

AFRICAN PENGUIN

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Spheniscus demersus



PLATES FROM THE BOARDWALK:

PEDIGREED PENGUINS' PIED PLUMAGE - 60 million years to the perfect penguin

AFRICAN PENGUINS - Nocturnal Sea Donkeys

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TAIL FLICKING FORTUNE BRINGERS - Cape Wagtails are thought to bring good fortune

NEW HOUSING DEVELOPMENTS - Penguins are being given artificial burrows

FISHY FOWLS, FRUSTRATED SEA-DOGS AND FUEL OIL -

African penguins threatened by over-fishing, seals and oiling

LATE STARTERS AND DRASTIC DECLINES - Aging, declining populations and the start of this colony

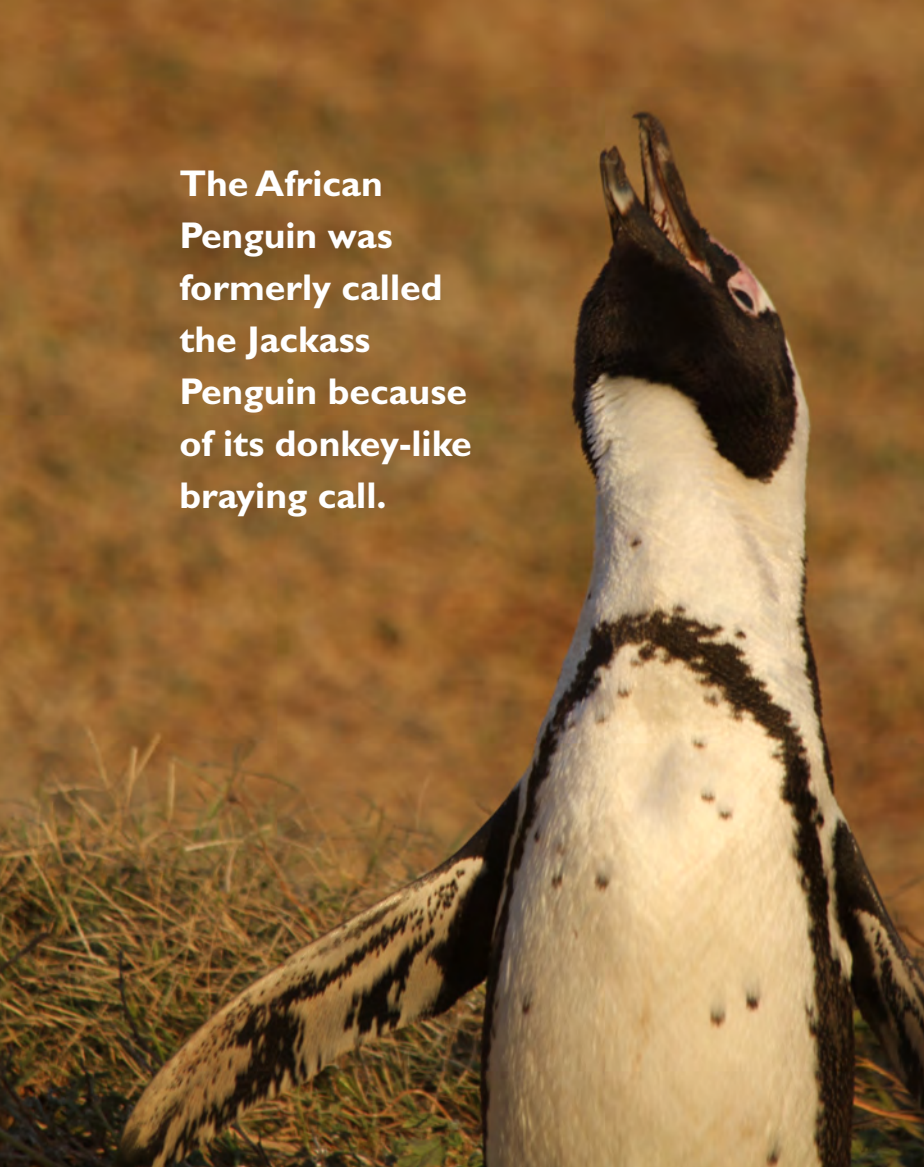
FLIPPING FAST AND DEEP - Speeds and dives of flipper powered penguins

The African Penguin was formerly called the Jackass Penguin because of its donkey-like braying call.

