

Vehicles on Rodney District Beaches



Summary Factsheet



Photo: Rodney District Council

Rodney District has over 1000km of stunning coastline, from the wild surf of the west coast to the more urbanised and calmer waters of the east. Our beaches offer a great range of recreational opportunities including year-round fishing, surfing, windsurfing, kite sailing, picnicking, nature watching and family activities.

Rodney District Council along with other agencies is responsible for managing the access to, and the protection of, our coastal reserves and beaches. Planning and consultation work with Rodney communities shows that people in our District want to maintain and enhance our beaches for environmental and recreational benefits.

The District's population has increased steadily over the past 10 years. This has meant more and more people visiting the beaches. The types of activities people undertake at the beach has also increased and diversified. The Council currently receives requests for

vehicle access to beaches for many recreational pursuits (such as fishing club activities) as well as commercial activities (such as filming advertisements and large scale sporting events). Whilst some of these activities do not have negative impacts, others do. To make sure we can maintain these environments for everyone to enjoy, the Council and user groups need to make decisions about which activities are suitable for the beach environments we have and where and when they will have the least impact.

What is so important about beaches and dunes?

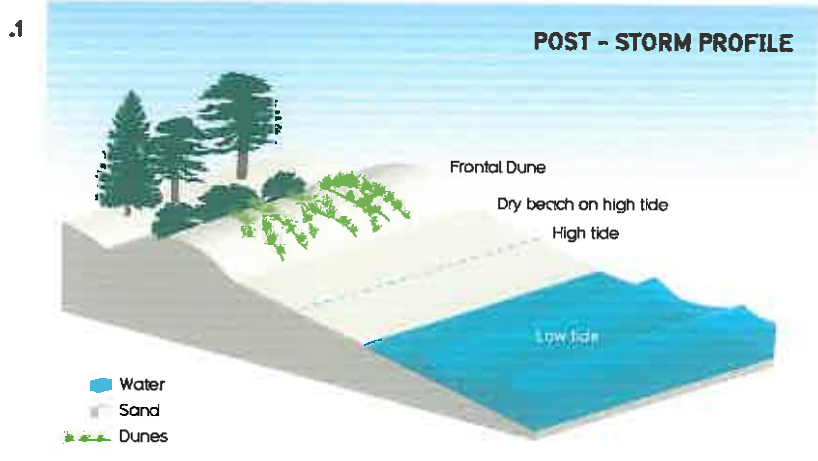
A total beach system includes the back-dunes (closest inland), foredunes (facing the sea) and the sand areas that extend into the sea often several hundred meters offshore. The system is dynamic and constantly changing. Over time and during storms, sand is moved around the system.

Sand dunes are a natural buffer between land and sea. During storms, the waves breaking on the beach move sand from the dunes out to sea to form a bar or pile of submerged sand. This bar changes the wave action, effectively making waves break earlier which

lessens the impact of the waves onshore. In calmer periods the sand is carried by the waves back onshore to rebuild the beach.

Frontal dunes (closest to the sea) are formed when dry sand is blown up the beach and trapped by sand binding plants. Dunes naturally build up above the height of where the waves break on the beach - building a natural barrier. When the plants are damaged, sand is not trapped and dunes do not rebuild. This can cause sand to blow inland onto roads and properties.

