

Explore the Ecosystem - Seahorses

Read the case study of one of our most famous SEA LIFE creatures – the seahorse. Use the text to gather key information (highlighting and note taking) about what the seahorse eats and what eats them. To create an effective food chain, you will also need to consider what the prey of the seahorse consumes as its own food source.

Seahorses

In all of our SEA LIFE aquariums, visitors can observe the mesmerising creatures that are seahorses – that is, if you can spot them as they camouflage themselves! There are 46 recognised species of seahorses in the world, but it can be hard to tell the difference between some of them, due to their similar appearance and camouflage behaviours. Many people are surprised to hear that seahorses are actually fish! The origin of their name is from the similarity of their head to a horse's head, but also from their Latin name, "Hippocampus", which translates to "horse sea monster" or "horse caterpillar". The seahorse is found in coastal waters all over the world. Seahorses are not very good swimmers, so they often live in areas where they can seek shelter from strong currents, such as mangrove roots, seagrasses, seaweeds, and coral reefs.

Although seahorses are terrible swimmers, they are great predators! They use their long snouts to rapidly slurp in water and food, allowing them to catch their prey. Seahorses need to eat continuously in order to stay alive. Luckily, the seahorse can eat any live animal that's small enough to fit through their jaws, ensuring they can feed continuously. They suck their food through their snouts, similar to a vacuum cleaner when they are eating. If the prey is large, their snouts expand as they are not able to chew and have to disintegrate food while they eat.

As seahorses do not have stomachs, they have to follow a diet of very small creatures such as tiny fish, shrimp and plankton. These tiny creatures, which are consumers of seaweed, are preyed on by the seahorses. Within their food chain, seahorses are also consumed by larger fish (like tuna and rays) and crabs, which in turn are consumed by sharks, whales, and of course, humans.

Humans have a significant impact on seahorse populations across the world. Their habitats are affected through damage to the coral reef and the volume of waste in the ocean, both causing seahorse habitat loss. Furthermore, in the process of fishing, many seahorses are caught by accident – this is known as 'bycatch'. Some countries have also been known for catching seahorses on purpose, for tourism gift purposes. Several conservation groups, including The Seahorse Trust and Project Seahorse, are working together to protect the species, but there is a lot we can also be doing at home, including more recycling and reducing our usage of single-use plastic.

You can find out more about our Seahorses by visiting:

<https://www.visitsealife.com/sydney/conservation/local-conservation-projects/seahorse-breeding-program/>

NOTE TAKING AREA

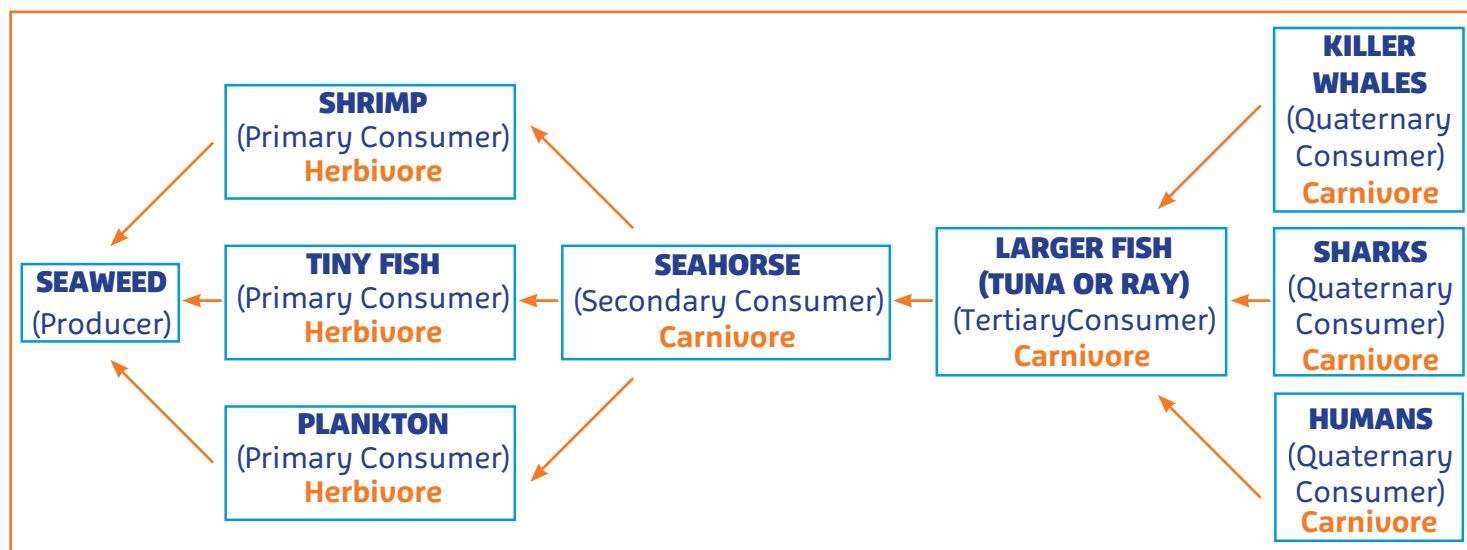
Seahorses eat tiny fish, shrimp and plankton.

