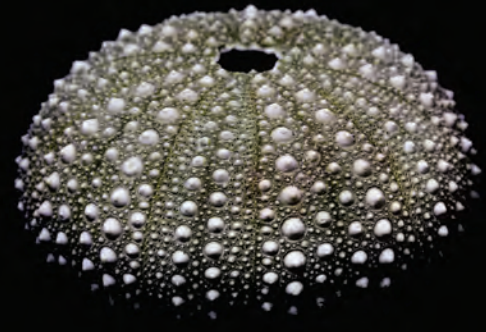
Kina | Sea urchin

Evechinus chloroticus

Outer shell & Aristotle's lantern mouthpiece



- Loves to eat seaweed
- Lives in fear of large snapper jaws!

Tāmaki Paenga Hira Auckland War Memorial Museum

Kina | Sea urchin

Evechinus chloroticus

Habitat
Rocky shore to 60m deep.

Diet
Nocturnal grazer that feeds on seaweed and algae. A grinding mill, called an Aristotle's lantern and made of five teeth, allows for chewing of tough plant material.

Predators
Snapper, crayfish and other large fish.

Human impact
Humans have been harvesting them for hundreds of years for food.

PROBLEM

Kina populations are increasing, this means they are going to eat lots of seaweed that young fish like to hide in. How do you think we are able to control this?

Pipi

Paphies australis

Shell

- Hides in the sand at the beach

Tāmaki Paenga Hira Auckland War Memorial Museum

Pipi

Paphies australis

Habitat
In the sand. May stick one side up out of sand.

Diet
Filter feeds: sucks water into its shell and filters out plankton to eat.

Predators
Fish, crustaceans, crabs, humans.

Human impact
Humans have been harvesting them for hundreds of years for food.

Info
Sometimes pipi bunch together into what is called a 'bed". Some pipi beds may have 1000-2000 individuals per square meter!

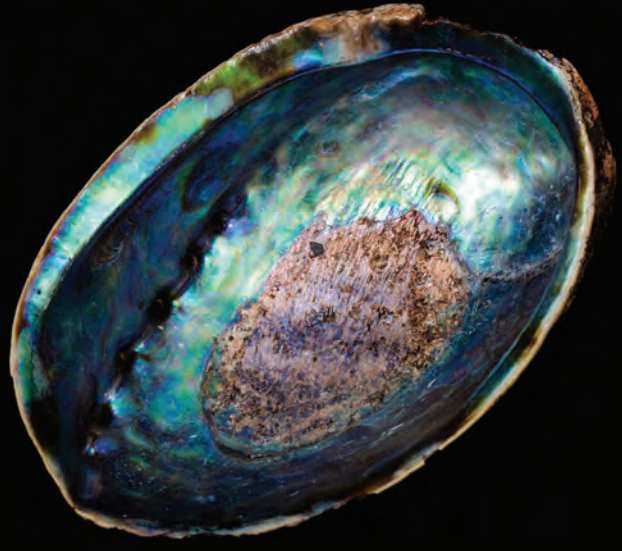
QUESTION

The daily limit for pipi collection is 150 per day, although there is no size limit. It is recommended only large individuals be collected, why do you think that is?

Pāua | Abalone

Haliotis iris

Shell



- Rocky on the outside, sparkly on the inside

Tāmaki Paenga Hira Auckland War Memorial Museum

Pāua | Abalone

Haliotis iris

Habitat
Lower rocky shore and found under ledges and boulders.

Diet
Grazes on seaweed and algae.

Predators
Crabs, octopuses, sea stars and fish.

Human impact
Humans have been harvesting pāua for hundreds of years as a food source. Their shells are also used as jewellery and decorations.

Info
Pāua use a radula, a ribbon-like structure studded with hundreds of tiny, hard, sharp teeth, to eat tough seaweed and algae. It has been described as something between a cat's tongue and a chainsaw.

DID YOU KNOW?

Many Māori carvings have pāua in eyes which gives them a lifelike appearance. People sleeping underneath these carvings in a whare sometimes feel like they're being looked over as they sleep at night.

Kāunga | Hermit crab

Paguridae spp.

Exoskeletons

- Living in the rock pools, I'll eat anything!

Tāmaki Paenga Hira Auckland War Memorial Museum

Kāunga | Hermit crab

Paguridae spp.

Habitat
Live in empty shells in rock pools.

Diet
They scavenge, hunt and filter feed.
They're not fussy!

Predators
Sharks, fish, squid, octopus.

Human impact
Humans like to collect shells which hermit crabs need to live in. Coastal pollution is so bad in some areas that populations are dying out. Some hermit crabs resort to living in plastic lids instead of shells.

DID YOU KNOW?

When hermit crabs get bigger, they need to change shells. Some species line up in size order with the largest crab at the front. As the large crab inspects and moves into its new shell, the second crab in line will take the larger crab's old shell. This continues down the line.

Pūngorungoru | Finger sponge

Raspailia spp.

Whole dried specimen

- The original kitchen sponge!

Tāmaki Paenga Hira Auckland War Memorial Museum

Pūngorungoru | Finger sponge

Raspailia spp.

Habitat
Found in open rock reef flats.

Diet
Filters food from the seawater that flows through its pores and channels.

Predators
Sea slugs and turtles. Some sponges contain toxins and glass-like spicules to stop animals eating them.

Human impact
Sea sponges are better at keeping water in than the sponges in your kitchen. They are the original dishwashing tool!

DID YOU KNOW?

Sponges are not plants; they are classified as an animal without a brain or nervous system

QUESTION

The holes and spaces inside a sponge can be protective spaces for smaller animals. Are there other species in the kete that can do this as well?

Papatua | Chiton

Syphorochiton spp.

Shell

- Like little shields on rocks!

