

THE BENGUELA ECOSYSTEM

Namibia's coastal waters are among the most productive in the world, due to the Benguela Current Upwelling System. This powerful oceanic current, is one of the world's major eastern boundary current systems. Winds and currents in the region drive cold nutrient-rich waters up from the deep to the surface. These nutrients nourish phytoplankton, forming the foundation of a thriving marine ecosystem.

The Benguela Current, which flows along Namibia's entire coastline, features three upwelling cells. This unique combination of factors makes the region one of the world's most biologically abundant marine environments, supporting Namibia's economy and livelihoods.

ABOUT THE NAMIBIAN ISLANDS MARINE PROTECTED AREA

The Namibian Islands' Marine Protected Area (NIMPA). Africa's second largest marine protected area (MPA) and Namibia's only, proclaimed in 2009, is one of the most ecologically significant conservation areas along the southern coast of Namibia. Covering a large expanse of ocean influenced by the Benguela Current, NIMPA was designated to protect marine biodiversity, seabird breeding particularly colonies, mammals, and the diverse marine life that thrives in these nutrient-rich waters. As an MPA, the NIMPA represents an essential component of Namibia's commitment to safeguarding its marine ecosystems while balancing sustainable resource use.

Geographically, NIMPA encompasses a series of offshore islands such as Halifax Island, Possession Island, Ichaboe Island, and Mercury Island, which are crucial to the life cycles of many marine species. The NIMPA serves as a primary breeding site for seabirds, including near threatened species such as the African penguin, Cape gannet, Cape cormorant, Crowned cormorant and Bank cormorant, all of which depend on these islands for reproduction.

Despite its ecological significance, the marine ecosystem within NIMPA faces several challenges. Overfishing poses one of the greatest threats, as the depletion of fish stocks directly impacts the availability of prey for seabirds and marine mammals. The decline in fish populations has led to decreased breeding success for species such as the African Penguin, which relies heavily on sardines and anchovies. Furthermore, human activities such as seal harvesting, guano scraping, egg collecting and whale harvesting which was historically practiced on and around these islands, and more recently oil spills have severely disrupted the fragile habitats of seabirds.

Other key species found in the NIMPA include Heaviside's dolphins, whales, Cape fur seals. These species are threatened by overfishing, mining, pollution, untested phosphate extraction and live marine mammal harvesting.

To address these threats, NIMPA has implemented several conservation measures. Fishing restrictions within the MPA are strictly enforced to prevent overexploitation of marine resources, ensuring that enough prey is available for the area's predator species. The protected status of the islands also limits human access, minimizing disturbance to sensitive breeding colonies. In addition, ongoing monitoring and research within the MPA help to track the health of the ecosystem and the populations of key species, allowing for adaptive management of the area. These efforts are part of a broader conservation strategy aimed at restoring and maintaining the biodiversity of Namibia's marine environment.

In conclusion, the Namibian Islands' Marine Protected Area is a model of how MPAs can function to protect biodiversity while also promoting sustainable use of marine resources. The area's rich biodiversity, particularly its seabird colonies and marine mammals, underscores the ecological importance of protecting such habitats from the multiple threats they face. By implementing and enforcing effective conservation measures, NIMPA ensures the continued survival of many endangered species and contributes to the long-term health and resilience of Namibia's marine ecosystems.

ABOUT THE ALBATROSS TASK FORCE

The Albatross Task Force Namibia (ATF Namibia), funded by the Royal Society for the Protection of Birds (RSBP), is a vital part of a global initiative dedicated to

Their slow reproductive cycles make them particularly vulnerable to population declines caused by bycatch. In addition to their ecological importance, seabirds hold

addressing the critical issue of seabird bycatch in marine fisheries. Launched in Namibia in 2008, the ATF focuses on reducing the incidental capture and mortality of seabirds in the country's demersal longline and trawl fisheries. These fisheries, which target economically important species like hake, have historically been responsible for significant seabird deaths. Each year, approximately 30,000 seabirds, including vulnerable species such as albatrosses and petrels, were killed in Namibian waters, primarily due to collisions with fishing cables or entanglement on baited hooks. Recognising the urgent need for conservation, ATF Namibia collaborates with local partners such as the Namibia Nature Foundation, the Ministry of Fisheries and Marine Resources, and the Fisheries Observer Agency. The initiative's primary goal is to implement effective bycatch mitigation measures, thereby improving the conservation status of seabirds and supporting sustainable fisheries.

