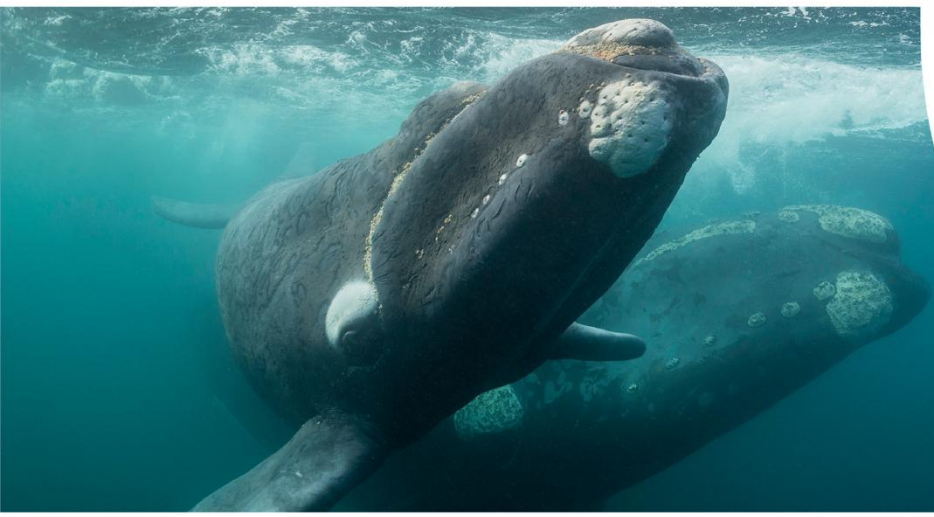
WILDTRUST™



WHALES

SESSION PACK

SESSION PACK CONTENTS PAGE - WHALES

MATERIALS REQUIRED FOR SESSION

- Poster Paper
- Colouring pens / crayons / paints
- Copies of whale info pages
- Screening device

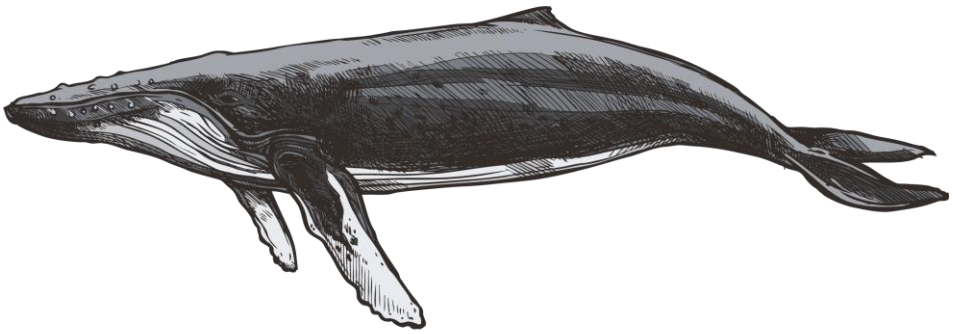
INFORMATION PAGES: WHALES

DESCRIPTION:

“Whales are nature in its grandest form - massive, beautiful, powerful, and mysterious. They are ancient, like living dinosaurs, managing so far to survive every planetary disaster and human-caused threat, from hunting to habitat loss to pollution. But they are gentle, inquisitive, intuitive, forgiving, and sentient.” – Joel Reynolds, Nature Resources Defense Council

WHALES SOUTH AFRICA

HUMPBACK WHALES



DISTRIBUTION:

- Migratory species found in all the major oceans worldwide.
- Spotted in KZN waters during:
- June/July traveling northwards to breed and calve (have their babies).
- October/November traveling southwards to their Antarctic feeding grounds, some females with their newborn calves.

DESCRIPTION AND KEY IDENTIFICATION:

- An adult humpback whale can be up to 15m in length (females are larger than males) and weigh up to 40 tonnes.
- The name comes from the shape of the hump close to the dorsal fin and the way it arches its back before it dives
- An easy whale to identify with a few key distinguishing features identifying the species and individual whales.

