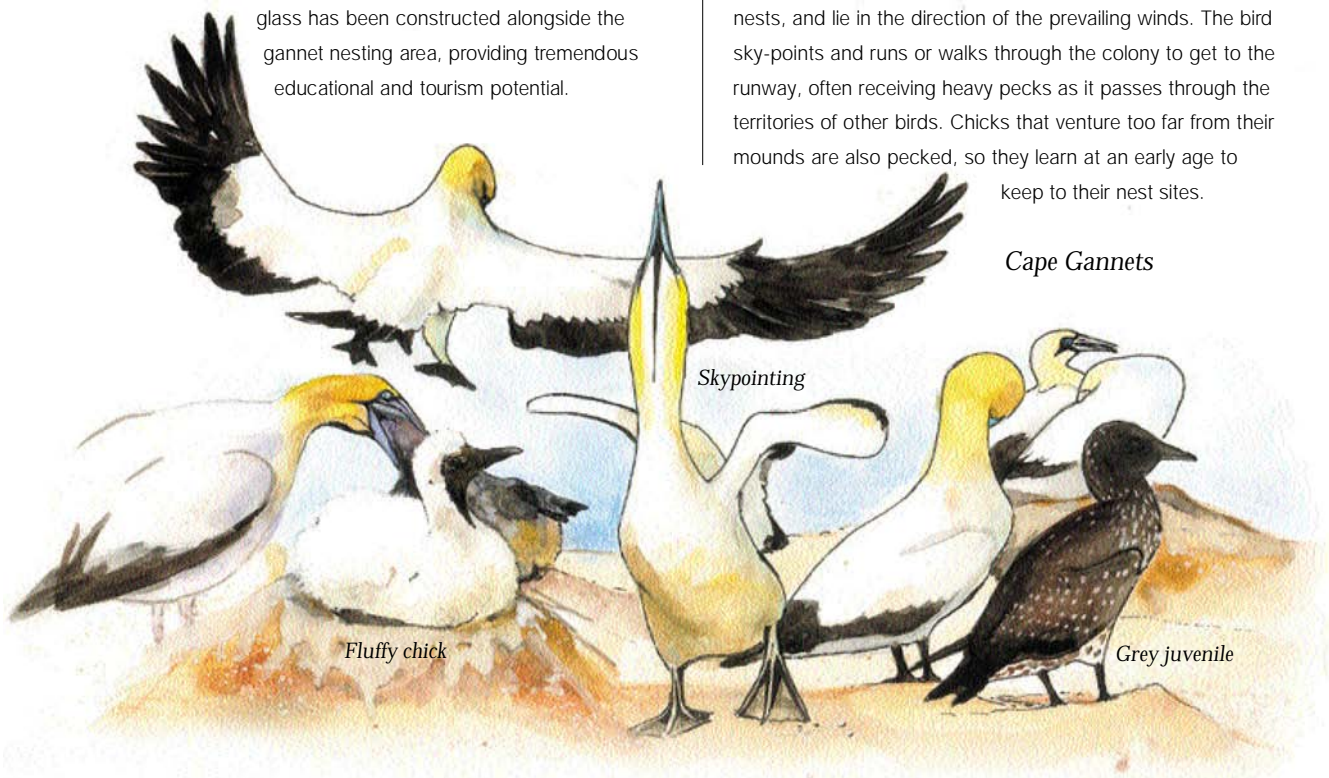
Biology and behaviour

Gannets are gregarious birds that roost in large groups on islands or at sea. The breeding cycle begins at the end of winter (August) when most of the birds arrive at the islands to begin preparations for breeding. They usually return to the same nest site and partner year after year, immediately beginning courtship and construction of a mound in the guano crust, which is soft after the winter rains. The hollow-topped mound is built just beyond the pecking distance of other pairs. Both birds collect nesting material, which includes feathers, seaweed, bones, sticks and small stones. A single, bluish-white egg is laid between September and November, although late eggs and a second laying may take place until February-March.

The male and female alternate incubating the egg beneath their webbed feet for 40-43 days. Newly hatched chicks are naked and black, but before long develop dark brown/grey plumage scattered with white specks. The chick is fed by regurgitation and is ready to fledge after about 3 months. From sunrise every day each parent takes turns to search for food, while the other guards the chick. Prior to departing the adult signals its intention to leave by sky-pointing. The neck is stretched up with the bill pointing skywards, and the wings are dropped slightly down from their normal position against the body. If there is a strongish wind blowing, the adult simply spreads its wings at its mound and jumps vertically into the air. However, if the wind is too light the bird makes its way through the colony to a runway that it uses to pick up enough speed for take-off. These runways are unoccupied corridors of land on the edges of the colony or in between the nests, and lie in the direction of the prevailing winds. The bird sky-points and runs or walks through the colony to get to the runway, often receiving heavy pecks as it passes through the territories of other birds. Chicks that venture too far from their mounds are also pecked, so they learn at an early age to keep to their nest sites.

