



## Fact Sheet 6: Sand Dunes

Sand dunes are important because they (1) act as a protection line against storm-wave attack (2) store sand for beaches that have been stripped away by wave action (3) provide shelter, food and breeding sites for many birds, reptiles and insects.



### How are sand dunes formed?

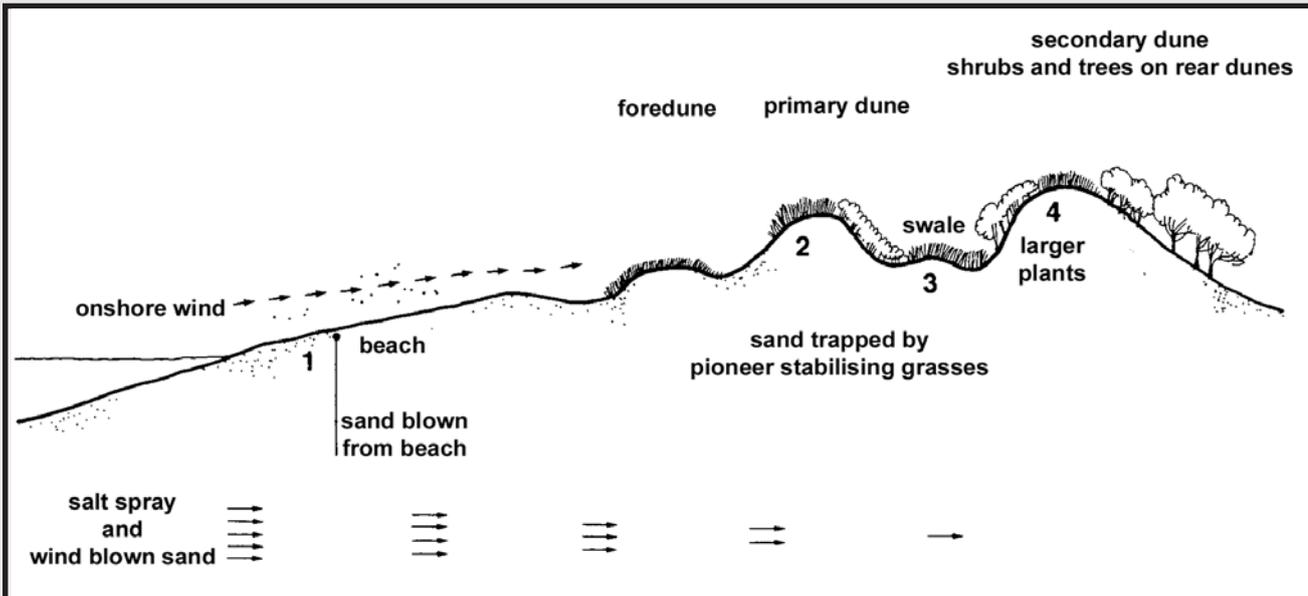


Figure 1: A profile of a typical sand dune environment, adapted from *The Fragile Environment Coastal: Sand Dunes, 1987, Department of Environment and Planning*

The four main zones of a dune system are

- (1) The **beach zone** extends from below the water's edge to the beginning of the foredune. Sand from this zone may be carried inland to supply the dune with sand or carried back out to sea by the waves.
- (2) The **primary dune** is the main dune adjacent to the beach and is stabilised by grasses and plants which are tolerant of salt spray. The plant's leaves act as wind breaks and thus trap sand.
- (3) The **swale** is the valley area between the primary and secondary dunes. The plants that grow here need more protection from the wind and salt spray.
- (4) The **secondary dune** acts as a windbreak to protect the inland environment.



Figure 2: Healthy sand dunes at Tennyson

#### Visit a healthy dune system at Tennyson.

Here you will see sand dunes that:

- have lots of sand
- are well vegetated with native grasses, shrubs and trees
- support native animals such as plovers and sleepy lizards
- have constructed pathways to minimise human disturbance.





# What lives in the Adelaide sand dunes?



Coastal plants live in zones within the sand dune system. These zones represent different environments. Each plant that lives within one of the four main zones has adapted to the environmental conditions found here.



Figure 4 : *Spinifex* is a native plant that traps sand to help build the dunes. It provides good shelter for other plants. It is found on the **foredune**.



Figure 5: Sea Rocket is a tough plant that can withstand the windy salty conditions of our coast. It can be found on the **primary dune**.



Figure 6: The grey saltbush is a larger plant that can be found on the **secondary dune**. It provides good shelter for birds that nest further away from the shoreline.

You can borrow Sand Dune Plant ID Cards from KPTW for field trips



# Activities that impact the sand dunes



## Stormwater



There are 108 stormwater outlets along the Adelaide metropolitan coastline. Many of the pollutants such as detergents, fertilisers, litter and animal poo can impact on the plants and animals that make their home in the sand dunes.

## Plant escapees



Weeds and other plants can escape from household gardens. These plants compete with native species, do not provide good food or shelter for native animals and are less effective at trapping sand.

## Development



Marinas and other coastal developments can interfere with the seasonal movement of sand along the coastline, thereby inhibiting the growth of sand dunes.

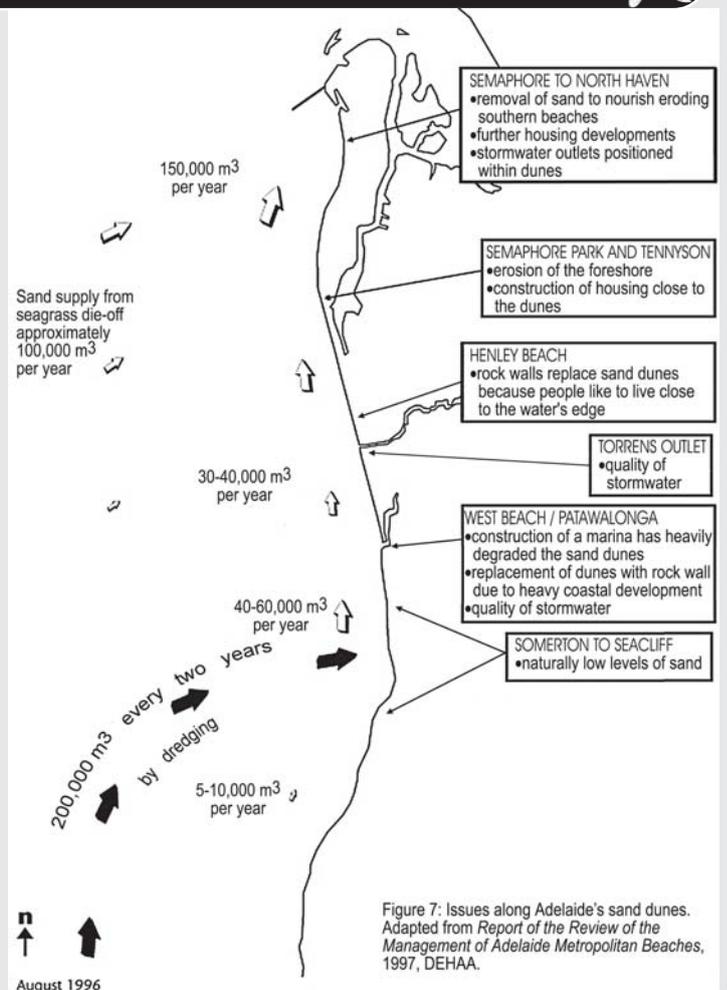


Figure 7: Issues along Adelaide's sand dunes. Adapted from Report of the Review of the Management of Adelaide Metropolitan Beaches, 1997, DEHAA.