Tāmaki Paenga Hira Auckland War Memorial Museum

Papatua | Chiton

Syphorochiton spp.

Habitat
Common under stones in the rocky shore.

Diet
Grazes on algae that grow on rocks.

Predators
Sea stars, crabs, fish and sometimes seagulls.

Human impact
Climate change creates more storms than usual. Extra wave action may impact the way chitons cling onto rocks.

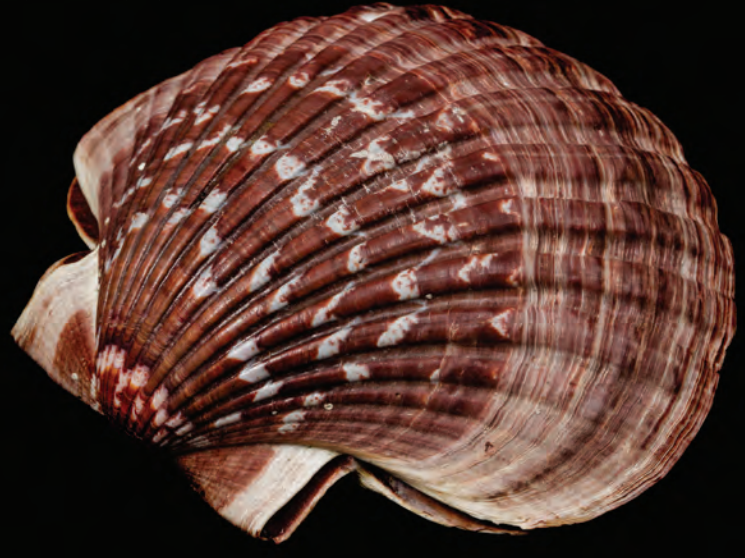
DID YOU KNOW?

Even without eyes, chitons manage to make their way back to their 'home' spot after grazing at night. Scientists don't exactly know how they do this, but recent experiments suggest they respond to magnetism because their metallic teeth leave traces of iron in rocks, therefore they have a trail to follow.

Tipa | Scallop

Pecten novaezelandiae

Shell



- Tipa flap their shells together to swim away from predators

Tāmaki Paenga Hira Auckland War Memorial Museum

Tipa | Scallop

Pecten novaezelandiae

Habitat
Muddy and sandy shores.

Diet
Filter feeds on plankton that gets trapped by their sticky gills.

Predators
Sea stars, crayfish, crabs and fishes.

Human impact
A delicacy in fine dining meals.

Info
Scallops are both male and female. They have two sets of reproductive organs: the white part is male and the orange is female.

QUESTION

Most scallops are caught by a fishing technique called dredging which scoops out massive chunks of sea floor. What effect do you think this might have on underwater environments?

Tuatua

Paphies subtriangulata

Shell

- Catch me if you can...I'd rather you didn't

Tāmaki Paenga Hira Auckland War Memorial Museum

Tuatua

Paphies subtriangulata

Habitat
Buried in beaches with fine sand.

Diet
Filters seawater through gills to pick up food.

Predators
Sea stars, snapper and some sea gulls.

Human impact
Tuatua are commonly harvested for kaimoana –
but be aware of the limits in your area for collecting them.

DID YOU KNOW?

To escape capture, tuatua can burrow quite fast and even squirt water at you!

Pūpū terakihi | Paper nautilus

Argonauta nodosus

Brooding shell
(3D printed)

- Inside lives a small octopus!

Tāmaki Paenga Hira Auckland War Memorial Museum

Pūpū terakihi | Paper nautilus

Argonauta nodosus

Habitat
Floats on ocean surfaces.

Diet
Carnivorous. Captures prey with its tentacles, then stabs it injecting poison.

Predators
Sharks, large fish, turtles, octopuses.

Human impact
In the early 1800s, French scientist Jeannette Villepreux-Power was the first person to experiment on paper nautilus' and while doing this she invented the modern aquarium.

Info
The shell is also a floatation device. The animal pumps water in and out to let it move up and down the water column.

DID YOU KNOW?

Just before Captain Cook's arrival in Aotearoa a mass stranding of pūpū tarakihi occured on Tāmaki's shores. Titahi, a seer from Ōrākei, prophesised a 'mighty wind' from the north causing the stranding which would eventually cause major change to the Waitematā.

Tītī wainui | Fairy prion

Pachyptila turtur

Wing

- Looks delicate, but is strong enough to dig big holes in the ground to live in

Tāmaki Paenga Hira Auckland War Memorial Museum

Tītī wainui | Fairy prion

Pachyptila turtur

Habitat
Live on offshore islands. Excavates burrows in the ground to nest.

Diet
Shallow dives into the water to scoop out krill and small animals.

Predators
Used to live on the mainland until mammalian predators (cats, rats and stoats) were introduced by humans. Natural predators include other birds such as skuas and harriers.

Info
Largest breeding colony is on Stephens island in the Cook Strait where tuatara eat up to 25% of their eggs.

QUESTION

Tītī wainui are considered a keystone species. Their burrows create safe, sheltered and humid homes for lizards, tuatara and insects. Their droppings also create fertile rich soil for plants. Can you think of any other keystone species in the box, or in Aotearoa?

Tītī | Short tailed shearwater

Puffinus tenuirostris

Wing

- Perfect fliers but clumsy walkers (more like waddlers)

Tāmaki Paenga Hira Auckland War Memorial Museum

Tītī | Short tailed shearwater

Puffinus tenuirostris

Habitat
They migrate all year round. They can be found flying through NZ from October – January, and breed in Australia. Sometimes they travel 15 000 km each way to Alaska and back.

Diet
Dive up to 10m in the water to catch fish. Will feed in large flocks or with dolphins when around schooling fish.

Human impact
Although there are massive populations, they remain vulnerable. Habitat destruction, introduced predators and bycatch are major threats to shearwater.