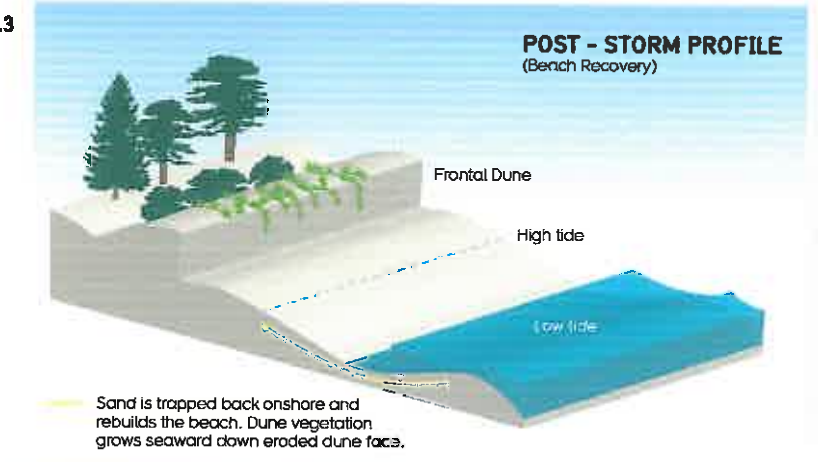




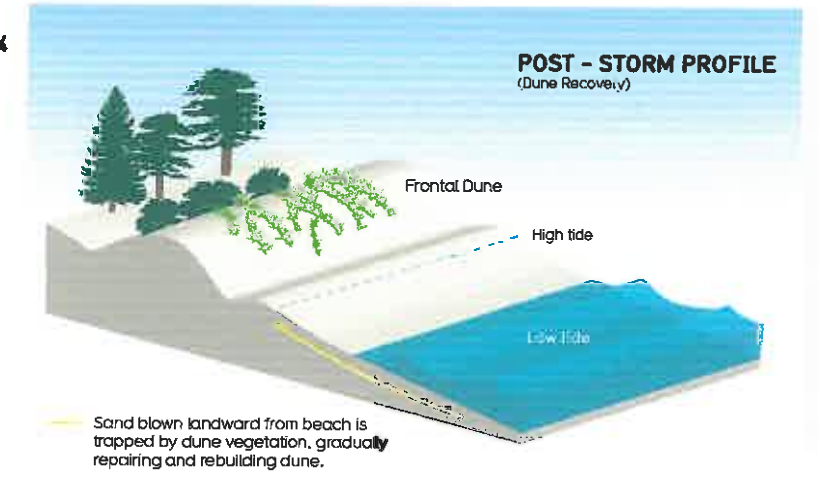
During periods of prolonged settled weather, sand builds up on the visible part of the beach and the dunes.



During storms, waves erode the beach and the most seaward dune. Eroded sand is deposited offshore where it forms a bar that helps to dissipate the high storm wave energy



After a storm, calmer wave action moves sand back to the shore, slowly rebuilding the beach.



As the beach recovers, dry sand is blown landward and trapped by sand binding plants, rebuilding and recovering the eroded dune.

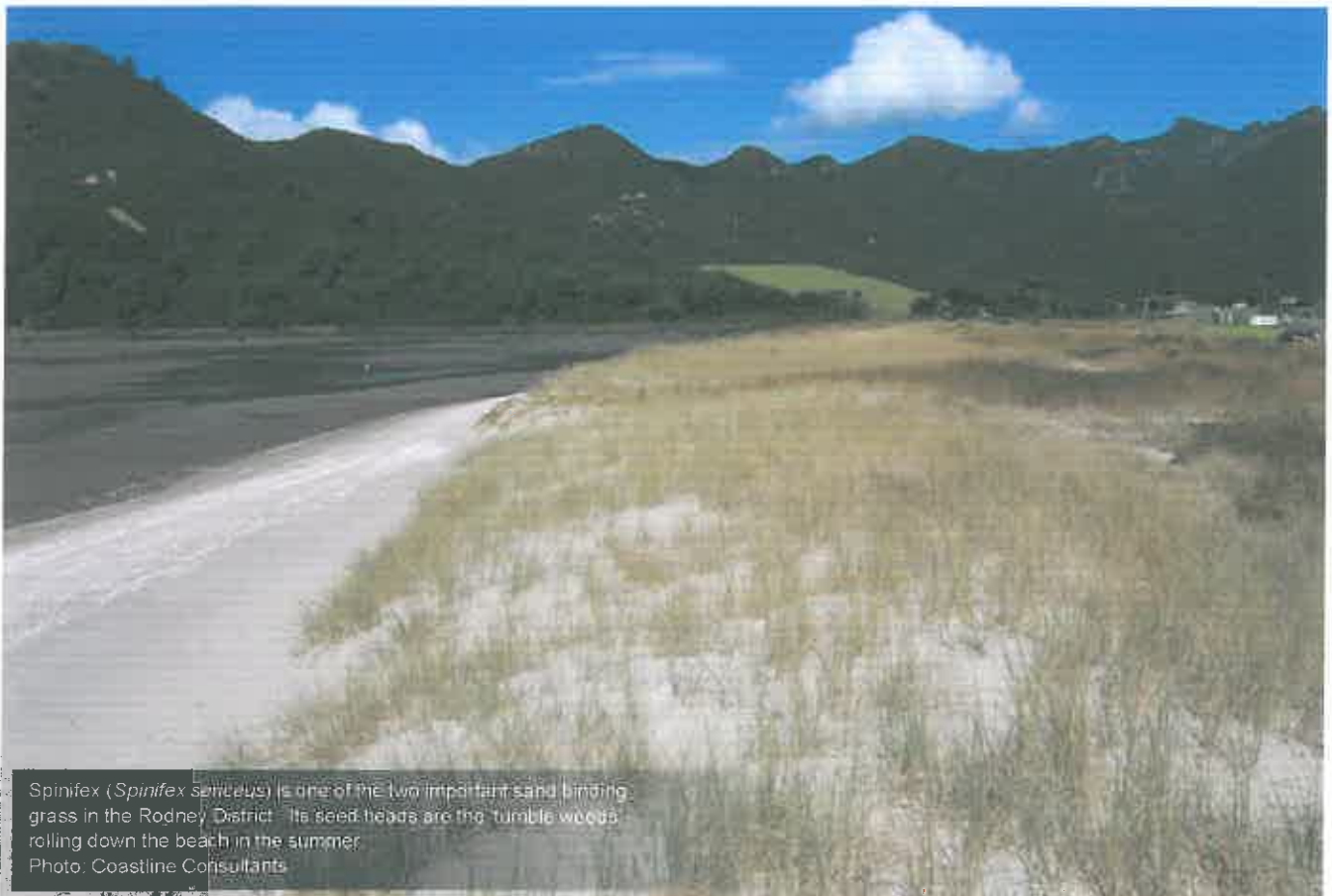
Diagram courtesy of
Coastline Consultants

How do plants build dunes?