WHAT TO LOOK OUT FOR:

- Wide-based stubby dorsal fin on a hump on the back of the whale.
- Tail fluke - each individual has its unique pigmentation pattern on the underside of the tail (much like a fingerprint).
- Serrated tail edge - unique to individual whales (much like a fingerprint).
- Very long flippers - roughly one-third of its body's length. Dark upper side and varying white undersides, with 4-6 bumps on the leading edge.
- Single bushy blow - 3-8m tall.
- Black lumps on top of the head and lower jaw– these are hair follicles called tubercles.

- Throat - often white in colour (but not always) with distinct grooves.
- Belly – may be varying degrees of white.

DIET:

- Humpback whales are baleen whales, which means they have long fronds of baleen or fibrous material hanging from their upper jaws and they do not have teeth. Baleen is used to sieve their prey/ food from the water.
- Diet consists of mainly krill (Southern Hemisphere) and small pelagic fish (Northern Hemisphere).
- They do not seem to feed when they are migrating between feeding and breeding grounds.
- Bubble netting -humpback whales use a unique cooperative feeding technique in certain areas. The whales blow bubbles while circling below the fish or krill prey, as the bubbles rise to the surface, they create a cylinder of bubbles that acts as a net encircling and confusing the prey. The whale then swims up with its mouth wide open and engulfs the prey caught within the bubble net.

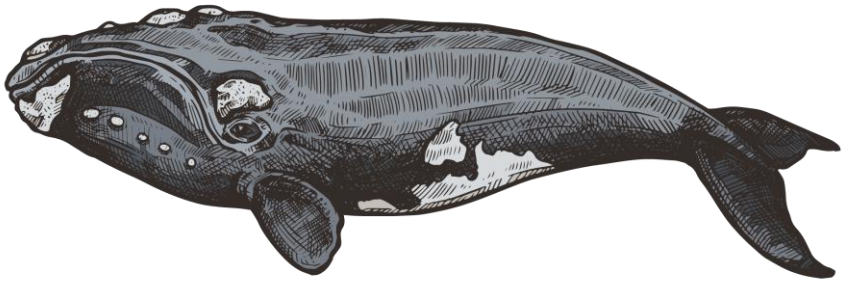
BEHAVIOUR:

- Usually seen traveling past the East Coast in groups of between 1 and 4 animals.
- Much bigger groups can be observed at their breeding grounds and feeding grounds.
- Humpbacks are inquisitive and sometimes approach boats.
- Humpback whales can often be seen lying on their side or back with either one or both their flippers or their tails in the air – exposing these areas, with their thinner layer of blubber helps cool the whale down in warmer waters.
- Diving - humpback whales can remain submerged for up to 45 minutes (in extreme cases); however, the average dive is usually 3 to 9 minutes.
- Average swimming speed is 5-7 km per hour.

CONSERVATION STATUS:

Least Concern - according to the IUCN’s Red List. Humpback whale stocks are recovering but entanglement in fishing gear and shark nets, collisions with ships, and noise pollution continue to impact the whale populations.

SOUTHERN RIGHT WHALE:



DISTRIBUTION:

- Migratory species
- Summer feeding grounds are in Sub-Antarctic waters, moving north to warmer waters in winter to breed.
- Observed mainly in the Cape region in South Africa but some have been known to migrate as far north as KZN.
- Look out for them in June/July and October/November.

DESCRIPTION AND KEY IDENTIFICATION:

- A large round body is usually black in colour although some may appear mottled.
- Characteristically massive head with arched upper jaw and big curving lower jaw.
- Lacks a dorsal fin – a key identifying feature.
- Callosities (patches of thick skin) on their heads are another distinguishing feature of Southern Right whales. These patches of thickened skin appear yellow/white in colour from whale lice which colonize the callosities. The size and pattern of these callosities are unique to individuals and are used to identify them.
- Adult whales reach up to 15m in length (females larger than males) and can weigh 40-50 tons.