Info
Shearwaters are excellent swimmers and perfect oceanic gliders, but with legs placed far back on their body they waddle very clumsily on land.

QUESTION

Consider an animal that travels so far for part of its life and the human-made obstacles it encounters along the way. What would you do to prevent any disruption to this animals journey?

Mako shark

Isurus oxyrinchus

Teeth

- The fastest swimming shark!

Tāmaki Paenga Hira Auckland War Memorial Museum

Mako shark

Isurus oxyrinchus

Habitat
Found worldwide temperate to tropical waters including NZ.

Diet
These sharks are fast hunters. They can eat squid, swordfish, tuna and many other prey.

Predators
Humans used to catch mako sharks for food. They are now threatened so its not recommended to fish for them.

Human impact
For Māori, shark fishing was a summertime activity. In the Manukau, inland Māori from Waikato would arrive by canoe at Awhitu to spend the summer catching and drying great quantities of shark. Flesh, oil and eggs were a delicacy eaten raw.

PŪRĀKAU

A taniwha named Te Mokai A Kahu lived around the Wai Te Mata rock, in the Waitematā Harbour. Once each year he swam around his rock as a signal that the shark-fishing season could begin. In a battle, Ngā Puhi from the north damaged his mauri (life force). Te Mokai A Kahu was never seen again, but some say it lurks in the deep channel off Kauri Point, where sharks can still be caught.

Maki, kera wēra | Orca whale

Orcinus orca

Tooth (3D printed)

- Family is important for this mammal

Tāmaki Paenga Hira Auckland War Memorial Museum

Maki, kera wēra | Orca whale

Orcinus orca

Habitat
Open ocean & coastal waters. Often pass through Auckland when travelling.

Diet
Fish and squid, also known to attack sharks.

Predators
None, orca are apex predators.

Human impact
They are likely to get a build-up of human-made toxins via the food web which can pose a threat to their health.

Info
Despite having 'whale' in their name, orcas are the largest members of the dolphin family. Highly intelligent, they are known to share food, mourn and care for other orca's calves.

QUESTION

Orca live all over the planet and, just like humans, different populations of orca have been found to have their own cultures due to differences in diet, behaviour and vocalisations. How do you think scientists observe this?

Kotakota ngū | Rams horn squid

Spirula spirula

Shell

- It’s a small squid. The shell sits inside the body and is used to help it float.

Tāmaki Paenga Hira Auckland War Memorial Museum

Kotakota ngū | Rams horn squid

Spirula spirula

Habitat
Lives in the open ocean and are very rarely seen alive.

Diet
Assumed to eat small fish and crustaceans.

Predators
Oceanic seabirds and fish.

Human impact
Even though its hard to find them alive, you can easily find their shells on beaches across Auckland.

Info
Unlike most animals the ram's horn squid migrates every day! Their migration is vertical; by day they live 500-1000m below the surface and migrate up to 300m every night to feed. Thats a long way for a creature this small.

QUESTIONS

Ram's horns are sometimes called tail-light squid because they have a bioluminescent area on its behind which gives off a green light. Can you think of any other animals that are bioluminescent? What do you think causes it and why would animals have this fascinating ability?

Parāoa | Sperm whale

Physeter macrocephalus

Tooth & ear (3D printed)

- Has the biggest brain of all animals!

Tāmaki Paenga Hira Auckland War Memorial Museum

Parāoa | Sperm whale

Physeter macrocephalus

Habitat
Found worldwide, including Auckland. Seen close to shore where deep water meets land.

Diet
Feeds mainly on squid. A 12m long squid was once found in the stomach of a stranded whale!

Predators
Calves and weak adults can be hunted by pods of orca.

Human impact
In the 18th and 19th centuries, whalers collected ambergris, a waxy substance formed in the intestine of sperm whales. It was sold at high prices because it was used to create luxurious smelling perfumes.

QUESTION

Here we have a sperm whale's ear bone, but where are their ears? Their auditory organs are all internal. Unlike us, their ear bones are separate from their skull, which allows them to pinpoint where sound is coming from underwater.

Pāpaka ura | Red rock crab

Guinusia chabrus

Exoskeleton

- Watch out for them between rock ledges!

Tāmaki Paenga Hira Auckland War Memorial Museum

Pāpaka ura | Red rock crab

Guinusia chabrus

Habitat
Rocky shore between rocks.

Diet
Opportunistic. Eats molluscs, some algae, and dead animals.

Predators
An octopus's favourite meal.

Info
They mate when the female is ready to moult. The male guards her while she takes off her old carapace (shell) and waits for the new exoskeleton to harden. Eggs are kept safe under the new exoskeleton until she is ready to lay them.

QUESTION

Many invertebrates, such as the red rock crab, have an exoskeleton which they need to moult several times in their life as they get bigger. Whats the difference between invertebatres and vertebrates? Which one of these do we belong to?

Rimurimu | Kelp

Ecklonia radiata

Holdfast

- Like an apartment building for little animals

Tāmaki Paenga Hira Auckland War Memorial Museum

Rimurimu | Kelp

Ecklonia radiata

Habitat
Kelp attaches to rock where it can photosynthesise.

Diet
Sunlight.

Predators
Kina and other herbivores.

Human Impact
We farm kelp and other seaweeds for a variety of products. For example, toothpaste.

Info
It's not just the kelp leaves that provide shelter for animals, their holdfasts also provide protection and homes to tiny animals.

QUESTION

How do you think holdfasts of kelp are the same as the roots of land plants? How do you think they are different?

Matau | Fishing hooks

Museum replicas

- The first fish hooks made in Aotearoa

Tāmaki Paenga Hira Auckland War Memorial Museum

Matau | Fishing hooks

Manufacture
Māori are fishing superstars!
Their knowledge of fish led to the development and manufacture of a wide variety of matau.