Among the solutions ATF Namibia has introduced are bird-scaring lines, night setting, and the use of weighted hooks. These measures have proven remarkably effective. In trawl fisheries, bird-scaring lines, also known as tori lines, have reduced seabird mortality by 85%. In longline fisheries, the combined use of tori lines, night setting, and weighted hooks has achieved a staggering 98% reduction in deaths. By employing these methods, the ATF has saved thousands of seabirds each year and helped to transform Namibia into a global leader in seabird conservation within the fishing industry.

ATF Namibia's work extends beyond implementing technical solutions. The team is deeply involved in training fishery observers and crew members, raising awareness about the importance of seabird conservation, and collecting critical data to monitor the effectiveness of mitigation measures. This data is invaluable for understanding the patterns and causes of bycatch and for refining strategies to further reduce seabird fatalities.

Namibia's seabird populations include iconic species such as the Black-browed Albatross, White-chinned Petrel, and Shy Albatross, many of which are classified as vulnerable or endangered. These seabirds are uniquely adapted to life at sea, with long lifespans, late maturity, and slow reproductive rates. For example, albatrosses often take up to 10 years to reach sexual maturity and typically lay only one egg per year.

This booklet was facilitated by:



cultural and historical significance. Their ability to navigate vast ocean distances and their role in maintaining marine ecosystems are a testament to the interconnectedness of ocean life. Some species, like the albatross, can travel over 120,000 kilometers in a single year, underscoring their resilience and adaptability.

The ATF's efforts in Namibia align with the broader Ecosystem Approach to Fisheries (EAF), which emphasizes the need to protect marine ecosystems as a whole. By reducing seabird bycatch, the ATF contributes to maintaining the delicate balance of marine ecosystems while ensuring that fisheries remain productive and sustainable.

One of the most significant outcomes of ATF Namibia's work has been its contribution to the certification of Namibia's hake fisheries by the Marine Stewardship Council (MSC). The reduced seabird mortality rates achieved through ATF interventions have been instrumental in meeting the MSC's rigorous standards, showcasing Namibia's commitment to marine conservation.

Looking ahead, ATF Namibia aims to build on its successes by increasing compliance with seabird mitigation measures across all fishing vessels. The organization is also focused on further training initiatives in partnership with the Food and Agriculture Organization (FAO) to promote an ecosystem-based approach to conservation. By fostering collaboration among fisheries, government agencies, and conservation groups, the ATF is working to ensure that the dramatic reductions in seabird bycatch achieved in recent years are maintained for generations to come.

Through its innovative solutions. community engagement, and dedication to science-based conservation, the Albatross Task Force Namibia continues to make a profound impact on the preservation of seabirds and the sustainability of Namibia's fisheries. Its work serves as a powerful example of how targeted efforts can address environmental challenges while supporting economic livelihoods, proving that conservation and development can go hand in hand.







(NIMPA+) project

TABLE OF CONTENTS

Cetaceans of Southern Africa	5
Heaviside's Dolphin (Cephalorhynchus heavisidii)	3
Bottlenose Dolphin (Tursiops truncatus)	7
Dusky Dolphin (Lagenorhynchus obscurus)	}
Southern Right Whale (Eubalaena australis))
Humpback Whale (Megaptera novaeangliae)10	0
Pelagic and Coastal Seabirds of Namibia1	1
Black-Browed Albatross (Thalassarche melanophris)	2
Shy Albatross (Thalassarche cauta)	3
Atlantic Yellow-nosed Albatross (Thalassarche chlororhynchos)12	4
Cape Gannet (Morus capensis)	
White Chinned Petrel (Procellaria aequinoctialis)	6
Pelagic Species Wingspan	7
African Penguin (Spheniscus demercus)	8
Cape Fur Seals (Arctocephalus pusillus pusillus)	0
Activity22	2

Editing:

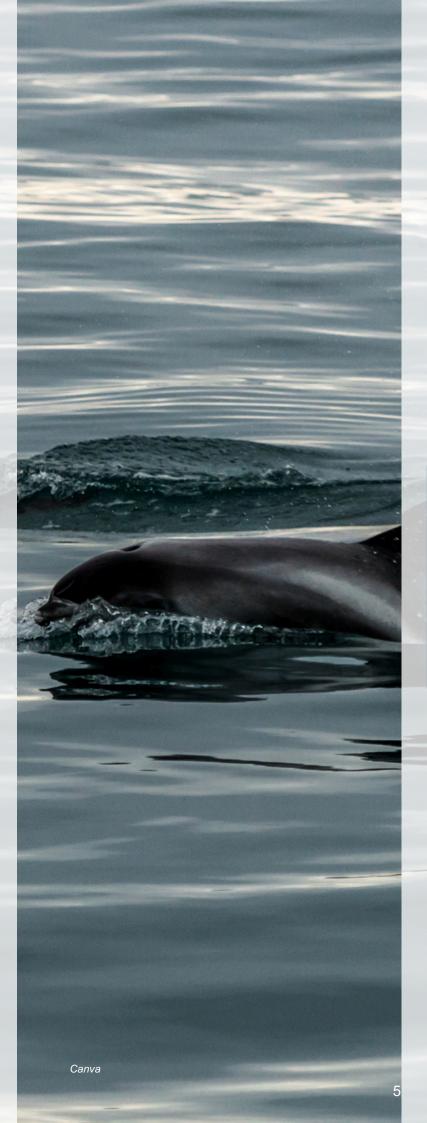
Priskilla Nghaangulwa (Namibia Nature Foundation) Martha Iyambo (Namibia Nature Foundation) Rodney Braby (Namibia Nature Foundation) Sharon Kahunda (Namibia Nature Foundation) Carolin Mutorwa (Namibia Nature Foundation)
Sunnypo Imalwa (Namibia Nature Foundation)

Booklet designed by: Sunnypo Imalwa (Namibia Nature Foundation)

Photo credits:

The Namibian Dolphin Project Sea Search Research and Conservation Titus Shaanika (Consultant) Jessica Kemper (Consultant) NIMPA Plus Project (GRID Arendal)

Photographs and graphics used in this publication were either created by the author, sourced from Canva, or provided by contributing photographers. All rights remain with the original creators and are used with permission where required.



CETACEANS OF SOUTHERN AFRICA

Whales, porpoises and dolphins collectively known as "cetaceans" are marine mammals. In the waters of Southern Africa, specifically the Benguela region are whales and dolphins. These animals are further classified into two primary morphological groups based on their feeding structures as well as behaviour.

Odontocetes (toothed whales): they have teeth and primarily feed on fish and squid. This includes bottlenose dolphins, Heaviside's dolphins, dusky dolphins and killer whales.

Mysticetes (baleen whales): they lack teeth and instead have baleen plates (made of keratin) which they use to filter small fish and plankton species from the water. This includes Southern right whales and humpback whales commonly found in Namibia.

CETACEAN SPECIES COMMONLY FOUND IN NAMIBIAN COASTAL WATERS ARE:

- Heaviside's Dolphin (Cephalorhynchus heavisidii)
- Bottlenose Dolphin (Tursiops truncatus)
- Dusky Dolphin (Lagenorhynchus obscurus)
- Southern right whale (Eubalaena australis)
- Humpback whale (Megaptera novaeangliae)

Cetaceans are top predators and play an important role in marine ecosystems. They help maintain the food chain balance by preying on fish and squid, thus regulating the populations of these species. This predatory role prevents any single species becoming too dominant, which can have cascading effects throughout the ecosystem. Additionally, cetaceans contribute to nutrient cycling through their waste products, which provide essential nutrients for phytoplankton, the base of the marine food web. This process supports the entire marine food chain, including fish species that are important for both ecological balance and human consumption.