WHAT TO LOOK OUT FOR:

- Wide V-shaped blow reaching up to 4m (this can appear as one jet from the side or in the wind).
- No dorsal fin.
- Triangular tail fluke - with a distinctive central notch and smooth trailing edges, black in colour both sides.
- Large, broad, paddle-shaped flippers, black on both sides, often seen above the surface.
- Callosities on head.

- Breaching – often breach, normally repeatedly up to 10 times. They lift their whole bodies out of the water and generate an impressive splash on re-entry, a great spotting sign.

DIET:

- Mainly copepods (small crustacean, look similar to crabs or prawns).
- Skim feeders sieving their prey through their long baleen.
- They feed mainly at their feeding grounds in the Sub-Antarctic.

BEHAVIOUR:

- Slow, clumsy-looking swimmers moving at a modest rate of about 0.5 to 4 km per hour, (top speed of 17 km per hour)
- Maximum diving depth is an impressive 300m and can dive for up to 30 minutes, often raise their tail flukes in preparation for longer dives.
- Surprisingly aerobatic and can be witnessed breaching frequently.
- Can also often be seen sailing with their tail fluke raised above the water.
- Group sizes vary from 1-10.
- Average swimming speed is 5-7 km per hour.

CONSERVATION STATUS:

Least Concern - according to the IUCN's Red List. Southern right whales face a variety of threats including entanglement in fishing gear, vessel strikes, and disturbance from human activities like whale watching and coastal development.

DWARF MINKE WHALE:

DISTRIBUTION:

- Found in the Southern Hemisphere in tropical to temperate waters .
- Spotted on the East Coast all year around, but present in South African water between May – August.
- Smaller than the other baleen whales seen on our coast, reaching a maximum of 10m in length when fully grown (females bigger than males) and weighing only about 6 tonnes.
- A V-shaped pointed head with one prominent ridge running down the centre from the blowhole to the end of the snout.
- The white chevron on their short flippers that extend to their bodies distinguishes them from other Minke whales.

WHAT TO LOOK OUT FOR:

- One longitudinal ridge running down the centre of its pointy head.
- Prominent white throat grooves.
- Short flipper with a distinct dark trailing edge and a white marking that extends onto the body (seldom seen above water).
- Small, often faint blow that may spout up to 3m - it may be audible on a calm day.
- Semi-circular, erect dorsal fin situated about two-thirds down the back.
- The tail fluke is dark above and pale grey-white below with a distinctive central notch and slightly concave trailing edge.
- Breaching - Minke whales do not breach as frequently as some of the other larger whales.
- They tend to leave the water dorsal side up and re-enter the water without twisting or turning, landing on their stomachs with a large splash.
- They may choose to arch their backs and re-enter headfirst much like a dolphin dives.
- Breaches are often repeated 2-3 times with most of the body leaving the water on the first breach enough to witness the dorsal fin usually.

DIET:

- Krill and schooling fish – Minkes are lunge feeders, taking a big gulp of water and filtering out their prey through their baleen

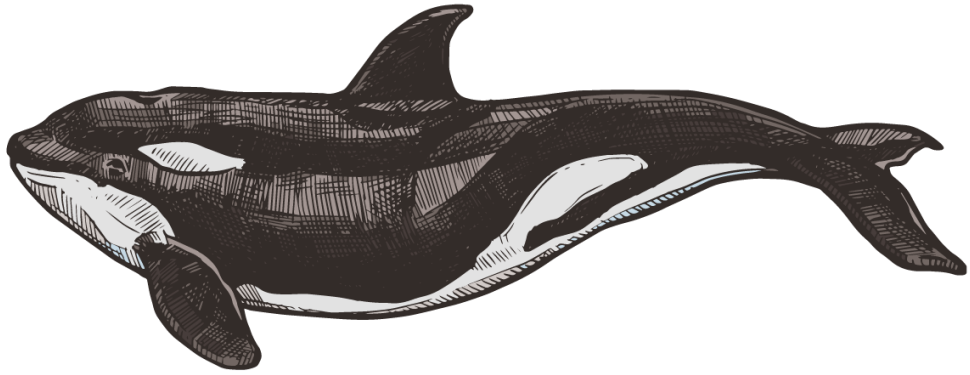
BEHAVIOUR:

- Inquisitive, often approaching boats and swimming alongside them for some distance.
- They can occasionally be spotted breaching and spy hopping.
- Relatively fast swimming
- The diving duration is on average 3-8 minutes.
- Group sizes vary between 1 and 15.
- Can sometimes be spotted feeding at the surface beneath a flock of feeding seabirds.

CONSERVATION STATUS:

Least Concern - according to the IUCN's Red List. Dwarf Minke whales face a variety of threats from human activities such as by-catch in fishing gear, entanglement in litter and consumption of litter.

KILLER WHALES:



DISTRIBUTION:

- Found in most oceans around the world.
- Occur in coastal and offshore waters in tropical and polar seas.
- In southern Africa they can be spotted all around the coastline mainly in deep water fishing grounds but can be seen closer inshore as well.

DESCRIPTION AND KEY IDENTIFICATION:

- The largest member of the dolphin family
- Fairly easy to identify with a robust body, cone-shaped head, broad and well-rounded flippers and large, tall dorsal fin.
- As well the characteristic and contrasting black and white coloration: they have an oval white patch behind each eye, a grey saddle patch behind the dorsal fin and white lower jaw and belly, the upper parts and sides are black in colour.
- Adult whales can reach between 7-9m in length (males larger than females) and weigh approximately 8 tonnes.

WHAT TO LOOK OUT FOR:

- Rounded head ending with a short beak containing teeth, white patch just above and behind the eye.
- Tall erect dorsal fin reaching up to 2m in height in adult males.
- A distinct notch in tail fluke, which has a black upper side and white underside.
- Large oval-shaped flippers which are black on both sides.
- Breaching – adults and juveniles frequently breach, often clearing the water and landing with a great splash on their back, sides or stomach.
- Spy hopping – when a killer whale spy hops, most of the flippers are above the surface.

DIET:

- As one of the top predators in the ocean food chain, killer whales have a varied diet.
- Prey includes anything from fish, rays, sharks, squid, sea birds, seals and turtles to sea otters and other dolphins.
- There is only one recorded attack on humans by a killer whale in the wild, in 1972. The attack was no more than a nibble on a surfer.

BEHAVIOUR:

- Pod sizes vary between 2-10 animals, which sometimes come together forming super pods
- Killer whales like all other dolphins use whistles for communication and echolocation clicks for navigation and to locate prey.
- They can reach speeds of up to 30 km per hour and dive for periods of up to 7 minutes.
- They can be observed breaching, spy hopping, lob-tailing and flipper slapping.

CONSERVATION STATUS:

Data Deficient but Protected in many countries – according to The International Union for Conservation of Nature (IUCN) Red list. This could be due to lack of information or certainty about their status.

WHALE SESSION Q & A'S

Some commonly asked questions and answers:

What is the difference between whales and dolphins?

Whales and dolphins are mammals that belong to the order Cetacea, which also includes porpoises. Whales and dolphins are physiologically different, with whales often being larger than dolphins and more comfortable in a wider range of water temperatures. Whales and dolphins are generally thought to be equally intelligent according to recent scientific studies. The main difference between a dolphin and a porpoise are the teeth, Porpoises have spade teeth and do not occur in South Africa, while dolphins have cone shaped teeth.

Size: Whales tend to be between 3 – 33 meters long, and dolphins are between 1-10 meters long. Some classification systems consider anything over 9 feet (2.7 m) as a whale, which can lead to confusion. This is why there are six species of "whales" that are dolphins, genetically.
Blowholes: While all dolphins have one blowhole, baleen whales — those that feed on plankton and small fish or crustaceans — have two blowholes. All toothed whales have only one blowhole.