Materials
There are two main types of matau: early one-piece hooks (made from bone or shell). And later, hooks made from a combination of bone, wood or shell.

DID YOU KNOW?

Matau are significant symbols in many Pacific cultures and are often carved into jewellery. Try find Maui's magic fishhook in the film Moana!

Sometimes you will see people wearing fish hook shaped necklaces called 'hei matau'.

In matauranga Māori, he matau reflects how Te Ika A Māui (the North Island), once a huge fish, was caught by the great mariner Māui using only a hook made from his mother's jawbone.

Tāmure | Snapper

Chrysophrys auratus

Skeleton and Jaw

- Young snapper love to live in mangroves

Tāmaki Paenga Hira Auckland War Memorial Museum

Tāmure | Snapper

Chrysophrys auratus

Habitat
Anywhere between shallow estuaries to a depth of 200m.

Diet
Carnivorous and opportunistic. Auckland snapper love to eat kina.

Predators
Larger fish and sharks.

Human impact
One of New Zealand's favourite fish to catch and eat.

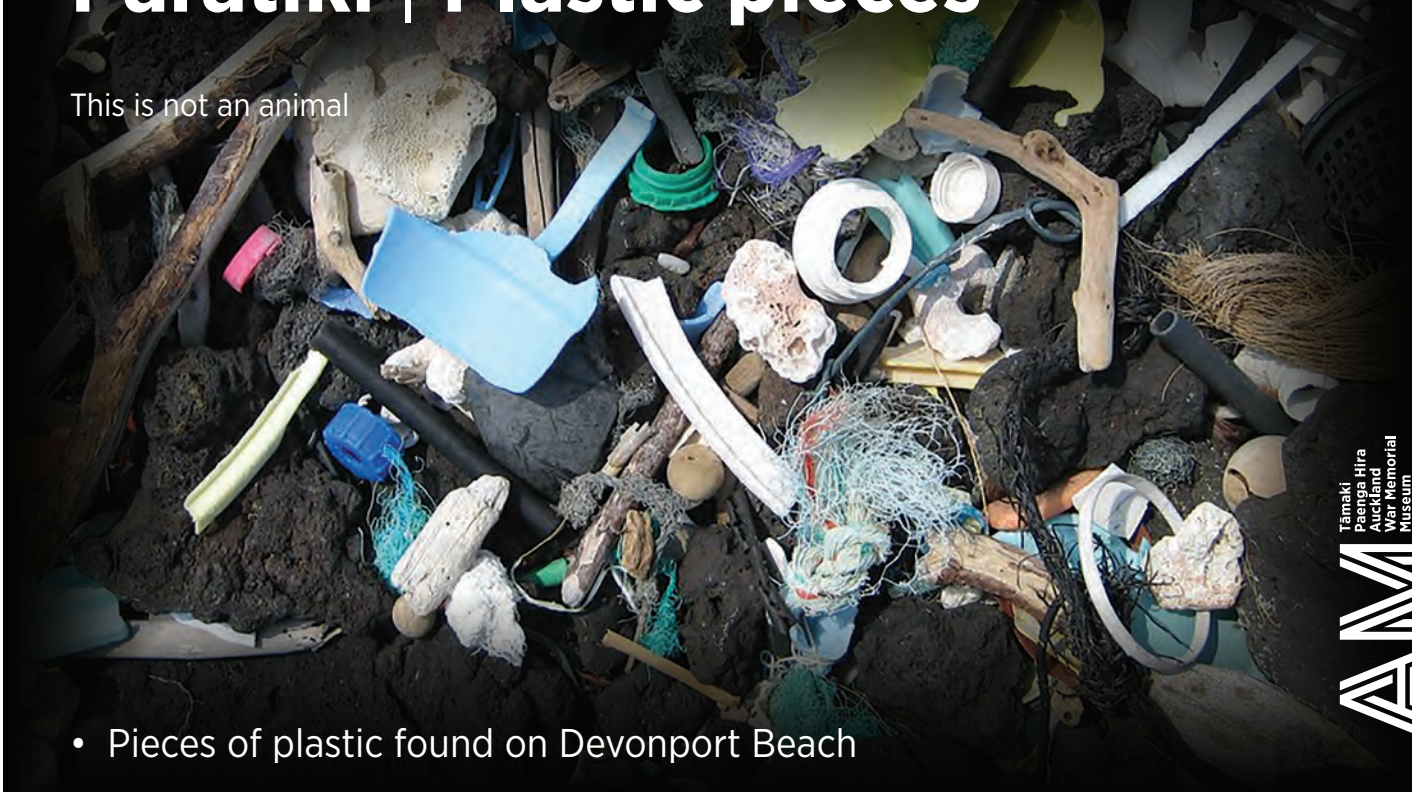
Info
Snapper are known for their big canine teeth, hence the name 'snapper'. Don't make the mistake of putting your finger in an adult snapper's mouth – it can literally be crushed!

QUESTION

Snapper are one of New Zealand's favourite fish to catch and eat so some restrictions and rules have been put in place to help protect them. What do you think some of these rules could be?

Paratiki | Plastic pieces

This is not an animal



- Pieces of plastic found on Devonport Beach

Tāmaki Paenga Hira Auckland War Memorial Museum

Paratiki | Plastic pieces

This is not an animal

Habitat
No natural habitat, but somehow found everywhere. Migrates large distances across oceans.

Predators
No nutritional value but is eaten by many animals: whales, turtles, fish, seabirds, dolphins, crabs, stingrays etc.

Human impact
We created it.

Info
Most of the plastic picked up from beaches have only been used once. For example: food wrappers, plastic bottles and plastic bags.

QUESTION

Even though we find a lot of plastic in the ocean, we make it on land. Can you draw the journey of a piece of plastic you have found on the beach? What can you do to help prevent plastic pollution?