African Penguins breed on only 25 islands and at 3 mainland sites between Algoa Bay in South Africa and central Namibia and nowhere else in the World. It is the only penguin that breeds in Africa. There are another 17 species of penguins.

The first nest at Stony Point was found in 1982.

During the 20th century the global population of this penguin decreased by almost 90% and it is now considered an endangered species. This colony of some 2,000 pairs is now one of the largest; yet in 1900 more than a million penguins bred on Dassen Island alone.



PENGUIN FACTS



Size: Height – 65cm

Mass: 3.1kg (female); 3.6kg (male)

Lifespan: 10-11 years, but many live as long as 20 years and the oldest known was 27.

Feeding: African Penguins feed mainly on oil-rich fish that occur in the upper waters over Africa's continental shelf – especially pilchards and anchovies. As these fish have declined the penguins increasingly eat less nutritious squid and small crustaceans.

Foraging: Breeding penguins find their food within 15km of their nest. Strong swimmers, they normally travel at 3km/h but to escape danger reach 10 and, exceptionally, even 19km/h. Although they can dive to 130m, most dives are of less than 50m. Dives for fish generally last for 1-2 minutes.



Moulting: In the water a penguin's feathers trap air close the body and this insulates them from the cold water. Feathers deteriorate over time and have to be replaced. Adult penguins shed their feathers annually. Before the moult they feed to get fat. Unable to swim for long when in moult they go without feeding for three weeks and during this time live on the fat reserves. At Stony Point most penguins moult in November and December.

African Penguins are social breeders and live in colonies. Most start to breed when 4-6 years old. They are generally faithful to their mate for several seasons, usually until one partner disappears. They prefer to nest out of the sun, under bushes or in burrows scraped under a layer of guano-cemented sand. Here, at Stony Point, they readily use artificial burrows of fibreglass.

Two white eggs are usually laid. These weigh about 110g and are 6-7cm long. The eggs are incubated for 38-41 days and the chicks are fed by their parents for two-three months depending upon how good the fishing is. Both parents incubate the eggs and feed the chicks. It takes about 25kg of fish to rear a penguin chick until it leaves the colony.



THREATS TO PENGUIN POPULATIONS

Predators:

At sea: Cape Fur Seals (often) and Great White Sharks (infrequently)

On Land: Cape Clawless Otters and several species of mongoose may kill and eat chicks and even adult penguins. Kelp Gulls prey on inadequately guarded eggs and small chicks. Uncontrolled dogs may attack adults and chicks.

Human related threats:

Formerly: collection of penguin eggs and removal of guano

Currently; Oil spills, and severe competition from commercial fishing



PEDIGREED PENGUINS'

PIED PLUMAGE

60 million years to the perfect Penguin

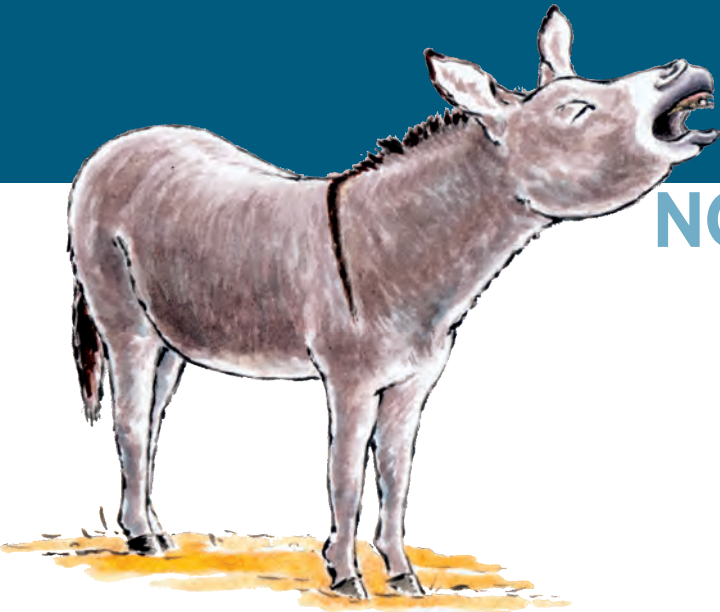
60 million years ago, penguins had already converted their wings into bony flippers. Although they cannot fly in the air their flippers enable them to “fly” underwater where they hunt fish, crustaceans and squid.

