

ADOPT A COASTLINE



NAME

STUDENT ACTIVITY

LIVING ON THE COAST – PLANT ADAPTATIONS

Plants are an important part of the coastal ecosystem. They help to stabilise sand dunes and provide shelter and a food source for animals. However, living by the ocean isn't easy for plants. Can you think of some reasons why? Write your ideas in the box below.

A large, empty rectangular box with a thin black border, intended for students to write their ideas about why living by the ocean is difficult for plants.

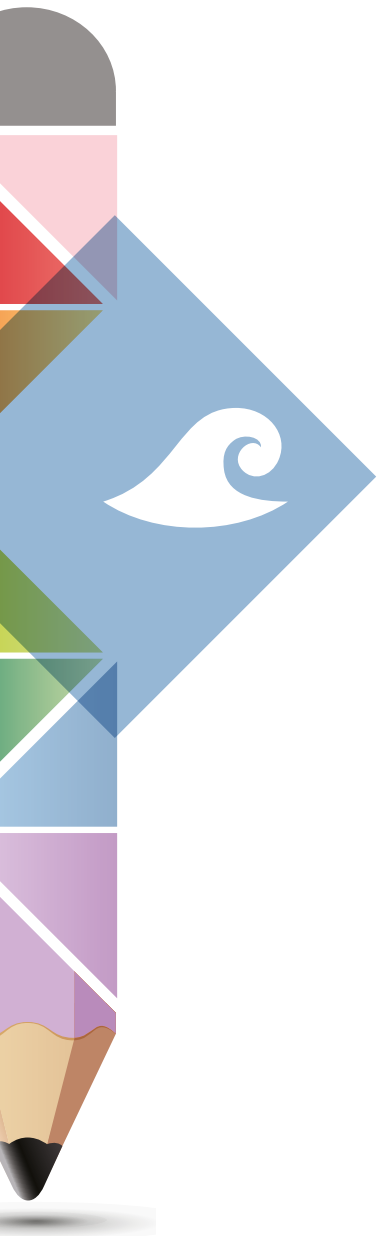
Plants that live by the ocean have adaptations to help them to live in this harsh environment.

An adaptation is a feature of the plant that helps it to survive. There are three types of adaptations:

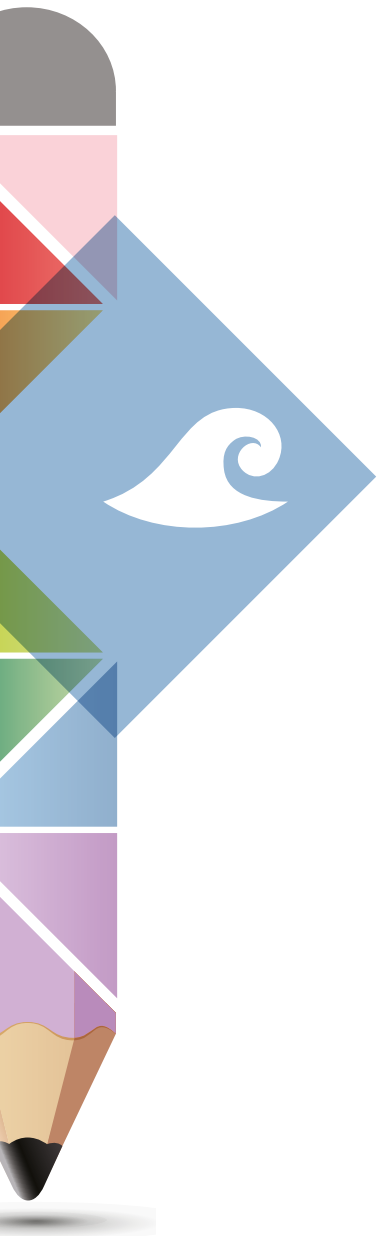
- Structural – the way it is made. For example, the sea urchin has spines covering its body – this helps it to avoid being eaten.
- Functional – the way it works. For example, the Lionfish makes a poison that is very painful.
- Behavioural – what it does. For example, many fish swim together in schools to protect themselves from predators.

Adaptations in plants are mostly structural and some are functional. Use the following website to help answer the questions about coastal plant adaptations:

Government of Western Australia, no date, *Perth Beachcombers Education Kit: Dune Vegetation*, <http://beachcombers-kit.fish.wa.gov.au/coastal-uses-impacts/dune-vegetation>



| Question | Answer |
|---|--------|
| 1. Name five things that make it difficult for plants to live by the ocean. | |
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| 2. Name two reasons why coastal plants are important? | |
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| 3. What do salty winds and hot temperatures do to plant leaves? | |
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| 4. a) What is the ground like at the beach? | |
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| 4. b) Why would this make it hard for plants to grow? | |
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| Question | Answer |
|--|--------|
| 5. How do hairy, waxy leaves help a plant to survive? | |
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| 6. Many coastal plants grow close to the ground. How does this help them to survive? | |
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| 7. Some coastal plants have very thick, waxy leaves. How does this help them to survive? | |
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| 8. Name two structural adaptations found in coastal plants. | |
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Spinifex - the king of dunes



Spinifex hirsutus

Photos: C. Hortin and K.McCreery (WA Herbarium, n.d.)



Spinifex longifolius

Photos: G. Byrne and K.C. Richardson (WA Herbarium, n.d.)

The diagrams and images above show two different types of Spinifex. Spinifex is often the first plant to grow on a sand dune. They are both very important for building up and stabilising sand dunes.

| Type of Spinifex | Description of plant (what does it look like?) |
|---|--|
| <i>Spinifex longifolius</i> (Beach Spinifex) | |
| <i>Spinifex hirsutus</i> (Hairy Spinifex) | |

The dashed lines on the diagram show the build up of sand layers. As the sand covers the Spinifex it doesn't die, rather it continues to grow either upwards or outwards. This helps to either build a dune up or to stabilise the dune.

Which Spinifex stabilises a sand dune?

Which Spinifex builds up a sand dune?