Tiotio | Pink barnacle

Notomegabalanus decorus

Exoskeletons on metal rod

- Barnacles are crustaceans, this means they’re closely related to crayfish and crabs

Tāmaki Paenga Hira Auckland War Memorial Museum

Tiotio | Pink barnacle

Notomegabalanus decorus

Habitat
Adults are sessile (only live on one spot) and mostly live on rocks. However, the larvae do swim about the ocean. They have great listening skills to find members of their species so they can settle down and become adults next to them.

Diet
Filter feed using a fan like appendage that sways in the water.

Predators
Some carnivorous snails can drill into barnacle shells and eat them.

Human impact
Lots of barnacles live on human made objects like this metal rod you see.

DID YOU KNOW?

Barnacles are both male and female

QUESTIONS

Ever seen pictures of barnacles on whales or boats? Why would they have an advantage over their cousins placed on rocks?

Pūpū rore | Arabic volute

Alcithoe arabica

Shell

- The snail living inside is a predator!

Tāmaki Paenga Hira Auckland War Memorial Museum

Pūpū rore | Arabic volute

Alcithoe arabica

Habitat
Live only in New Zealand. Found around low tide areas in sand and mud.

Diet
Carnivore. This quick-moving predator smothers bivalve molluscs with its large 'foot'.

Human impact
Sought after by shell collectors. This is a cause of decline for many marine creatures with beautiful shells.

DID YOU KNOW?

Most spiralling shells are "right-handed", spiralling clockwise. But some can be left-handed as well, sometimes fetching high prices from collectors

Papatua | Chiton

Eudoxochiton nobilis

Shell

- Shields living on rocks

Tāmaki Paenga Hira Auckland War Memorial Museum

Papatua | Chiton

Eudoxochiton nobilis

Habitat
Common under stones on the rocky shore.

Diet
Grazes on algae that grow on rocks.

Predators
Sea stars, crabs, fish and sometimes seagulls.

Human impact
Climate change creates more storms. Extra wave action may impact the way chitons cling onto rocks.

DID YOU KNOW?

Even without eyes, chitons manage to make their way back to their 'home' spot after grazing at night. Scientists don't exactly know how they do this, but recent experiments suggest they respond to magnetism because their metallic teeth leave traces of iron in rocks, therefore have a trail to follow

Pekapeka | Comb sea star

Astropecten polyacanthus

Whole dried specimen

- Slow moving predators

Tāmaki Paenga Hira Auckland War Memorial Museum

Pekapeka | Comb sea star

Astropecten polyacanthus

Habitat
Spends most of its time buried in the seabed.

Diet
Eats molluscs and scrap food that makes it way to the seafloor.

Predators
Sometimes sharks, stingrays and other sea stars.

Human impact
You will find comb stars in aquariums because they are good at cleaning up.

Info
They contain tetrodotoxin, the same deadly poison that puffer fish (fugu) have. This toxin can occasionally make its way through the food chain to humans!

DID YOU KNOW?

Scientists find it hard to say 'starfish' because they're not actually fish, they are invertebrates related to kina

Pekapeka | Carpet shark

Cephaloscyllium isabellum

Egg case

- Some sharks lay eggs, but others can give birth to live shark pups!

Tāmaki Paenga Hira Auckland War Memorial Museum

Pekapeka | Carpet shark

Cephaloscyllium isabellum

Habitat
Near the seafloor, mostly in shallow waters.

Diet
They hunt at night time, mostly for invertebrates but sometimes fish.

Predators
Larger sharks.

Human impact
Usually caught by accident and released, not often eaten.

DID YOU KNOW?

Their egg cases are sometimes called mermaid's purses because of their unique shape! These sharks can inflate themselves by sucking up water to appear bigger and scare predators away.

Takarape | Sunset shell

Gari spp.

Shell

- Can you paint the sunset like this shell can?

Tāmaki Paenga Hira Auckland War Memorial Museum

Takarape | Sunset shell

Gari spp.

Habitat
In soft sand below high tide. They bury down about 20cm deep.

Diet
Filters plankton out of the water.

Predators
Predators for molluscs with shells include snapper, carpet sharks, and even other molluscs like the Arabic volute! Check in the kete for specimens of these species too.

DID YOU KNOW?

They are nicknamed sunset shells for their pink and orange rays and bands across the shell

Pararā | Broad billed prion

Pachyptila vittata

Two skulls

- Uses a wide beak to scoop up food from water

Tāmaki Paenga Hira Auckland War Memorial Museum

Pararā | Broad billed prion

Pachyptila vittata

Habitat
In NZ waters throughout the year. Breeds in colonies on offshore predator free islands.

Diet
Like baleen whales, these birds have comb-like filters around the edge of their beak to sieve out food from seawater.

Human impact
Local extinctions have occurred on islands where humans have introduced predators like cats, stoats and rats.

DID YOU KNOW?

Wild weather can have a huge impact on seabirds. In 2011, a storm in Southland killed around 250,000 broad-billed prions!

QUESTION

As climate change progresses, one of the impacts will be more changeable weather and increased storms. How do you think this will affect the broad billed prion and other creatures in this box?

Tītī wainui | Fairy prion

Pachyptila turtur

This is its wing and skull

- Looks delicate, but is strong enough to dig big holes in the ground to live in

Tāmaki Paenga Hira Auckland War Memorial Museum

Tītī wainui | Fairy prion

Pachyptila turtur

Habitat
Live on offshore islands. Excavates own burrows in the ground to nest.

Diet
Shallow dives into the water to scoop out krill and small animals.

Predators
Used to live on the mainland until mammalian predators (cats, rats, stoats) were introduced by humans. Natural predators are other birds such as skuas and harriers.