HEAVISIDE'S DOLPHIN

Distribution	Found primarily along the southwest coast of Africa (endemic to the Benguela region), particularly in the cold, nutrient-rich waters of the Benguela Current off Namibia. They prefer shallow coastal waters and are frequently seen near Walvis Bay and Lüderitz.
Physical Characteristics	Small, robust body with a distinctive blunt head and triangular dorsal fin. They are grey with lighter underbellies.
Diet	Primarily fish and squid.
Behaviour	Known for their acrobatic displays and curious nature, often approaching moving boats and surfing their waves known as "bow-riding."
Reproduction	Females give birth to a single calf after a gestation period of about 10-11 months.



BOTTLENOSE DOLPHIN

Distribution	Commonly found in both inshore and offshore waters. In Namibia, they are often seen around the Skeleton Coast and Walvis Bay. They are adaptable and inhabit a range of marine environments, from estuaries to open seas.
Physical Characteristics	Medium-sized with a pronounced beak and a curved dorsal fin. They have a grey coloration, with lighter underbellies.
Diet	Fish, squid, and crustaceans.
Behaviour	Highly intelligent and social, known for complex communication and social structures. They often interact with humans and are a common sight in coastal waters.
Reproduction	Females give birth every 2-3 years after a gestation period of about 12 months.



DUSKY DOLPHIN

Distribution	Inhabits the coastal waters off southwestern Africa, particularly in the Benguela Current region. They are often seen in groups near Walvis Bay and the southern Namibian coast.
Physical Characteristics	Medium-sized with a robust body, dark grey to black on the back, and lighter on the belly, with distinct white patches on the sides.
Diet	Fish, squid, and small schooling fish.
Behaviour	Extremely social and energetic, known for their acrobatic leaps and complex group behaviors.
Reproduction	Females give birth to a single calf after a gestation period of about 11 months.



SOUTHERN RIGHT WHALE

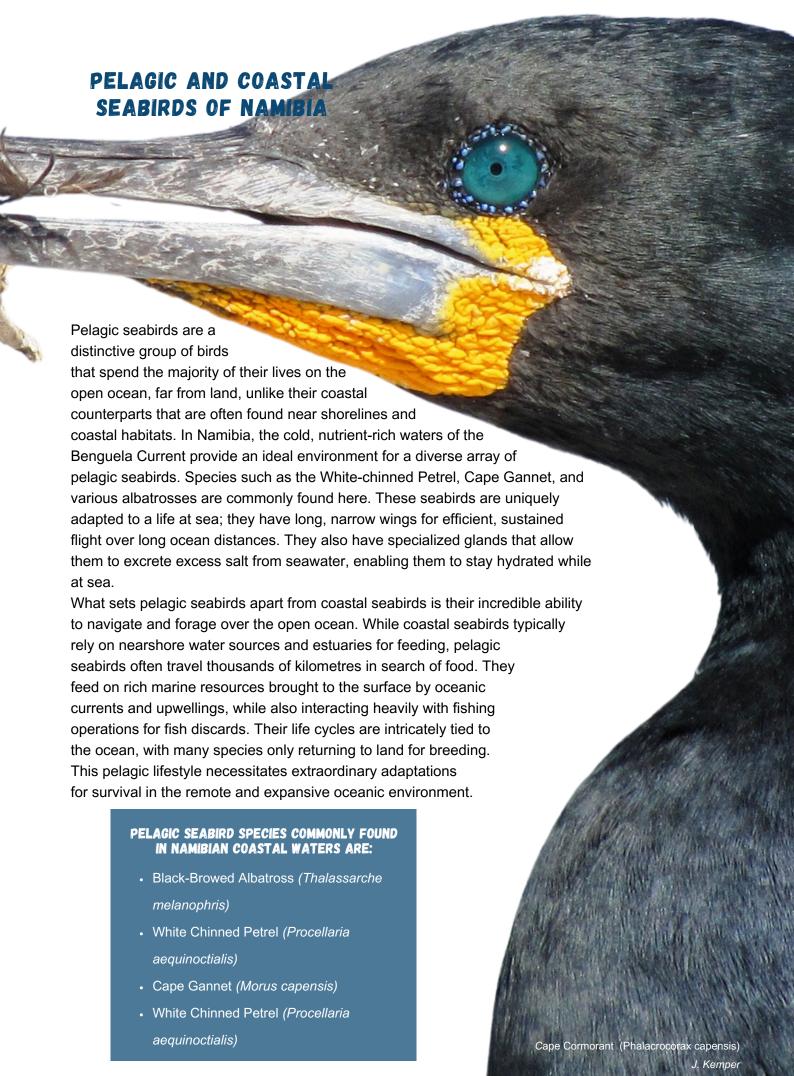
Distribution	Migrates along the Namibian coast, particularly during the breeding season. They are often seen in sheltered bays and coastal waters, where they come to calve and nurse their young.
Physical Characteristics	Large baleen whales with callosities on their heads. They are mostly black with some white patches.
Diet	Mainly krill and small crustaceans.
Behaviour	Slow swimmers, often seen at the surface. Known for their calm nature and frequent breaching behavior.
Reproduction	Females give birth every 3-4 years after a gestation period of about 12 months.