Mode of feeding: Whales are divided into two categories, based on their teeth. One group is known as baleen whales; this is the largest suborder of whales and includes the blue whale. Baleen whales' teeth are of a fringed structure and grow from the upper jaw. These whales use the fringed structure of their teeth to filter large amounts of water and trap plankton and small creatures.

The other category for whales is toothed, which includes dolphins and sperm whales, amongst others. Toothed whales are carnivorous, meaning they feed on fish, squids, marine mammals, and even other whales.

Dolphin teeth are conical and tend to be quite sharp. They are used for grabbing and dragging prey into the mouth, where it is then swallowed whole. Most dolphins have between 58 and 94 teeth. These teeth are replaced regularly, which is a trait they share with toothed whales.

1. **What is the difference between dolphins and porpoises?**
   Dolphins have longer noses, bigger mouths, more curved dorsal fins, and longer, leaner bodies than porpoises.

People use the terms dolphins, porpoises, and whales to describe marine mammals belonging to the order Cetacea (from the Greek word ketos, *"large sea creature"*) and often use them interchangeably. The orca, or killer whale, for example, is the largest member of the dolphin family.

Dolphins are more prevalent than porpoises, there are about 32 dolphin species (plus five closely related species of river dolphin) and only six porpoise species. There are no porpoises in South Africa.

So, what is the difference? It essentially comes down to their faces, their fins, and their figures. Dolphins tend to have prominent, elongated "beaks" and cone-shaped teeth, while porpoises have smaller mouths and spade-shaped teeth. The dolphin's hooked or curved dorsal fin also differs from the porpoise's triangular dorsal fin. Generally speaking, dolphin bodies are leaner, and porpoises are portly.

Dolphins are also more talkative than porpoises. Dolphins make whistling sounds through their blowholes to communicate with one another underwater. Scientists are pretty sure that porpoises do not do this, and some think this may be due to structural differences in the porpoise's blowhole.

Dolphins and porpoises have many similarities, one of which is their extreme intelligence. Both have large, complex brains and a structure in their foreheads, called the melon, with which they generate sonar (sound waves) to navigate their underwater world.

2. **Is a whale shark a whale?**

Despite the resemblance in its name the whale shark isn't a whale. It's also not part of the marine mammal family. The whale shark is the world's largest fish, or shark for that matter. The name whale shark comes from the fact that this species of shark can grow to be as large as some whale species. It also happens to be a filter feeder, just like baleen whales. When fully grown the whale shark can grow to lengths of 12m.

Unlike whales the whale shark breathes through gills which allow it to extract oxygen from the water. Whales on the other hand must come to the surface to breathe otherwise they would drown. The whale shark has five large pairs of gills to pull oxygen out of the water.

Whale sharks can be found traveling throughout all the world's warm and tropical oceans.

3. **What is an Orca?**

   The scientific name of the killer whale is Orcinus orca, which is the source of their other common name, orca. The name "killer whale" causes many misconceptions about this noble beast. First, killer whales are not whales at all. They are, in fact, dolphins (the largest dolphins). Second, they are not particularly violent creatures. They are hunters, and prey on a variety of creatures, such as squid, sharks, otters, sea lions, penguins, birds, octopi, dolphins, and salmon.

   Do people still hunt whales?

   Despite the 1986 International Whaling Commission ban on commercial whaling, some countries refuse to end their whaling operations.

   Japan: Almost immediately after the 1986 whaling ban came into effect, Japan launched its scientific whaling programme, widely recognized as a cover for its ongoing commercial whaling operation. Meat from these whales — supposedly killed for science — is then sold in food markets or given away free or at low costs to schools and hospitals in marketing drives to encourage the consumption of whale meat. The Japanese whaling fleet departs twice a year. In the North Pacific, Japanese whalers can kill up to 200 minke whales, 50 Bryde's, 100 sei whales, and 10 sperm whales under the guise of scientific research. Vessels had been killing up to 935 minke whales and 50 fin whales each year in the Southern Ocean Sanctuary before the International Court of Justice ruled that this was illegal.