DID YOU KNOW?
Largest breeding colony is on Stephens island in the Cook Strait where tuatara eat up to 25% of their eggs

QUESTION
Tītī wainui are considered a keystone species. Their burrows create safe, sheltered and humid homes for lizards, tuatara and insects. Their droppings also create highly fertile soil for plants. Can you think of any other keystone species in the box, or in Aotearoa?

Kōpūtōtara | Porcupine fish

Allomycterus pilatus

Spikes/spines

- The fish that blows up like a balloon!

Tāmaki Paenga Hira Auckland War Memorial Museum

Kōpūtōtara | Porcupine fish

Allomycterus pilatus

Habitat
Shallow reefs.

Diet
Carnivorous, uses powerful jaws to crush crabs, urchins and seashells.

Human impact
A delicacy in Japan, also known as fugu, people take a chance eating this toxic fish and hoping not to get poisoned. Eek!

QUESTION

When threatened it can inflate itself with water, turning into a spiky balloon to disourage any potential predator. Which other animal in the kete inflates itself with water?

Papaka huna | Camouflage crab

Notomithrax spp.

Exoskeleton

- Puts seaweed on its back to hide!

Tāmaki Paenga Hira Auckland War Memorial Museum

Papaka huna | Camouflage crab

Notomithrax spp.

Habitat
Rocky shore. Lives under rocks and among seaweed.

Diet
Scavenges on dead organisms or anything slow enough for them to catch.

Predators
Octopus and fishes.

DID YOU KNOW?

These crabs hide by attaching things like seaweed or sponges to their shell using Velcro-like hooked hairs. When they moult, they sometimes transfer their decorations to their new shell! The algae and sponges that grow on their back can be little habitats for smaller creatures. They could also have toxins which provide the crab extra defense!

Tuatini | Sevengill shark

Notorynchus cepedianus

Teeth from lower jaw

- Related to sharks living when dinosaurs were around!

Tāmaki Paenga Hira Auckland War Memorial Museum

Tuatini | Sevengill shark

Notorynchus cepedianus

Habitat
In temperate areas near coastlines around the world.

Diet
Can put on a burst of speed to catch almost any kind of prey: fish, other sharks, seals etc.

Human impact
Often fished for meat, fins, skin, and liver oil. People also fish them for sport and competitions.

DID YOU KNOW?

This is an ancient lineage of sharks with seven gill slits instead of five, and while the upper jaw has pointed teeth the lower jaw is filled with razor-sharp sawblade-shaped teeth that can easily rip through the flesh of its prey

Kina | Sea urchin

Evechinus chloroticus

Outer shell & Aristotle's lantern mouthpiece

- Loves to eat seaweed
- Lives in fear of large snapper jaws!

Tāmaki Paenga Hira Auckland War Memorial Museum

Kina | Sea urchin

Evechinus chloroticus

Habitat
Rocky shore to 60m deep.

Diet
Nocturnal grazer that feeds on seaweed and algae. A grinding mill, called an Aristotle's lantern and made of five teeth, allows for chewing of tough plant material.

Predators
Snapper, crayfish and other large fish.

Human impact
Humans have been harvesting them for hundreds of years for food.

PROBLEM

Kina populations are increasing, this means they are going to eat lots of seaweed that young fish like to hide in. How do you think we are able to control this?

Pūngorungoru | Finger sponge

Raspailia spp.

Whole dried specimen

- The original kitchen sponge!

Tāmaki Paenga Hira Auckland War Memorial Museum

Pūngorungoru | Finger sponge

Raspailia spp.

Habitat
Found in open rock reef flats.

Diet
Filters food from the seawater that flows through its pores and channels.

Predators
Sea slugs and turtles. Some sponges contain toxins and glass-like spicules to stop animals eating them.

Human impact
Sea sponges are better at keeping water in than the sponges in your kitchen. They are the original dishwashing tool!

DID YOU KNOW?

Sponges are not plants; they are classified as an animal without a brain or nervous system

QUESTION

The holes and spaces inside a sponge can be protective spaces for smaller animals. Are there other species in the kete that can do this as well?

Kotakota ngū | Rams horn squid

Spirula spirula

Shell

- It’s a small squid. The shell sits inside the body and is used to help it float.

Tāmaki Paenga Hira Auckland War Memorial Museum

Kotakota ngū | Rams horn squid

Spirula spirula

Habitat
Lives in the open ocean and are very rarely seen alive.

Diet
Assumed to eat small fish and crustaceans.

Predators
Oceanic seabirds and fish.

Human impact
Even though its hard to find them alive, you can easily find their shells on beaches across Auckland.

Info
Unlike most animals the ram's horn squid migrates every day! Their migration is vertical; by day they live 500-1000m below the surface and migrate up to 300m every night to feed. Thats a long way for a creature this small.

QUESTIONS

Ram's horns are sometimes called tail-light squid because they have a bioluminescent area on its behind which gives off a green light. Can you think of any other animals that are bioluminescent? What do you think causes it and why would animals have this fascinating ability?

Tāmure | Snapper

Chrysophrys auratus

Skeleton and Jaw

- Young snapper love to live in mangroves

Tāmaki Paenga Hira Auckland War Memorial Museum

Tāmure | Snapper

Chrysophrys auratus

Habitat
Anywhere between shallow estuaries to a depth of 200m.

Diet
Carnivorous and opportunistic. Auckland snapper love to eat kina.

Predators
Larger fish and sharks.

Human impact
One of New Zealand's favourite fish to catch and eat.

Info
Snapper are known for their big canine teeth, hence the name 'snapper'. Don't make the mistake of putting your finger in an adult snapper's mouth – it can literally be crushed!

QUESTION

Snapper are one of New Zealand's favourite fish to catch and eat so some restrictions and rules have been put in place to help protect them. What do you think some of these rules could be?

Pūpū terakihi | Paper nautilus

Argonauta nodosus

Brooding shell
(3D printed)

- Inside lives a small octopus!

