

Sandbinders!

Both plants stabilise the sandy coast by trapping wind blown sand between its leaves and around the base of the plant and the long rope-like rhizomes it send out. But which one should we plant?

Marram is an exotic sand-binding plant and dune builder and can be found on nearly every beach in New Zealand.



Pingao is endemic and is one of our major native sand binders. In the South Island Ngai tahu call it pikao

It was introduced about 1900 when people were worried about sand erosion and sand movement. They thought it was harming their productive land.



It's always been here and other coastal species depend on it to form the beach shape that they are adapted for.

People caused the erosion in the first place. They burnt the forest behind the dunes and later let stock wander and graze on the native dune systems.



Pingao has been burnt by people and eaten by stock, possums and rabbits.

Marram is a silvery green coloured perennial grass, native to the coast of Europe. It grows really well in NZ because it's a bit cooler than the coast of Europe .



Pingao looks like a brilliant green tussock which turns a golden yellow or fiery orange at the ends. The leaves turn a golden yellow when dried which is why Maori weavers prize them.

When the sand buries marram it helps the plant grow. Without a covering of sand they don't grow well and can die.



To grow well, pingao needs to be buried by sand too. Without it pingao dies.

Marram's leaf structure and arrangement allow it to trap sand better than pingao. Marram likes to be buried quickly.



When marram is around pingao doesn't get enough sand. It goes moribund, which means it doesn't grow and dies off.

Marram grass dominates areas that gather sand rapidly. In these places you see mostly marram and hardly any native plants.



Pingao is left to grow on slow burying areas like those with coarser particles that are more difficult for the wind to move, or beaches that get less wind.

Marram grass usually forms taller steeper dunes covered in marram plants and very few, if any native plants.



Pingao dunes are usually low, undulating active dunes, allowing continuous sand movement around the plants. Pingao needs that to survive.

Marram grasses produce seeds but reproduce mainly with vegetative rhizomes. These rhizomes are tough and can break off in a storm and then grow in new areas. They can even lie under seawater and later grow.



Pingao reproduces through seeds and long rope like rhizomes too. Like marram the rhizomes need water. Seeds depend on the wind for short distance dispersal and the sea for longer distances.