Tiny fish, shrimp and plankton all eat seaweed.

Seahorses are eaten by larger fish (tuna and rays).

Tuna and rays are eaten by sharks, whales and humans.

Drawing on the information gathered, use the space below to create the **food chain or food web** that the seahorse is part of in their ecosystem. **TEACHER NOTE – for adaptive teaching, pupils could draw one food chain rather than the whole web – Seaweed < Shrimp < Seahorse < Tuna < Human.** Remember to identify and label the parts of the food web that are the **producers** and **consumers**!



Questions and prompts:

Is the seahorse a predator, prey or both? Why?

It is predator and prey – it hunts for shrimp, tiny fish and plankton, making it a predator. It also is hunted by large fish, making it prey. They have also been hunted by humans, making it prey.

Is the seahorse a herbivore, carnivore or omnivore? How do you know?

The seahorse is a carnivore because it eats other creatures - shrimp, tiny fish and plankton and it doesn't eat plants such as seaweed, which means it is not an omnivore.

Which part of the food chain / web is the producer? What makes it the producer?

The seaweed are the producers. They are a type of plant that grows in the sea. They make their own energy, using sunlight. The producer is always at the start of the food chain.

Which parts of the food chain are the primary consumers? Which are secondary consumers? Which are the tertiary consumers? Add these details to your food web or chain.

The fourth layer of a food chain or web is called the quaternary consumer – which ones are these on your food chain or web?

Extension/Challenge activity

What happens if there is a change in the ecosystem of the seahorse?

Different parts of the food chain rely on each other to keep the ecosystem an effective habitat.

Seahorses are at risk of becoming **extinct** due to human impact on their natural habitat. What would happen to the ecosystem if...

...there were fewer seahorses to eat the sea plankton, shrimp and tiny fish? How would it affect the amount of sea plankton, shrimp and tiny fish in the ocean?

The amount of sea plankton would **increase** if the seahorses were not there to be eating them. There would be **more** sea plankton, as they could live and reproduce without being eaten.

How would this scenario affect the amount of seaweed in the ocean?

The amount of seaweed on the ocean floor would **decrease** because there are too many sea plankton eating it, so there wouldn't be enough to feed the greater number of sea plankton.

If there were fewer seahorses in the sea, how might this affect the amount of larger fish in the ocean, such as tuna or rays? Use the words more/increase and fewer/decrease to support you with your explanation

If there were fewer seahorses for larger fish such as tuna or rays to eat, they may not have enough food to survive. This could mean that the number of tuna and rays could **decrease**. This, in turn, might affect the food sources of sharks, whales and humans.