



SOS Fact Sheet

BEACHES

Life's a beach

Australia has the best beaches in the world (trust me!) and there are many different types. The features on beaches such as sand bars, rips, berms and cusps can change shape almost on a daily basis. Know your beach, know when it's safe to swim and get out there and have fun!

Why are beaches different?

Beaches are accumulations of sediment deposited by waves, but the type of sediment is very important in determining what the beach looks like. Beaches may be made of fine sand, coarse sand, or even gravel. The general rule is that the smaller the size of the sand, the flatter the beach.

Waves are also very important. Some areas naturally get larger waves and some areas are more protected and get smaller waves. Another rule is that big waves move sand offshore and small waves bring sand back to the beach. Therefore, beaches with bigger waves tend to be wide and flat and protected beaches tend to be narrow and steep.

Tides can also change what a beach looks like. Beaches that have a large tide range (e.g. the difference between high and low tide is more than 4 m) are generally wide and flat with no sand bars and channels. Beaches that have a small tide range (less than 2 m) are narrower, steeper and have sand bars and rips.

Finally, wind is important too because wind creates sand dunes. Beaches that are wide, have a lot of small sand and consistent wind will always have sand dunes behind them. Narrow beaches with larger sand and less wind have smaller dunes or no dunes at all.



The effects of sediments on beach slope



Large tide ranges create a wide flat beach



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Types of Beaches

Although beaches are different, there are a number of common types of beaches that occur around Australia (and overseas). The most common are:

High-Energy (Dissipative) Beaches

These beaches need to have small sand and large waves and are very wide and flat with large sand dunes behind. They have wide surf zones and water returns seaward as gentle return flow along the whole beach so there are no rips. There may be 1-2 sand bars separated by troughs. They are called dissipative because wave energy is spread out (or dissipated) over a large area. These beaches are very stable and don't change much at all. In Australia they are mostly common in South Australia where the waves are large and the sand is smaller.

Low-Energy (Reflective) Beaches

As the name suggests, these beaches have smaller waves usually because they are protected, but they also need bigger sand (or gravel) which makes them steeper. Therefore they tend to be steep and narrow with no rip currents or sand bars. Waves break by plunging at the shoreline and there are often cusped features on the beach.



Dissipative beach



Reflective beach



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Intermediate (Bar and Rip) Beaches

These beaches have medium sized waves and sand and are dominated by various shapes of sand bars and rip currents. Not only that, they change all the time! Most beaches in NSW are intermediate and depending on wave conditions, they may look like one of the following:



Rhythmic bar and beach



Transverse bar and rip



Longshore bar and trough



Low tide terrace



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Which beaches are most dangerous?

Different beaches have different types of hazards. High-energy dissipative beaches have large waves and very energetic surf zones so you need to be a strong swimmer. Low-energy reflective beaches have a steep beach and a plunging wave shore dump so be careful getting in the water. Intermediate beaches have a bit of both, but also have a lot of **RIP CURRENTS!** The key thing is to know what to look for to identify the type of beach and then assess the conditions on the day.

Fast Facts about Beaches

- There are approximately 17,000 ocean beaches in Australia
- The most common type of beach in NSW is transverse bar rip
- Large waves take sand offshore, small waves bring it back
- The bigger the sand grains, the steeper the beach



*The most common type of beach in NSW
Transverse Bar Rip*

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