



# Coastal projects

Action projects that restore, celebrate and protect coastal areas

Quality for Life



greater WELLINGTON  
THE REGIONAL COUNCIL

Environment

This booklet offers practical advice on action projects that help restore or protect the biodiversity of coastal areas near your school.

By taking part in coastal revegetation projects your school can:

- create healthier coastal ecosystems with increased biodiversity
- get students personally involved in caring for the coastal region near school or where they live
- help reduce risks of coastal erosion in areas with sand dunes
- help students, parents and the local community learn about the impacts of humans on the region's coastline.

Environmental projects are excellent teaching tools that can enhance learning across the curriculum. More information about curriculum integration can be found at the end of this booklet.

The Greater Wellington Action Crew can advise you and your class on where and how to revegetate coastal areas, as well as on other coastal projects.

This booklet is one of a series for teachers to help students do practical and effective action projects as part of *Take Action for Water*.

Teachers can use the action projects described in the series to tailor *Take Action* to the school's environmental interests and circumstances. This series can also be used to support long term environmental education in schools.



## Take action!

### Why plant dunes?

The Wellington region has a long and varied coastline where rivers and streams meet the sea. The coast provides habitat for many diverse forms of life; it is an area for food collection and recreation, and is often of cultural significance.

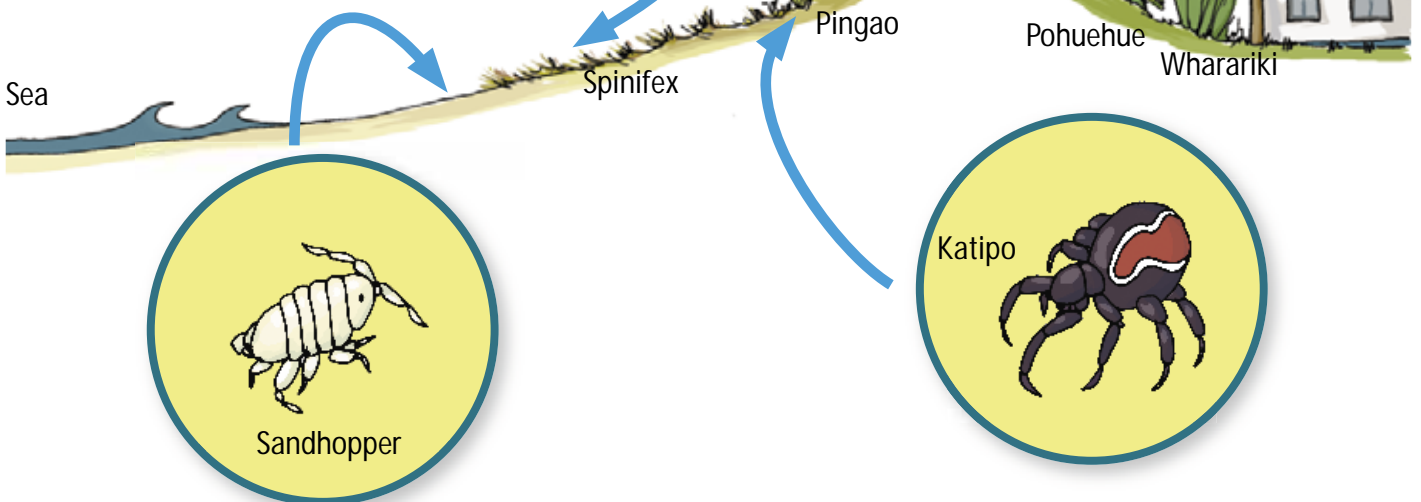
Dune systems protect the land against erosion and flooding, filter groundwater, and provide a habitat for specially adapted plants and animals. They are threatened most by human activity. Waterfront development, vehicles and erosion caused by people and stock can contribute to dunes becoming less stable and ceasing to perform their valuable ecological functions.

### Rare native coastal plants

Introduced plants like marram grass and south african iceplant are pushing out our native plants. Some of these native plants are now becoming rare.

### Repairing dunes

Our native sand-binding dune grasses (e.g. spinifex and pingao) help dunes to rebuild after they have been damaged by storms or people. They do this by catching sand as it blows over the leaves and then growing up through it.



### Native coastal creatures

We have many unique native creatures in New Zealand that live in or around our native coastal plants. These include birds, lizards, butterflies, spiders, and many different kinds of insects and other small creatures. Some are now becoming very rare.

### Stable dunes

Introduced marram grass builds tall clumpy dunes that collapse easily and then get blown away by the wind. Our native plants build wider, flatter dunes that don't collapse easily.