Sand binding grasses slow the wind speed near the ground which causes wind blown sand to drop and effectively build up the dunes. The plants then grow through the sand protecting it from being blown away. Whilst dunes can erode very quickly, building them back up is a slow process. Some plants are better than others for trapping or 'binding sand'. In New Zealand the best plants are our native sand binding grasses which are naturally adapted to dune environments. These unique grasses can cope with salt spray, being buried or undermined, low moisture and nutrient levels, extreme temperatures and living in loose sand.



Pingao (*Desmoschoenus spiralis*) is an important native sand binding plant found only in New Zealand
Photo: Coastline Consultants



Spinifex (*Spinifex sericeus*) is one of the two important sand binding grass in the Rodney District. Its seed heads are the 'tumble weeds' rolling down the beach in the summer.
Photo: Coastline Consultants

What other species live at the beach?

Beaches in the Rodney District are home to many species of bird, insect and shellfish, some of which are rare and endangered. The Omaha Reserve, for example, is home to the endangered New Zealand dotterel. Pakiri Beach is home to the fairy tern or tara iti – New Zealand's rarest bird with a total population of less than 50 birds.

Adult fairy tern, or tara iti, feeding a juvenile at Pakiri beach 2007. The fairy tern, which nests on beaches, is New Zealand most endangered bird.
Photo: Department of Conservation



The endangered NZ dotterel nest on beaches in the Rodney District. Dotterel nests are found on the beach around the high tide mark.
Photo: Coastline Consultants



What impacts do vehicles have on beaches?

Vehicle use on beaches has been studied around the world and in New Zealand. There are three key impacts of vehicle use on beaches.

1. Vehicles can destroy sand binding plants and change their growing conditions

Driving over sand dune plants can destroy them and lower their growth rates by breaking off stems, crush seedlings and damaging underground roots. This damage can be caused by two or four wheel drive vehicles.

Vehicles also compact the sand and soils which changes the conditions needed for sand binding grasses to grow. For example compaction can increase soil density, temperature and wind speed close to the ground.

The loss of plant cover, as well as the physical changes to the sands and soils, can make dunes more vulnerable to wind erosion and 'blow-outs' – where the dune gives way and sand is blown inland. Driving on dunes can also change the profile or shape of the dunes, creating wind funnels and making the dunes more vulnerable to erosion during storm events.



Vehicles destroy vegetation on dunes often exposing them to higher erosion rates. Photo from Te Arai beach.
Photo: Rodney District Council

2. Vehicles can destroy or reduce the numbers of birds, shellfish and other species

Vehicles can destroy or change the growing conditions of plants and animals, disturb wildlife (such as nesting birds and shellfish) and introduce weeds and pests to beach environments.

Species that live or feed in the direct path of vehicles are more vulnerable, such as nesting birds or skinks. Some species of shellfish may be able to withstand vehicle impact if they are buried in compacted soils (those closest to the sea). However, after a vehicle has driven in these areas, the beach sand is semi liquefied and shellfish can float to the surface. This makes them more vulnerable to predators (such as gulls). Sand dunes, as well as any beach area where there are important species such as dotterels or young shellfish, are particularly fragile to vehicle use.

3. Vehicle use causes conflict between beach users

In the Rodney District, conflicts between people driving vehicles on beaches and other beach users, is one of the major issues for beach access management. Complaints to Council include: instances of vehicles driving between pedestrians, vehicles crossing over dunes, dangerous driving, creation of tracks and illegal access ways, noise, rubbish, conservation issues and overall loss of beach experience.

Ensuring the safety of all beach users is a high priority for the Rodney District Council.



Multiple vehicle tracks on a West Coast beach. The number of vehicles using West Coast beaches often leads to congestion and safety issues. This photo shows an example of the number of tire tracks in one tide change.
Photo: Coastline Consultants



Vehicle tracks through west coast dunes.
Photo: Coastline Consultants

What are the management options for vehicle use?

A range of management options are being used around the world and in New Zealand to manage vehicles on beaches. There are several statutory documents and policies that guide how the Rodney District Council should manage its beaches. There are also numerous agencies, groups and residents with an interest in how we look after our beaches. Some of the options available to the Council are:

- Working with 4WD clubs to develop a 'best practice' set of resources
- Prohibiting vehicles from sensitive areas
- Maintaining controlled access tracks only
- Creating a permitting system
- Creating a priority system of use

The Council is interested in working with the District's communities to make sure we protect our valuable beach resources for everyone.

This will mean making decisions about where, when, and for what reasons, vehicles can access our beaches.

When vehicle use has (or promotes) adverse impacts on beaches, access may be restricted.