

Changing Sea Levels

How did the soils come to be where they are?

The coastline of Western Australia originated (began) millions of years ago when Australia split off from the ancient continent of Gondwana. At this time the sea came right up to the base of the Darling Ranges forming the first coastline. Over thousands of years sediments from rivers and the sea built up to form the present Swan Coastal Plain.

Just before the last ice age 130,000 years ago (that's a lot of sleeps!), the Swan Coastal Plain was narrower than it is today. The sea level was about the same as present levels, but what was very different was that the coast was about 10 kilometres further inland than it is today!

The grey soils which make up the Bassendean sands were once the sandunes which made up this coastline. Have a look at a map of the metropolitan area which shows all of the suburbs and see which suburbs would have once been on the coast and which ones would have been under water at this time. Rottnest Island was not an island back then but a coral reef about 30 kilometres offshore.

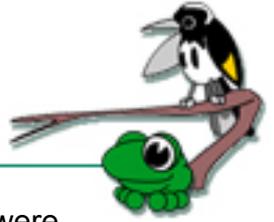
An ice age then set in causing the ice caps to get bigger as the water froze. This caused the sea level to drop and moved the coastline west as land was no longer underwater and became exposed.

The sea level did not drop overnight and as the level fluctuated (changed) a series of dunes running parallel to the coast were left behind and marked the various shorelines as the sea retreated. These dunes created the Karrakatta and Cottesloe soils we know of today.

About 18,000 years ago the sea level was an amazing 130 metres below what it is at present and Perth's coastline was 40 kilometres further out to sea than it is today. This meant that Rottnest Island became part of the mainland.

The last ice age ended about 100,000 years ago. Rising temperatures on earth led to the ice caps melting causing the sea level to rise until it reached its present height about 6,500 years ago.

As the sea level rose sand was swept across the newly drowned coastal plain and washed ashore. These sands eventually formed the sand dunes we know as the Quindalup Dunes. These make up most of our shoreline today.



While the sea level was rising and falling, the rocks of the Darling Ranges were being eroded by the forces of nature. This eroded material was transported by a series of rivers and deposited (left behind) along the base of the Darling Ranges and on the eastern side of the Swan Coastal Plain.

These heavier soils form what we know as the alluvial (al-oo-vee-al) soils which means that they have been deposited by rivers.