Tāmaki Paenga Hira Auckland War Memorial Museum

Pūpū terakihi | Paper nautilus

Argonauta nodosus

Habitat
Floats on ocean surfaces.

Diet
Carnivorous. Captures prey with its tentacles, then stabs it injecting poison.

Predators
Sharks, large fish, turtles, octopuses.

Human impact
In the early 1800s, French scientist Jeannette Villepreux-Power was the first person to experiment on paper nautilus' and while doing this she invented the modern aquarium.

Info
The shell is also a floatation device. The animal pumps water in and out to let it move up and down the water column.

DID YOU KNOW?

Just before Captain Cook's arrival in Aotearoa a mass stranding of pūpū tarakihi occured on Tāmaki's shores. Titahi, a seer from Ōrākei, prophesised a 'mighty wind' from the north causing the stranding which would eventually cause major change to the Waitematā.

Matau | Fishing hooks

Museum replicas

- The first fish hooks made in Aotearoa

Tāmaki Paenga Hira Auckland War Memorial Museum

Matau | Fishing hooks

Manufacture
Māori are fishing superstars! Their knowledge of fish led to the development and manufacture of a wide variety of matau.

Materials
There are two main types of matau: early one-piece hooks (made from bone or shell). And later, hooks made from a combination of bone, wood or shell.

DID YOU KNOW?

Matau are significant symbols in many Pacific cultures and are often carved into jewellery. Try find Maui's magic fishhook in the film Moana!

Sometimes you will see people wearing fish hook shaped necklaces called 'hei matau'.

In matauranga Māori, he matau reflects how Te Ika A Māui (the North Island), once a huge fish, was caught by the great mariner Māui using only a hook made from his mother's jawbone.

Toheroa

Paphies ventricosa

Shell

Tāmaki Paenga Hira Auckland War Memorial Museum

Toheroa

Paphies ventricosa

Habitat
Lives buried about 15cm below the surface in fine clean sand. Found mostly on the west coast.

Diet
Filters seawater through gills to pick up food.

Predators
Sea stars, snapper, some seagulls, humans.

Human impact
Humans ate them, they were one of the most popular shellfish in the 1950s and 60s. Canned toheroa soup was very common for family dinners.

Info
They migrate and may move more than 30m in one night.

QUESTION

It is illegal to catch toheroa now, in fact you could be fined up to $20,000 if you get caught! Why do you think the rules are so strict

Maki, kera wēra | Orca whale

Orcinus orca

Tooth (3D printed)

- Family is important for this mammal

Tāmaki Paenga Hira Auckland War Memorial Museum

Maki, kera wēra | Orca whale

Orcinus orca

Habitat
Open ocean & coastal waters. Often pass through Auckland when travelling.

Diet
Fish and squid, also known to attack sharks.

Predators
None, orca are apex predators.

Human impact
They are likely to get a build-up of human-made toxins via the food web which can pose a threat to their health.

Info
Despite having 'whale' in their name, orcas are the largest members of the dolphin family. Highly intelligent, they are known to share food, mourn and care for other orca's calves.

QUESTION

Orca live all over the planet and, just like humans, different populations of orca have been found to have their own cultures due to differences in diet, behaviour and vocalisations. How do you think scientists observe this?

Parāoa | Sperm whale

Physeter macrocephalus

Tooth & ear (3D printed)

- Has the biggest brain of all animals!

Tāmaki Paenga Hira Auckland War Memorial Museum

Parāoa | Sperm whale

Physeter macrocephalus

Habitat
Found worldwide, including Auckland. Seen close to shore where deep water meets land.

Diet
Feeds mainly on squid. A 12m long squid was once found in the stomach of a stranded whale!

Predators
Calves and weak adults can be hunted by pods of orca.

Human impact
In the 18th and 19th centuries, whalers collected ambergris, a waxy substance formed in the intestine of sperm whales. It was sold at high prices because it was used to create luxurious smelling perfumes.

QUESTION

Here we have a sperm whale's ear bone, but where are their ears? Their auditory organs are all internal. Unlike us, their ear bones are separate from their skull, which allows them to pinpoint where sound is coming from underwater.

Rimurimu | Kelp

Ecklonia radiata

Holdfast

- Like an apartment building for little animals

Tāmaki Paenga Hira Auckland War Memorial Museum

Rimurimu | Kelp

Ecklonia radiata

Habitat
Kelp attaches to rock where it can photosynthesise.

Diet
Sunlight.

Predators
Kina and other herbivores.

Human Impact
We farm kelp and other seaweeds for a variety of products. For example, toothpaste.

Info
It's not just the kelp leaves that provide shelter for animals, their holdfasts also provide protection and homes to tiny animals.

QUESTION

How do you think holdfasts of kelp are the same as the roots of land plants? How do you think they are different?

Tuatua

Paphies subtriangulata

Shell

- Catch me if you can...I'd rather you didn't

Tāmaki Paenga Hira Auckland War Memorial Museum

Tuatua

Paphies subtriangulata

Habitat
Buried in beaches with fine sand.

Diet
Filters seawater through gills to pick up food.

Predators
Sea stars, snapper and some sea gulls.

Human impact
Tuatua are commonly harvested for kaimoana –
but be aware of the limits in your area for collecting them.

DID YOU KNOW?

To escape capture, tuatua can burrow quite fast and even squirt water at you!

Rimurimu | Red seaweed

Rhodophyta spp.

Dried specimen

- Seaweeds can be brown, green or red

Tāmaki Paenga Hira Auckland War Memorial Museum

Rimurimu | Red seaweed

Rhodophyta spp.

Habitat
Attaches to rock where it can photosynthesise.

Diet
Sunlight

Predators
Kina, some hermit crabs and other herbivores.