They evolved in the cool waters of the southern hemisphere. One species reaches the equator in the Galapagos Islands. However, no penguins have been able to traverse warm tropical seas to expand into the northern hemisphere. In that hemisphere three types of penguin-like flightless seabirds evolved but have all become extinct.

All penguins have black backs and white underparts. The dark backs reduce bleaching by sunlight. White bellies make it harder for underwater predators to see surface-swimming penguins against the sky.

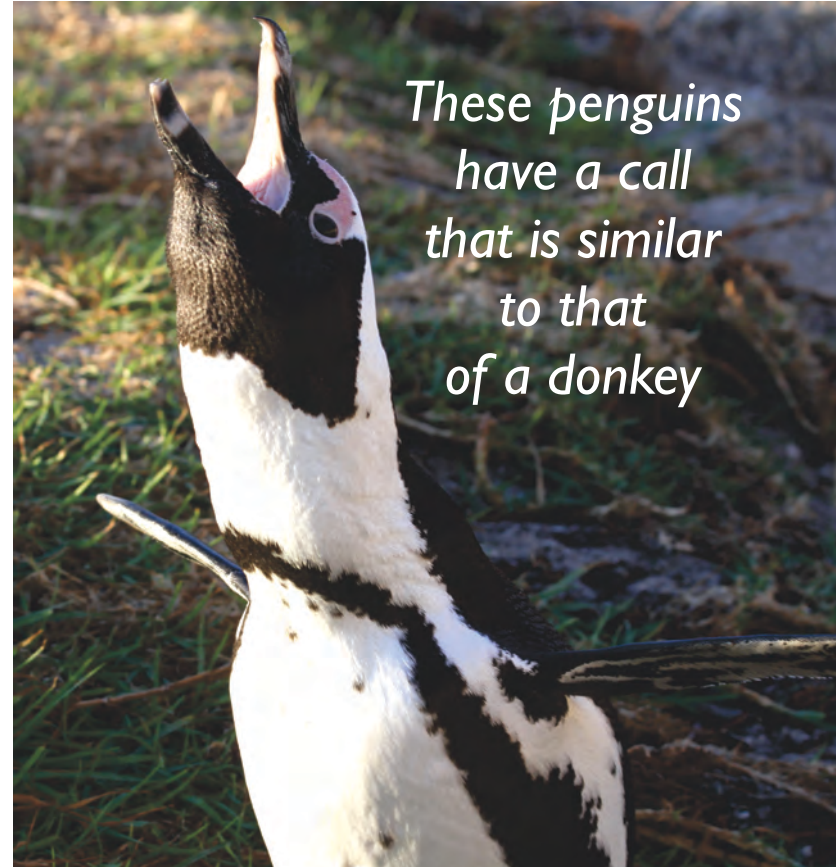


AFRICAN PENGUINS - NOCTURNAL SEA DONKEYS



They were formerly called Jackass Penguins. Three other species of penguins have similar calls. This species, which is found only on this continent, is now called the African Penguin.

Penguins need daylight for finding food. During the day many birds are away from their colonies. Courtship calling starts in the late afternoon and evening when the birds return from the sea and greet their mate at the nest.



*These penguins
have a call
that is similar
to that
of a donkey*

FEAST, FAST AND FEATHER CHANGE

Penguins double their weight before moulting then starve for 3 weeks

Penguins need their full coat of feathers to maintain their body temperature in the cold sea. To keep the quality of their plumage they have to moult once a year. The change from old faded feathers to a smart new plumage takes 3 weeks.

During the moult penguins cannot go to sea to feed. So before moulting they gorge themselves. They lay down fat deposits that double their weight. Through the moult they live off this fat and are irritable.

Only once their new feathers have grown fully do the now slim penguins go to sea again.





BARE BELLIES AND BAKERIES

How penguins incubate eggs and former human use of eggs for food

African Penguins lay two white eggs. Both parents take turns in incubation which lasts for 38-42 days.

Penguins develop an area of bare skin on the lower belly that is only exposed when incubating. The eggs are held against this with one egg in front of the other.