Breeding colonies, known as gannetries, occur on six islands off the southern African coast – Possession, Ichaboe and Mercury islands off Namibia, Bird Island (Lambert's Bay) and Malgas Island (Saldanha Bay) off the west coast, and Bird Island (Algoa Bay) in the Eastern Cape. All of these islands are protected and most of them are inaccessible but at Lamberts Bay Bird Island, an artificial rock hide with one-way glass has been constructed alongside the gannet nesting area, providing tremendous educational and tourism potential.

Cape Gannets



Gannets eat small pelagic fish that shoal near the surface of the sea, mostly anchovy and sardine (pilchard), but also scavenge hake offal from deep-sea trawlers. Many follow the annual sardine run up the KwaZulu-Natal coast, although their foraging range is normally 200 km. Squid and larval fish also form part of the diet. The birds feed by plunge-diving from about 10 m above the surface, and flapping their wings once underwater to 'swim' after the prey. The impact of hitting the water is absorbed by air cushions at the base of their necks and they have no external nostrils where the water could rush in.

After feeding, the returning bird circles the colony, making low passes over its nest site and calling out to its mate. Once it has made contact it lands alongside its mound and goes through a greeting ritual with its mate – both birds call to one another in a high-pitched crescendo while bill-fencing and neck-bending, the male biting the female's nape. Occasionally the returning bird lands a few metres away from the mound and must run the gauntlet of territorial pecks to reach its mate.

When the chicks are ready to fledge (February-April) they congregate at the water's edge, exercising their wing muscles and preparing for their first take-off. At this time they are no longer fed by their parents. After they have left the island they only return a year later, to form 'clubs' around the edges of the colony where they roost and learn about social behaviour. At 3-5 years of age they are ready to attempt breeding for the first time, and usually do this in the vicinity of the mound where they hatched. Most gannets die at a young age, although some live as long as 20 years.

Population size and conservation

The population size of gannets is estimated from aerial photographs of colonies taken during the breeding season. Between 1956 and 1996 the total population decreased by 31%. This has been attributed largely to the collapse of the sardine resource because of overfishing in the 1960s and '70s. In Namibia the smaller bearded goby replaced sardine as the dominant pelagic species, but since it does not form such dense shoals and occurs deeper in the water than sardine, numbers of gannets declined drastically because of food shortages. During the same period the gannet population at the South African colonies increased slightly. This was because gannets were able to switch to preying mostly on anchovy,

which replaced the sardine population in our waters. However, the increase was not enough to balance the Namibian decline. In recent years the sardine population has shown a steady recovery while the anchovy population has fluctuated widely, and the gannets have reverted to sardine as their main food item.

South Africa now accounts for almost 90% of the global population of Cape Gannets. In the late 1990s the number of breeding pairs on the islands were: Bird Island, Lambert's Bay – 14 000, Malgas Island – 71 000, Bird Island, Algoa Bay – 68 000. The Namibian islands are home to the remaining 20 000 breeding pairs (Possession Island has only 750 pairs and the colony may soon disappear altogether).

Competition with humans and other predators (e.g. seals) for food is a major factor impacting the gannet population. However, oil pollution also poses a serious threat to gannets, and a major spill near a breeding island would spell disaster.

In the past, guano was scraped from the islands to be sold as fertiliser. This negatively impacted the gannet population by removing the material they need to build nesting mounds. Nests built on flat terrain are often flooded, killing both eggs and chicks. Fortunately, gannets are no longer threatened by guano-scraping as the activity has been halted. Today the islands are nature reserves, while the birds themselves are protected from disturbance or exploitation in terms of the Seabird and Seals Protection Act 46 of 1973. While the two Bird Islands are managed by the respective provincial conservation authorities of the Western and Eastern Cape, Malgas Island forms part of the West Coast National Park.

Authors: Meredith Thornton and Sue Matthews September 2000

Classification:

PHYLUM:	Chordata
SUBPHYLUM:	Vertebrata
CLASS:	Aves – Birds
ORDER:	Pelecaniformes
FAMILY:	Sulidae
GENUS:	<i>Morus</i>
SPECIES:	<i>capensis</i>
COMMON NAME:	Cape Gannet

FURTHER INFORMATION: • Payne, A.I.L., Crawford, R.J.M. & Van Dalsen, A. 1989. *Oceans of Life off Southern Africa*. Vlaeberg Publishers, Cape Town.
• Payne, A.I.L., Crawford, R.J.M. & Van Dalsen, A. 1992. *Secrets of the Sea*. Vlaeberg Publishers, Cape Town.

RELATED FACTSHEETS: • Guano • Islands around South Africa • Penguins • Cormorants • Pelagic Fishing • Sardine Run • Seals