HUMPBACK WHALE

Distribution	Known for their long migratory routes, they travel along the Namibian coast, usually during their migration to breeding grounds. They can be seen in both coastal and open ocean waters.
Physical Characteristics	Large baleen whale with long pectoral fins and distinctive knobby head. They are dark on the dorsal side and lighter underneath.
Diet	Krill, plankton, and small fish.
Behaviour	Known for their acrobatic breaches and complex songs. They migrate long distances between feeding and breeding grounds.
Reproduction	Females give birth every 2-3 years after a gestation period of about 11-12 months.





BLACK-BROWED ALBATROSS (THALASSARCHE MELANOPHRIS)

Wingspan	2.1m - 2.5m
Breeding sites and season	Sites: Sub-Antarctic and Antarctic islands Season: September – April
Incubation and Fledging period	Incubation: 72 days Fledging: 72 days (Fledging refers to the stage in a young seabird's life when it develops sufficient feathers and muscle strength to leave the nest and make its first flight)
Conservation Status	Endangered (Endangered is a category on the International Union for Conservation of Nature (IUCN) Red List of Threatened Species. It is assigned to species that are facing a very high risk of extinction in the wild)
Threats	Longline and trawl fisheries as well as introduced mammals on islands (rodents and cats), pollution and climate change.



SHY ALBATROSS

Wingspan	1.9m – 2.6m
Breeding sites and Season	Sites: Islands off Australia (Albatross Island, Pedra Branca, and the Mewstone) Season: September - December
Incubation and Fledging period	Incubation: 121 days Fledging: 136 days (Fledging refers to the stage in a young seabird's life when it develops sufficient feathers and muscle strength to leave the nest and make its first flight)
Conservation Status	Near Threatened (Vulnerable is a category on the International Union for Conservation of Nature (IUCN) Red List of Threatened Species. It is assigned to species that do not currently qualify as threatened but are close to qualifying or are likely to qualify for a threatened category in the near future)
Threats	Longline and trawl fisheries, pests on islands, nets site competition with Gannets, climate change, storms.



ATLANTIC YELLOW-NOSED ALBATROSS

T.Shaanika

MLDM I KU33	(THALASSARCHE CHLORORHYNCHOS)
Wingspan	1.8m – 2.1m
Breeding sites	Sites: An endemic breeder to the Tristan da Cunha islands (Tristan, Gough, Nightingale and Inaccessible) Season: August – April
Incubation and Fledging period	Incubation: 121 days Fledging: 182 days (Fledging refers to the stage in a young seabird's life when it develops sufficient feathers and muscle strength to leave the nest and make its first flight)
Conservation Status	Endangered (Endangered is a category on the International Union for Conservation of Nature (IUCN) Red List of Threatened Species. It is assigned to species that are facing a very high risk of extinction in the wild)
Threats	Longline and trawl fisheries, pests and introduced mammals (e.g. through ship ballast water discharge) on islands, climate change.
ALBATROS World Albatross	SS DAY s Day is
celebrated every y June. This day air	
awareness about A	
highlighting the urg	
protect these majes	
and their habitat	ts for the

benefit of future generations.