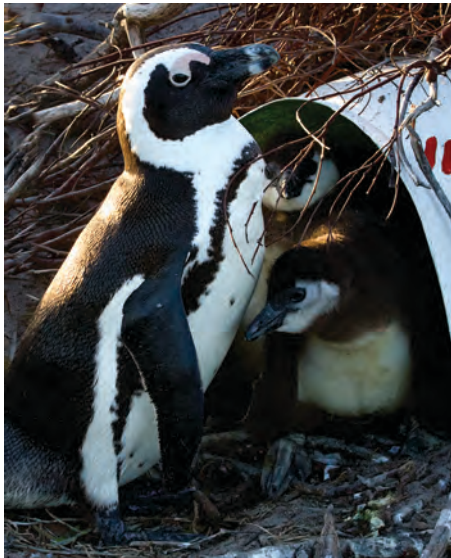
Formerly tens of thousands of penguin eggs were collected for sale in Cape Town. These eggs were especially bought by bakeries. Since 1967 it has been illegal to take any penguin egg.



FLUFFY COMPETITORS

Down-covered penguin chicks compete for food from their parents

Penguin chicks hatch covered in down. This keeps them warm until they develop their own feathers. They grow so fast in the first ten days that this gets too thin to cover them. A new thicker down layer grows.



The chicks hatch 1-2 days apart. The first hatched chick gets fed and is stronger before its sibling hatches. If food becomes inadequate for two chicks the parents prefer to feed the stronger one. The weaker one may die or may reduce growth until the older sibling leaves. It then gets all the food and can complete its growth.

The chicks are fed by their parents for some 80 days (64-130) depending upon food availability. Better fed ones go to sea with fat reserves to last them through the period in which they must learn to fish.



FISH PORRIDGE AND FLEDGLING

Penguin chicks are fed partly digested fish until they leave the colony

Penguin parents feed their chicks for three months on regurgitated fish “porridge”. Once they are fully feathered the young penguins go to sea.

The fledglings have never seen an entire fish in their lives. Now they must find and catch fish for themselves. Only those that are able to do so, will survive. Competition with industrial fisheries for sardines and anchovies

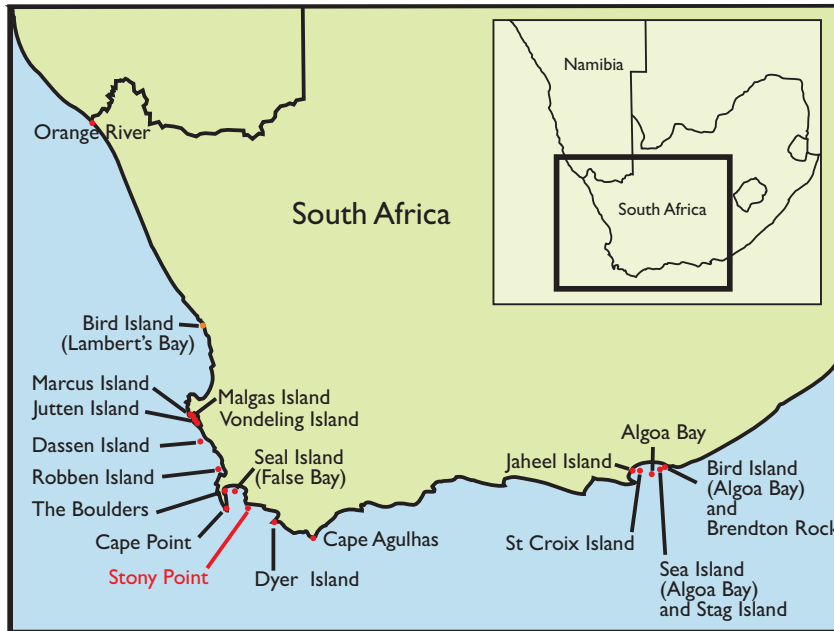
has reduced chances of penguins finding food. This is an important cause of their population decline.

Fledglings are initially unable to swim at the same speeds as adults. They cannot swim fast enough to catch adult sardine and anchovy and probably feed on larval and juvenile fish that swim more slowly.



FISHY FOOD FOLLOWERS

Penguins have followed fish stocks from the west to the south coast



2011 - African Penguin breeding colonies in South Africa.

Bird Island at Lambert's Bay, an important colony became extinct in the early 21st century.

The numbers of near-surface shoaling fish off the west coast have dropped. Penguin numbers there have collapsed. Fish stocks are still good further east along the coast, and some penguins have moved to Stony Point. The decline of African penguins in South Africa in the early 21st century was to a large extent attributable to high mortality of adult birds at west coast colonies, following a large decrease of adult sardines in this region.

There are few islands off the south coast so penguins have established several mainland colonies. This colony at Betty's Bay, first settled in 1982 most probably from Dyer Island, has increased dramatically in size and is now one of the largest.

