What is the man without the beasts? If all the beasts were gone, man would die from a great loneliness of the spirit. For whatever happens to the beasts, soon happens to man.

Attributed to Chief Seattle, 1784–1866 Chief of the Duwamish and Suquamish tribes, USA

What do you know about ENDANGERED SPECIES?

In pairs, decide whether these statements are TRUE or FALSE: Briefly explain your answers, and compare them with others in the class.

1. Grey Nurse sharks spew out their stomachs.
2. Snow leopards prey on blue sheep.
3. Grey Nurse sharks are near the bottom of the food chain.
4. African elephants can eat the weight of three grown men each day.
There are endangered species all over the world. 1 Cheetah; 2 Grey Wolf; 3 Gorilla; 4 Orangutan; 5 Bird of Paradise; 6 Giant Panda; 7 Przewalski’s Horse; 8 Tiger; 9 North American Bison; 10 Jaguar; 11 Macaw; 12 African Elephant; 13 Aye Aye; 14 Greater Bilby; 15 Helmeted Honeyeater; 16 Pygmy Possum; 17 Whales; 18 Giant Brazilian Otter. (Source: Heinemann Atlas Third Edition.)
Dirty old bags

[Plastic bags] are lethal to marine life [as they] kill livestock and trap birds. According to Planet Ark, an international environmental group that has taken a leading role in the push to reduce plastic bag use, at least 100,000 birds, whales, seals and turtles are killed by plastic bags each year worldwide.

Plastic bags cannot be digested or passed by an animal — they stay in the gut, causing pain and certain death. When dead animals decay, the bags are freed and often eaten again by other animals for many years to come …

Many countries around the world have implemented measures to curb the use of plastic bags. Ireland … has placed a levy equivalent to 27 cents [on each bag, reducing] single-use plastic bag consumption by 90–95 per cent over one year …

Sachs Das, the Age (29 June 2004).
It is 8 a.m. The chilly wind sprays icy sea-water into my face as we bounce across a slight swell towards Magic Point at South Maroubra. I had wanted to do a night dive because that's when the Grey Nurse feeds, and it's a lot more exciting, especially with an underwater scooter and a spotlight. But Jane, the dive instructor, was horrified: 'No! We're not allowed to dive there at night, we can't use scooters, we can't block the entrance to their caves, we can't touch them or feed them, we can't even interrupt their swimming patterns. We can only go down there to watch!'

Oh well, it's probably too scary at night anyway.

It's hard to believe we are less than twenty kilometres from central Sydney and yet so close to a colony of Grey Nurse sharks. Now that we are in the boat with open ocean in front of us, I'm glad she set the rules — rules to protect the sharks, not me!

'Three hundred and counting down,' Jane shouts in my ear as we speed across the waves. I must have looked puzzled because she adds, "There are only about three hundred Grey Nurses left, and we're going to see nine of them.'

I have been scuba diving before but this is going to be special. I'm itching to get into the water. We gear up and roll backwards into the cool blue sea. Visibility is great. Swimming down the anchor line, we reach the ocean floor about fifteen metres below the surface. It's only a short swim to a wide cave about two metres high: the home to a colony of Grey Nurse sharks. Grey Nurses love caves and deep trenches; they've been known to go down as deep as two hundred metres looking for food. They're at the top of the food chain, so who knows what will happen if they become extinct.

Several dark, silent figures — the largest almost four metres long, the smallest one metre — swim slowly round and round, patrolling the entrance to their cave.

These sharks are beautifully streamlined, grey to bronze on top with white underbellies. The young ones have reddish spots on the lower part of their back but these fade as they get older. Row after row of backward-pointing, needle-like teeth fill their jaws. They look ferocious, but I've been promised they're not.

'They'll leave you alone as long as you don't provoke them or get in the way when they're feeding,' Jane had said.
Survival of the fittest
The female Grey Nurse has a uterus on each side of her body. Each uterus contains several babies but usually only one from each uterus emerges alive. The pups are about one metre long at birth.

Hooked!
If a Grey Nurse is hooked and then brought to the surface too quickly, the air in its stomach will expand because of the lower pressure. This causes the gut wall to rupture, which, if left untreated, will cause the shark to die a painful death within a week or so, due to peritonitis (inflammation of the peritoneum).