(MORUS CAPENSIS)

CAPE GANNET

Wingspan	1.85m
Breeding sites and season	Sites: Southern Africa, breeding on six islands between Mercury Island (Namibia) and Bird Island, Algoa Bay, (South Africa) Season: August – April
Incubation and Fledging period	Incubation: 46 days Fledging: 105 days (Fledging refers to the stage in a young seabird's life when it develops sufficient feathers and muscle strength to leave the nest and make its first flight)
Conservation Status	Endangered (Endangered is a category on the International Union for Conservation of Nature (IUCN) Red List of Threatened Species. It is assigned to species that are facing a very high risk of extinction in the wild)
Threats	Climate change, prey scarcity, and oil spills.

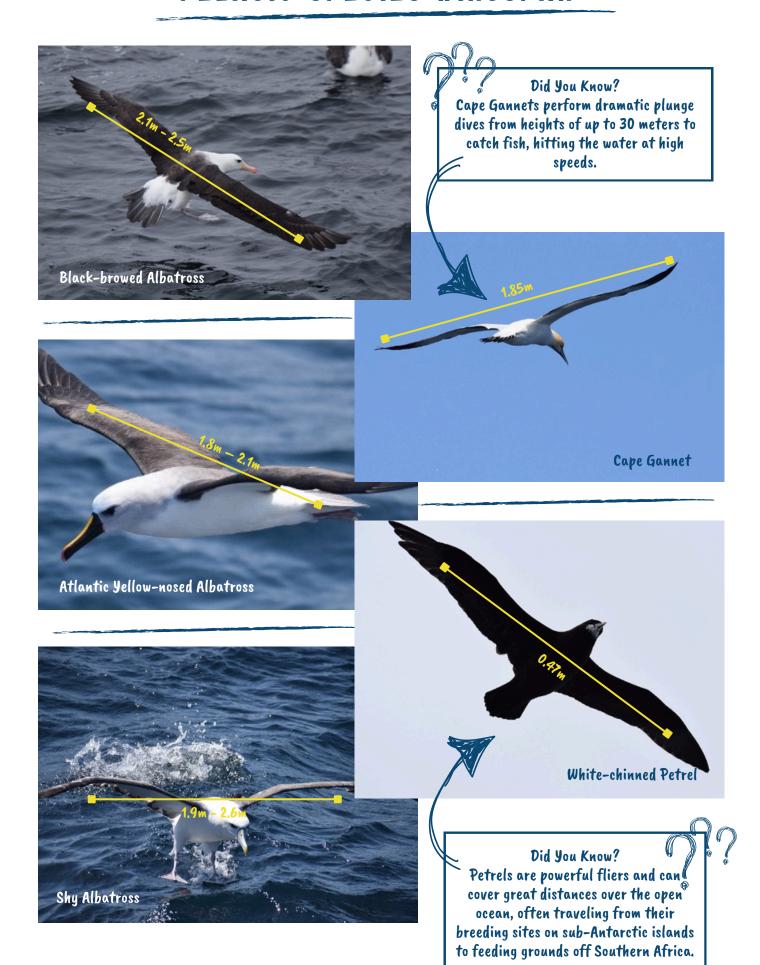


WHITE CHINNED PETREL

Wingspan	0.47m
Breeding sites	Sites: Antipodes, Auckland, Campbell, Prince Edward and Falkland Islands, South Georgia, Iles Crozet and the Kerguelen group. Season: September and May
Incubation and Fledging period	Incubation: 62 days Fledging: 106 days (Fledging refers to the stage in a young seabird's life when it develops sufficient feathers and muscle strength to leave the nest and make its first flight)
Conservation Status	Vulnerable (Vulnerable is a category on the International Union for Conservation of Nature (IUCN) Red List of Threatened Species. It is assigned to species that are facing a high risk of extinction in the wild)
Threats	Trawl and longline fisheries.



PELAGIC SPECIES WINGSPAN



African Penguins belong to the family called "Spheniscidae," which is the family of flightless birds known as penguins. African Penguins are native to the coastal regions of Southern Africa and they are the only penguin species to breed in Africa.