PIED FISH HERDERS



Penguins' plumage helps them herd fish into tight shoals

Penguins fish in groups. When they find a shoal they swim around it. The fish are frightened by the penguins' black and white patterned plumage and swim closer together. Penguins then attack the compressed shoal from below with the fish silhouetted against the sky.

Fisheries can reduce fish stocks - both small and large scale. In some places, it is now increasingly difficult for penguins to find food within a daily 11-15 km swimming distance from their colonies.



BANKS ON THE BRINK

*Bank Cormorants
breed on the outer
rocks and are in
danger of
extinction*



Bank Cormorants occur only on the rocky coasts of south-western Africa. Their numbers have fallen dramatically over the past 20 years. The global population is now less than 5,000.

They make nests of seaweed on rocks by the sea. When they poo they drop their tail. This directs the liquid faeces onto the side of the nest. As this dries it cements the nest to the rock.



FINE FEATHERED

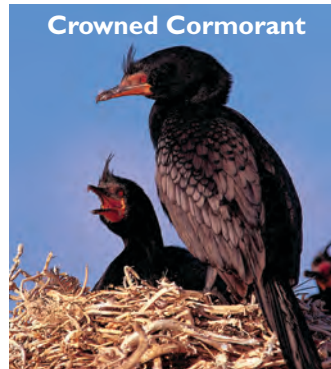
FOURSOME

Four species of cormorants breed on the rocks

This is one of few places in the world where you can see four cormorant species together.

Three of these, all mainly black in appearance, occur only in south-western Africa.

- The smallest is the Crowned Cormorant, which has a crest.
- The middle-sized Cape Cormorant has a yellow patch at the base of the beak.



- The larger Bank Cormorant has a white rump during courtship.
- The largest is the White-breasted Cormorant which occurs across sub-Saharan Africa. It is a sub-species of the Great Cormorant which occurs across Eurasia and in Australia.

FEAST SITE OR RUBBISH DUMP?

Shells indicate repeated abalone feasts by stone-age people

This heap of very old abalone shells is a midden.

It reflects repeated collection of abalone by the Khoi-san people over many years. The meat was removed from the shells and either eaten locally or wind dried for later use. This midden is a registered heritage site. No materials of any kind may be removed from it.





SPINY-TAILED SUN WORSHIPPERS

Armour-scaled girdled lizards sunbathe on rocks

Girdled lizards are found only in Africa. They eat insects, snails, caterpillars, and ants. They are restricted to rocks and they use crevices for safety and sleeping.


Their scales are arranged in rows hence the name girdled. They have large distinct heads and stout limbs. These lizards can shed their tails which grow back very slowly.

They give birth to live young.





DUNG DROPPING DASSIES



*Rock Hyrax, locally called
Dassies, mark their
territories with
dung*

Dassies look like giant brown guinea-pigs. They live in groups of a dominant male, several females and their young. They forage within 50m of a rocky refuge – here, the stone-works of the old whaling station. They feed mainly on plants and spend 90% of the day resting and digesting.



The hyrax family were formerly the main grazing animals in Africa but have been largely replaced by antelopes. Hyraceum - fossilized Dassie dung - is used instead of musk or civet in some perfumes!

GREY-FACED SURVIVORS

Penguins that survive their first year come in to moult with grey-faces

When they first leave the colony young penguins have a bluish tinge to the feathers. They spend the next 12-18 months at sea. Many are unable to find sufficient food and starve to death or are caught and eaten by seals.

Those that survive, come ashore as grey and white plumaged juveniles. At the end of this juvenile stage, those that have fed enough and have fat reserves to last through a month, then come ashore to moult into adult plumage.