   Norway: Norway only respected the IWC's whaling ban until 1993. Using a loophole in the International Convention for the Regulation of Whaling, Norway objected to the whaling moratorium, and resumed hunting for minke whales. Norway sets its quota for the number of whales its whalers are permitted to kill for commercial reasons. This number has gone up and up, from being allowed to kill 671 minke whales in 2002 to more than 1,000 today. However, in recent years, less than half of this self-allocated catch limit has been taken. Norway is now hunting a higher proportion of breeding females which could put the long-term survival of minke whales in the North Atlantic in severe danger.

   Iceland: Like Japan, Iceland initially conducted a 'scientific' whaling programme. Then, in 1992, it withdrew from the IWC. When Iceland re-joined in 2004, it included a clause in its re-entry that spoke out in objection to the whaling moratorium. In 2006, Iceland resumed

commercial whaling, targeting minke and fin whales. In 2010 alone, Icelandic whalers killed 148 endangered fin whales and 60 minke whales.

Both Iceland and Norway claim whaling as a traditional practice.
IFAW's "Meet Us Don't Eat Us!" campaign is currently trying to educate tourists about whales, hunting, and whale meat.

6. What are some of the present-day threats whales face?
Fishing and shark net entanglement, whaling, climate change, pollution, habitat loss, disturbance through sonar and boats, ship strikes, seismic surveys and offshore mining or exploration.

SESSION PLAN: WHALES

SESSION OBJECTIVES:

Learners will discover and learn about some of the different whale species observed in South African waters and be able to identify some of their identifying traits.

INTRODUCTION ACTIVITY:

- Ask the learners some introductory questions: Do they know what a whale is?
- Who has seen a whale?
- Who can name a type of whale?
- Does anyone know the difference between a whale and a dolphin?
- What is a whale shark?

MAIN ACTIVITY:

- Show the learners images of the four different whale species most common in South African waters (Dwarf Minkie Whale. Killer Whale, Humpback Whale, Southern Right Whale) and see if they can guess which one is which. *(see PRESENTATION provided below).*
- Divide the learners into four groups and have each group design an information poster that describes one of the four whales for display in the classroom. Print a set of the whale information sheets so help guide the learners with their posters. Have each group present their poster to the class