Human Impact
Seaweed absorbs many good minerals from the ocean and are thought to be the single most nutritious food you can eat.

Info
Red algae absorbs light easier than green seaweeds, this means it can grow in much deeper water.

Rimurimu | Brown seaweed

Carpophyllum plumosum

Whole specimen

Tāmaki Paenga Hira Auckland War Memorial Museum

Rimurium | Brown seaweed

Evechinus chloroticus

Habitat
Rocky shore in tidal zone

Diet
Sunlight

Predators
Crabs and some fish

Human impact
Humans eat seaweed. In fact, seaweed farming is highly sustainable with some species growing 30cm per day, which allows for plenty of harvest. No need to water this crop!

DID YOU KNOW?
Some toothpastes contain seaweed. It's very good for making natural jelly. What other food products do you think contain seaweed?

Rimurimu | Brown seaweed

Carpophyllum plumosum

Whole specimen

Tāmaki Paenga Hira Auckland War Memorial Museum

Rimurium | Brown seaweed

Evechinus chloroticus

Habitat
Rocky shore in tidal zone

Diet
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DID YOU KNOW?
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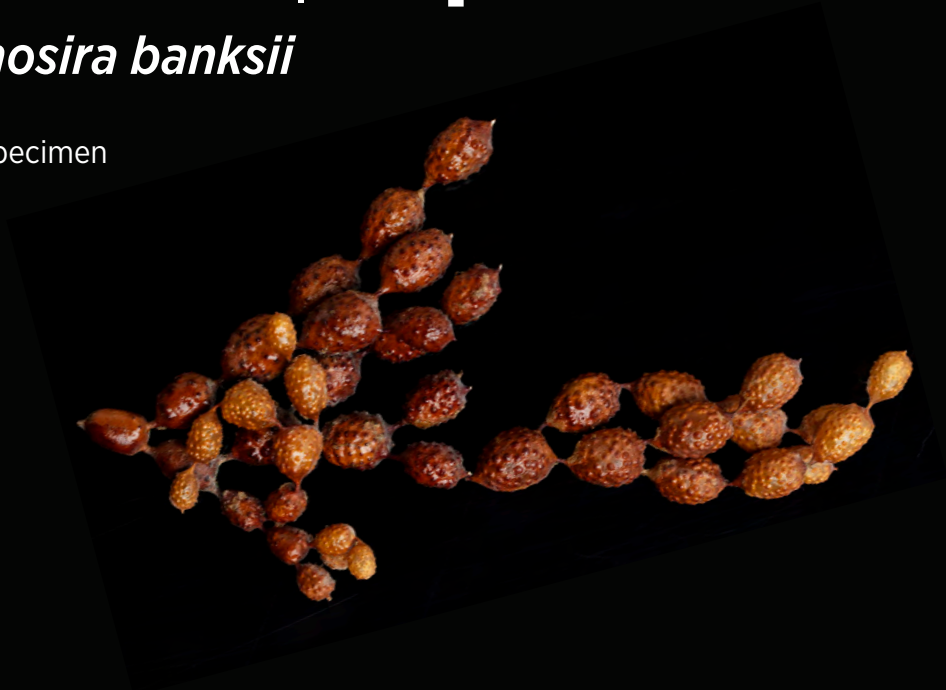
Rimurimu | Neptune's necklace

Hormosira banksii

Whole specimen



Looks better in the ocean than around your neck

Tāmaki Paenga Hira Auckland War Memorial Museum

Rimurimu | Neptune's necklace

Hormosira banksii

Habitat
Rocky shore in tidal zone

Diet
Sunlight

Predators
Kina, some hermit crabs and other herbivores.

Human Impact
You might like to pop the beads on your friends, but these beads (leaves) are for the plant to float because it's easier to photosynthesise closer to the surface of the water.

DID YOU KNOW?
An algae named notheia lives on Neptune's necklace which provides delicious food for little creatures.

Paranoke

Stephopoma roseum

Whole specimen

Homes left behind by sea snails

Tāmaki Paenga Hira Auckland War Memorial Museum

Paranoke

Stephopoma roseum

Habitat
Floor of the ocean

Diet
Makes a slime which traps food particles. The snail will then eat the slime with the nutrients of trapped food.

Human Impact
Dredging the bottom of the ocean for fishing can destroy habitat

Information
These snails like to embed themselves in sea sponges. This way, they can eat the sponges' leftovers.

DID YOU KNOW?
There are some species out there which have no common name, like this snail. The Te Reo Māori name we put here, nganga, is the word for shells left behind by snails.

Manaia | Seahorse

Hippocampus abdominalis

Whole specimen

Actually it is a fish

Tāmaki Paenga Hira Auckland War Memorial Museum

Manaia | Seahorse

Hippocampus abdominalis

Habitat
Shallow waters, reefs, usually clinging onto seaweed

Diet
Uses its snout to suck up little invertebrates like a vacuum.

Predators
Larger fish, stingrays and sharks

Human Impact
Illegal trade of seahorses occurs for medicinal properties. They were once said to cure baldness!

Information
Males can change colour rapidly which they do to attract mates.

DID YOU KNOW?
Fascinatingly, it is the males which give birth to the young! How do you think this is possible?

Pūtātara | Ostrich foot

Struthiolaria papulosa

Whole specimen

It is actually a snail

Tāmaki Paenga Hira Auckland War Memorial Museum

Pūtātara | Ostrich foot

Struthiolaria papulosa

Habitat
Soft sediment along the sea floor

Diet
This snail is a predator! It eats other molluscs.

Predators
Large fish and sharks

Human Impact
Shells can be found all over beaches and are commonly used as decoration and sometimes necklaces.

Information
The lip of the opening of the shell is said to look like an ostrich's foot, hence the name.

DID YOU KNOW?
An ostrich food can turn itself over on the sand using the pointy end of its shell.