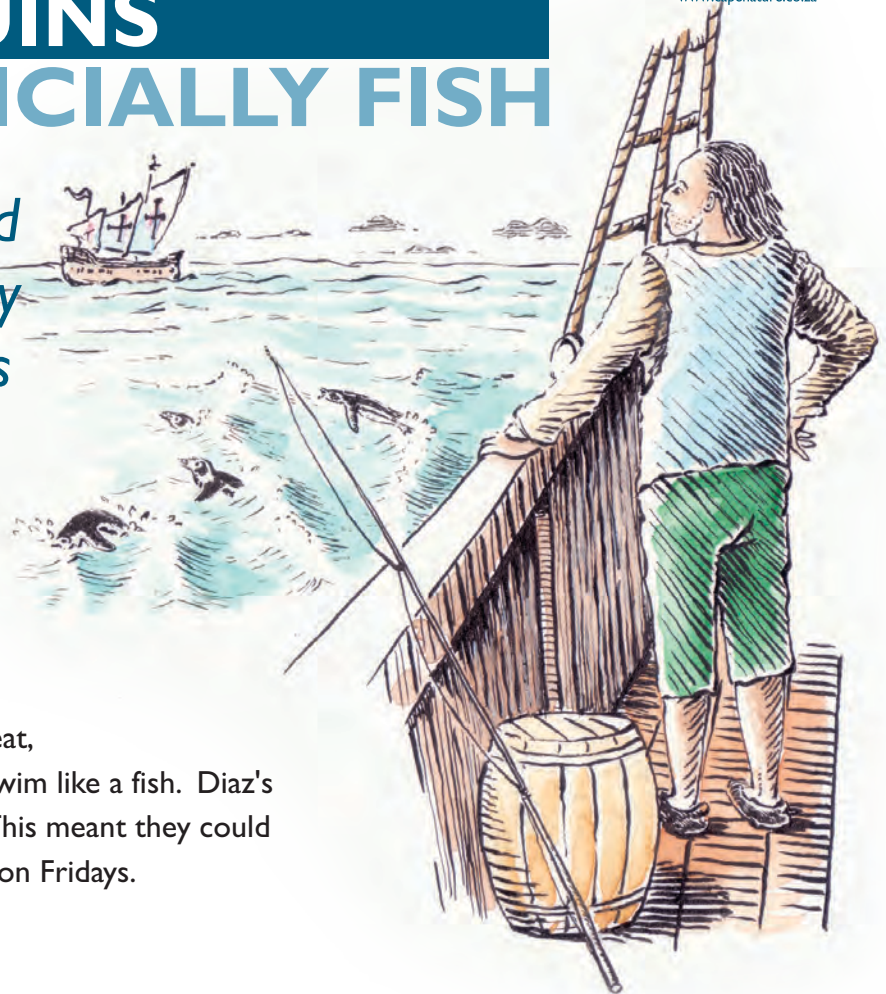
WHEN PENGUINS WERE OFFICIALLY FISH

Catholic sailors considered penguins were fish so they could eat them on Fridays

Portuguese Bartholomew Diaz reached southern Africa in 1467.

He and his crew were the first Europeans to see penguins.

Catholics were allowed to eat fish, but not meat, on Fridays. Penguins could not fly but could swim like a fish. Diaz's crew chose to consider penguins to be fish. This meant they could enjoy an easily obtained source of fresh meat on Fridays.



LITHOPHILIC LICHENS

*The patches of colour
are rock-loving lichens*

Lichens are an association of fungi and cyanobacteria (bacteria and cyanobacteria). The coloured outer fungi protect the bacteria from intense sunlight and from drying out. The fungi also absorb mineral nutrients from the rocks. The bacteria processes the organic nutrients from carbon dioxide and the cyanobacteria produce ammonium from N_2 gas by Nitrogen fixation.

Lichens live in extreme environments – like this bare rock and can be used as indicators (or biomonitors) in changes to the surrounding environment that relate to air quality or climate.



LIGHTHOUSE OR WATCH TOWER?

The circular building perched on the outer rocks was built by the whalers

During the early whaling days boats did not have radio communication with the shore. The building probably served as a watch tower. A man stationed in its shelter could see an approaching ship well before those at the harbour. He could then alert the factory staff to get ready.

Some think the building served as a lighthouse.



EGG THIEVES

AND SCRAP SNATCHERS

Two kinds of gulls forage within the penguin colony

The smaller grey and white Hartlaub's Gull is named after a German scientist. These gulls pick up scraps of fish spilt by penguins. Mainly they feed on soft-bodied invertebrates along the shore.



The Kelp gull is the larger of the two gulls and black and white in colour. Their scientific name is 'dominicanus' as their black and white colours match the cloaks of Dominican monks.

The Kelp Gull sometimes steals exposed penguin eggs or small chicks. They also fly up with mussel shells which they break by dropping them onto rocks.



LETHAL LEOPARD AND OTHER PREDATORS

A leopard, genets, otters, caracal and mongooses have preyed on penguins here

In 1986 a young Cape Leopard got into the colony. In a frenzy it killed 60 penguins. It was later shot by a sheep farmer near Pringle Bay.