The Grey Nurse shark

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activities

1. From the story and photos in this unit, draw and colour a Grey Nurse shark, labelling key features.
2. Presenting geographical information using a diagram
   Look at Figure 2. In pairs, produce a food chain with sketches and labels. Illustrate and explain what might happen to the food chain if the Grey Nurse became extinct.
3. Read Survival of the fittest and suggest how this reproductive method aids in the survival of the species.
4. The scientific name of the shark commonly known as the Grey Nurse is Carcharias taurus; the family name is Odontosidae.
   a. Using a dictionary or the Internet, find out what these Latin words mean.
   b. How do these relate to the description of the Grey Nurse?
5. Read Hooked! Find out the meaning of ‘peritonitis’ and research its effects.
1. Write down statements a to g. Write 'true' next to any statements you feel are correct and 'false' next to those you feel are incorrect. Justify your choices. Two examples have been provided for you.

   a. Humans are one of the many threats to endangered species. True. Pollution, poaching, farming, overfishing and habitat destruction all contribute to the decline of species’ numbers.

   b. Because sharks are the perfect killing machine the Grey Nurse Shark will never die out. False. The Grey Nurse does not reproduce quickly, is hunted by humans, its natural habitat is being destroyed and its numbers are declining already.

   c. Snow leopards are only endangered in Nepal. True.

   d. Vulnerable species are not as threatened as critically endangered species. True.

   e. Female African elephants are pregnant for about two years. True.

   f. Grey Nurse sharks are at the top of their food chain. True.

   g. Mount Kilimanjaro is in South Africa. False. Mount Kilimanjaro is in Tanzania.

   h. Snow leopards sold on the black market bring in very little money. True.

   i. Farmers pose very little threat to the African elephant. False. Farmers can be a significant threat to the African elephant.

2. Construct food chains that include the three endangered species, their predators and prey.

3. Imagine you are a worker for the WWF. List the five things that would be your priorities once you started work.

4. What value do conservation groups have in today’s society? Do you think that they and their aims and objectives are worthwhile or a waste of public resources and money?

5. Imagine you are living 100 years in the future. Create a written, oral or visual presentation to answer the following questions.

   a. Which endangered species might still and might not exist and why?

   b. You open up a time capsule from 2006, which gives details about what was being done to protect endangered species. List what you would find.

   c. Predict how you think future society might protect endangered species.

6. Design a poster showing why we should protect not just endangered species but all species.

7. A number of Australian species are on the Red List. Create a written, oral or visual presentation to outline the impact that the extinction of such animals as the koala, the northern hairy-nosed wombat, the wedge-tailed eagle or the Grey Nurse shark would have on Australia.
time to reflect

1. a Which part of this unit made you feel you would like to learn something about an endangered species?
   b We all learn in different ways. Which activity in this unit suited your learning style best? Which activity did you most enjoy?

2. List the things you would add or drop from this unit. Give reasons for your suggestions.

3. Suggest two other species not included in this unit that you would like to study. Give reasons.

4. Suggest an additional activity (draw something, investigate, hear a speaker, etc.) you would like to be included in a study of endangered species.

5. a Explain the value of doing fieldwork on endangered species.
   b What sort of fieldwork would you suggest? Explain.

6. What aspects of learning about endangered species are valuable to society in general?
alpine the mountain environment
bull a male elephant
carcass the body of a dead animal
cow a female elephant
critical habitat a habitat that is essential for the survival of a species
critically endangered facing an extremely high risk of extinction in the wild
data deficient (DD) inadequate data is available
domestication the adaptation of an animal for use by humans; taming
dry season the time of the year when there is little rain
electroreception the sense that allows sharks to detect very weak electrical currents
endangered facing a very high risk of extinction in the wild
exterminate to get rid of something by completely destroying it
extinct no longer existing
extinct in the wild only surviving in a cultured or captive environment
feral wild or untamed
food chain a chain of organisms indicating which living things are eaten by others
gestation the period of time needed to produce a living offspring
habitat the area and its surroundings in which a species lives
herd a large group of four-legged animals of a single species
Himalayas the mountain chain in south-central Asia (including Mount Everest and nine of the world’s ten-highest peaks) that extends for about 2414 km
Ibex a mountain sheep that lives in the Himalayas
Ivory hard whitish dentine (tooth material) of which animals’ tusks are made
national park an area of land set aside by a government for the conservation of natural features
near threatened likely to qualify for a category of endangerment in the near future
offspring a descendant of an animal or plant
peritonitis inflammation of the peritoneum, the membrane that lines the stomach walls
poaching illegal hunting or fishing
ranger a person who is employed to protect areas such as national parks
sanctuary a place which provides protection of wildlife
savannah an area characterised by grasslands and scattered trees, and having a wet season and a dry season
scavenger an animal that feeds on dead or decaying matter
species a class of organisms that are grouped because they have common attributes
steel tracer steel used for the first 2 metres of a fishing line, near the hook, to avoid having the rough skin of a shark break the line
strychnine a poison that affects the nervous system, and usually leads to a slow and painful death
trench a long, steep-sided valley on the ocean floor.
uterus the cavity in the bodies of some female animals in which offspring develop before birth
vulnerable facing high risk of extinction in the wild
whistleblower a person who informs authorities of an illegal activity