The African Penguin is classified as Critically Endangered on the IUCN Red List. Predation, along with overfishing, oil spills, climate change and habitat destruction are contributing to their population decline. Several measures are being taken to protect African Penguins in Namibia. This includes establishing marine protected areas around key breeding islands, providing safe nesting sites to encourage breeding and treating and rehabilitating oiled or injured penguins.

African Penguins are considered indicator species, meaning their health and population trends provide valuable information about the overall health of the marine environment. A decline in penguin populations often signals broader environmental issues.

PENGUIN DAY

World Penguin Day is celebrated every year on 25 April. This day aims to raise awareness about Penguins, so as to preserve their species and habitat for future generations.

African Penguin (Spheniscus demercus)

AFRICAN PENGUINS

Distribution	In Namibia, these penguins are primarily found on offshore islands along the coast, with the most significant breeding colonies in Namibia are located on Mercury Island, Ichaboe Island, and Halifax Island along the Namibian Islands Marine Protected Area (NIMPA).
Physical Characteristics	They are black on the back and white on their chest and this provides camouflage in the water. They also have webbed toes.
Diet	They feed mainly on small fish such as sardines and anchovies, as well as squid and crustaceans and are predated on by predators such as seals and sharks.
Behaviour	They are known for their distinctive braying call, which sounds like a donkey.
Breeding	African Penguins breed in colonies. They dig burrows or nest in guano (accumulated poop of seabirds) to protect their eggs and chicks from the harsh sun and predators. The breeding season can vary but typically peaks between March and May in Namibia.



International SEAL DAY

It takes place on March 22.
This day is set to raise
awareness about seal
conservation around the world.
The day highlights how their
health can indicate the overall
health of our oceans.

Our Cape Fur Seals belong to a group called Pinnipeds and they are endemic to Southern Africa. We have roughly 40 Cape Fur Seal breeding colonies along the Southern African coast. Most of them are based on islands, only 8 of them are on the mainland.

They are warm-blooded mammals that can regulate their body temperatures in the cold Benguela Current which runs along the Skeleton Coast. Unlike other marine mammals the seal's nostrils are closed and their large eyes can see both forward and to the sides. This is a distinct advantage when it come to hunting and being hunted.

Seals are apex predators, meaning they are on top of the food chain and they keep population dynamics balanced between large and small fish. A healthy seal colony is an indicator of a healthy marine ecosystem with sufficient fish stocks and normal oceanographic conditions. Although they face threats from overfishing, entanglement in fishing gear, habitat disturbance, climate change and pollution, Cape Fur Seals are currently NOT endangered in Namibia.

CAPE FUR SEALS

Distribution	They can be found between Southern Angola and South Africa's Algoa Bay, including the complete coastal area of Namibia.
Physical Characteristics	Adults have brown fur and pups are born with a black coat, which they shed for a grey fur as they grow. And they also have external ears (ear flaps).
Diet	A fully grown male can eat up to 10% of his body weight per day while out at sea. Cape Fur Seals also predate onoctopus, crustaceans and even the odd seabird, but horse mackerel, sardines, anchovy, hake, lantern fish or gobi are their first choice.
Behaviour	Cape Fur Seals are semi-aquatic. They mate, rest and breed on land, but they hunt at sea. They have two sleeping patterns, one for when they are on land and one for in the water. On land they sleep similar to land mammals, occasionally opening their eyes to look for predators. In the ocean they rest different parts of their brain at different times and stay afloat by paddling with one fore flipper and briefly opening one eye to watch for predators.
Reproduction	A Cape Fur Seal gives live birth to a single pup between late November and December. She will nurse her baby until she has the next one, exactly one year later. Pelican Point and Cape Cross are both breeding colonies and we often see bulls fighting over females.



MARINE QUIZ (TRUE/FALSE)

- 1. Heaviside's dolphins have a blunt head and triangular dorsal fin.
- 2. Southern right whales are known for complex songs.
- 3. Pelagic seabirds live mostly near shorelines.
- 4. Black-browed Albatross wingspan is 2.1 to 2.5 meters.
- 5. Cape Gannets breed only on the mainland.
- 6. Humpback whales have large pectoral fins and knobby heads.
- 7. Toothed whales feed on krill and plankton.