Commoner recorded predators are Water Mongoose, Large Spotted Genet and the Cape Clawless Otter. These animals may eat penguin eggs chicks or even adults. Management interventions, according to existing policy, may be required to protect penguins from these predators.



TAIL FLICKING

FORTUNE BRINGERS

Cape Wagtails are thought to bring good fortune

These small birds continuously wag their long tail. The tail movements probably distract the insects and similar animals upon which they feed.

They are common shore-line foragers where they take sand hoppers and a particular fly whose larvae grow in washed up seaweeds.

Wagtails feature in the folklore of Khoisan, Xhosa and Zulu speakers probably due to their frequent association with cattle.

Wagtails are traditionally afforded protection.



NEW HOUSING

DEVELOPMENTS

Penguins are being given artificial burrows

Penguins are adapted to live in cool water. On land they suffer from heat on sunny days.

Accumulated dried penguin poo is called guano. A steady build up of this guano at seabird breeding colonies enables penguins to burrow into it and make their burrows. These burrows provide shade for the parents, eggs and chicks. In this expanding colony, deep deposits of guano are yet to be created.”

To provide shade for the penguins, artificial cement or fibreglass arches are being used to help penguins breed successfully.



FISHY FOWLS, SEA-DOGS AND FUEL OIL

African Penguins threatened by over-fishing, seals and oil

In the late 1940s South Africans bought equipment from the collapsed fisheries of California. This equipment processed sardines (locally called pilchards) and anchovies. Some were canned but even prime fish were ground up as meal for domestic animals. This led to public complaints about the fishy taste of South African chicken and pork. Decline in availability of fish stocks has led to the closure of factories and to a loss of food for the penguins.



The number of Cape Fur-seals has risen from less than 100,000 in 1900 to more than 2 million. The seals compete with penguins for food and displace penguins from some of their breeding islands. Big male seals maintain harems of females. Young males must wait 8-10 years before being able to mate. These young males often prey upon seabirds including penguins.

Oil spilled at sea clogs penguin feathers. Incapable of maintaining their body temperature in cold water they come ashore. There, unable to catch food, they starve to death.

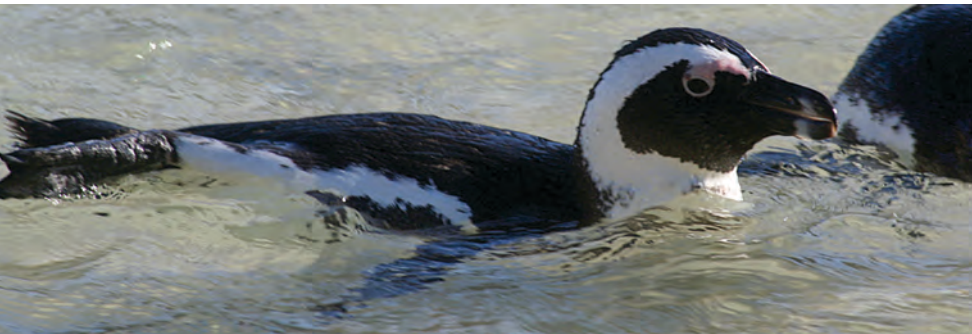
FLIPPING FAST AND DEEP

Speeds and dives of flipper powered penguins

Using their feet to paddle on the surface African Penguins travel at 3km/h but using their flippers they can swim underwater at 8km/h. To travel really fast they porpoise – swimming fast then leaping in an arc out of the water whilst taking a breath. Porpoising penguins travel at 10-12kmph or if really pushed, up to 19km/h.

Younger penguins are less efficient. When they first go to sea their top speed is 4-6km/h. This improves to 8-12km/h by the end of their first year. The slower speeds of young penguins make them easier for predators to catch.

African Penguins can dive to 130m but most dives are less than 50m. They are able to hold their breath for up to 2½ minutes.



LATE STARTERS

AND DRASTIC DECLINES

It takes time for penguins to develop their fishing skills to the stage when they can not only feed themselves but also 1 or 2 hungry chicks. Most African Penguins do not start to breed until they are 5 years old. Many survive to over 20 and the oldest African Penguin so far recorded was 27.

In the early 2000s the global population of the African Penguin was estimated to be 63,000 breeding pairs; down from well over 2 million penguins in 1900.

*Aging, declining
populations and
the start of this
colony*