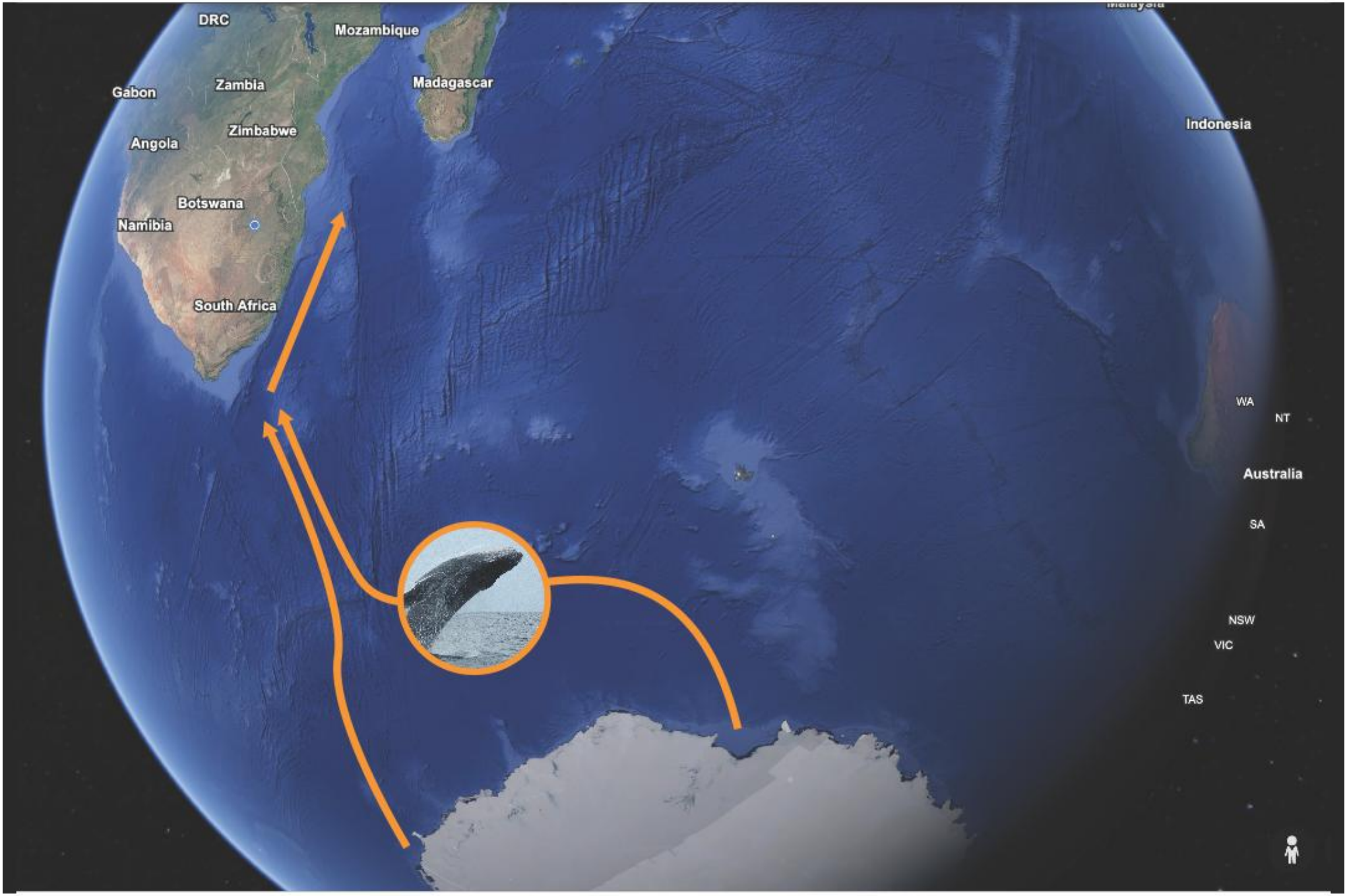
CLOSING EXERCISE:

- There are several whale behaviours one can observe – read these out to the learners and have them act like a whale performing each of these behaviours *(see ACTIVITY provided below for whale behaviour descriptions).*

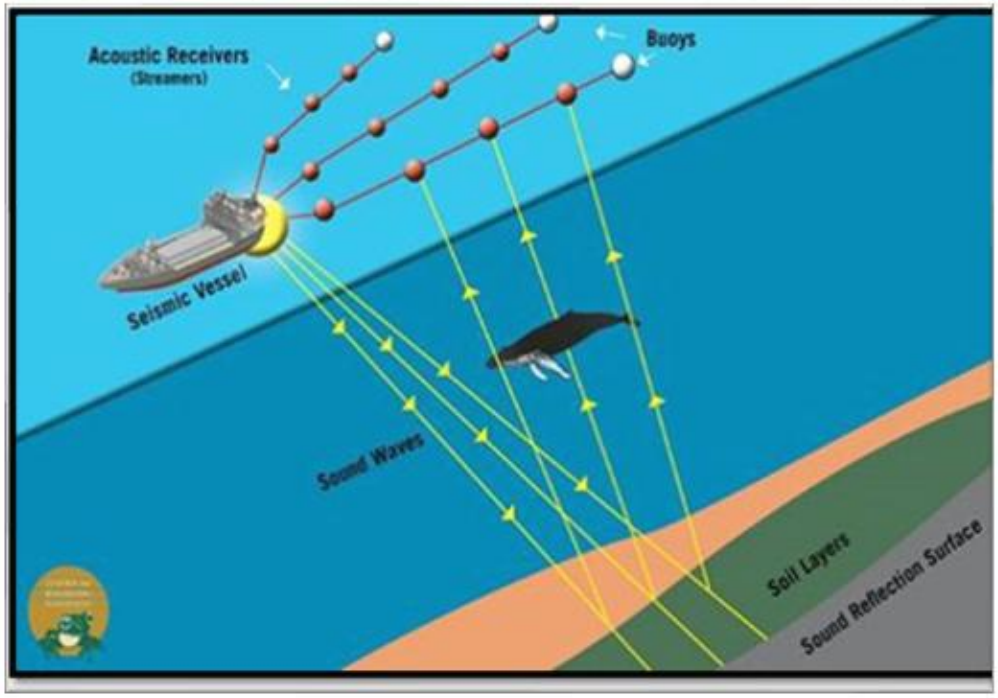
FOLLOW UP SUGGESTIONS:

Watch *OUR OCEANS: Return of the Giants* documentary https://tinyurl.com/4d36j6wv

PRESENTATION: WHALE IMAGES


DRC
Mozambique
Gabon
Zambia
Madagascar
Angola
Zimbabwe
Botswana
Namibia
South Africa
Indonesia
WA
NT
Australia
SA
NSW
VIC
TAS

Continuing Threats



ACTIVITY SHEET: WHALE BEHAVIOURS

WHALE BLOW:

When a whale exhales, its blow creates a puff of spray, which varies amongst species. The blow is often the first visible cue that whales are present so look out for it. It is also often surprisingly loud.

BREACHING:

Breaching is when a whale propels its body out the water; the re-entry causes a spectacular splash. Breaching can occur repeatedly. It is a clear indication whales are present and tends to occur more frequently in windy sea conditions. The reason for breaching is not fully understood, suggestions include communication, mating, competition (competition between males for access to receptive females on the breeding grounds can be fierce), removal of dead skin, and play

FLUKING:

Just before a whale dives, it raises its tail. When a whale dives it rolls forward and the tail lifts briefly before the whale slips below the surface.

LOB-TAILING AND FLIPPER SLAPPING:

Whales smack the water surface with their tails, as well as with their flippers. These behaviours are thought to be associated with mating and communication.

SAILING:

Sailing occurs when the whale holds itself vertically in the water with its tail in the air (and looks like it is ‘standing’ on its head). This behaviour is not understood; however it is suggested that sailing might assist whales with thermoregulation (helping the whale to cool down).

SPYHOPPING:

Spyhopping occurs when the whale is ‘standing’ vertically in the water with its head above the water surface. It is thought that this behaviour helps them to view their surroundings and orientate themselves.

ANNEXURE 1

Associated session plan breakdown for relevant reading and colouring in pages for “Harry the hammerhead” volume one – uThukela & iSimangaliso communities

Session Title	**Harry the Hammerhead Shark Spreads the good news (volume 1) reading page numbers**	**Colouring in page numbers**
Intro to oceans session (pre survey)		None
Harry the Hammerhead session	Read pages 1-32	None
What makes iSimangaliso special session	Read pages 1-5	1, 2 & 3
Coelacanth session	Read pages 6-7	4
Turtle hatchling session	Read pages 8-11	5 & 6
Coral Reefs session	Read pages 12-15	7 & 8
Marine food webs session	Read pages 16-23	9, 10, 1 & 12
Shark session	Read pages 24-27	13 & 14
Whale session	**Read pages 28-29**	**15**
Benefits of MPA's session (post survey)	Read pages 30-32	16

ANNEXURE 2

Session plan - Curriculum and Assessment Policy Statement alignment

WILDTRUST Session plan	**Section**	**Grade**	**Subject**	**Strand**	**Topic**	**Content & Concepts**
Whale session	Senior Phase	Grade 7	Natural Science & Technology	Live & living	Variations exist within species	Variations exist within species