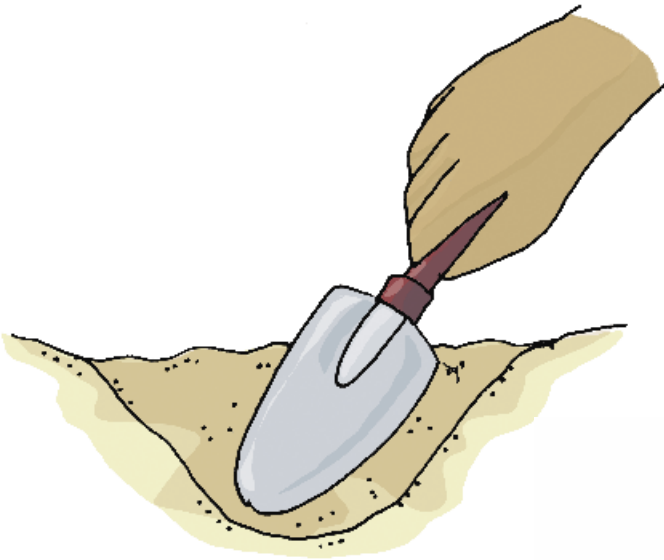
### Protecting houses and roads

Sand dunes protect the land behind them from being flooded by seawater when there is a storm. Dune plants build the sand dunes and stop them blowing away in the wind. Sand dunes often protect roads and houses built behind them.

## How to plant native species on sand dunes.

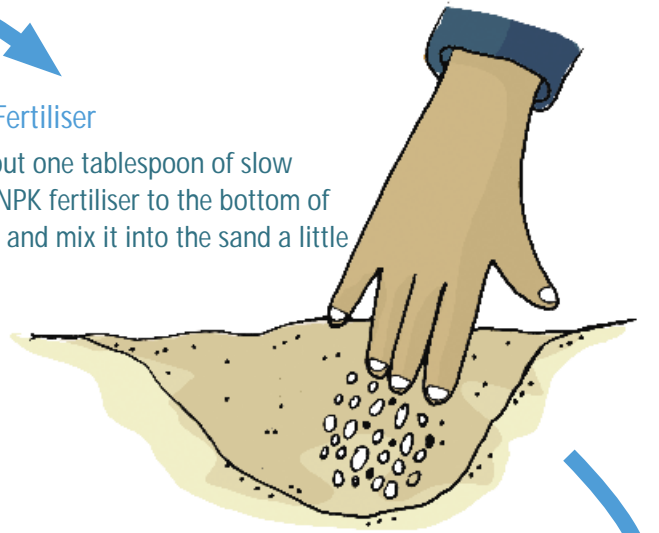
### 1. Dig a hole

Dig a hole deep enough to cover the plant about 10cm above the level of the potting mix in the pot. Check that your hole is the right size by putting the plant in it to see where the level of the sand will come up to on the leaves.



### 2. Add Fertiliser

Add about one tablespoon of slow release NPK fertiliser to the bottom of the hole and mix it into the sand a little bit.



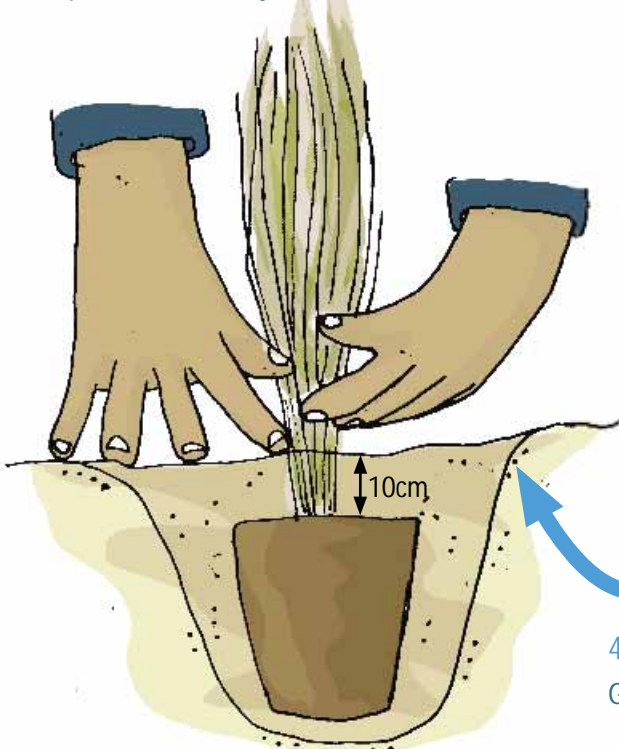
### 3. Take off the bag

Carefully hold the plant upside down over the hole and pull the bag off. If you don't rip the bag it can be used again.



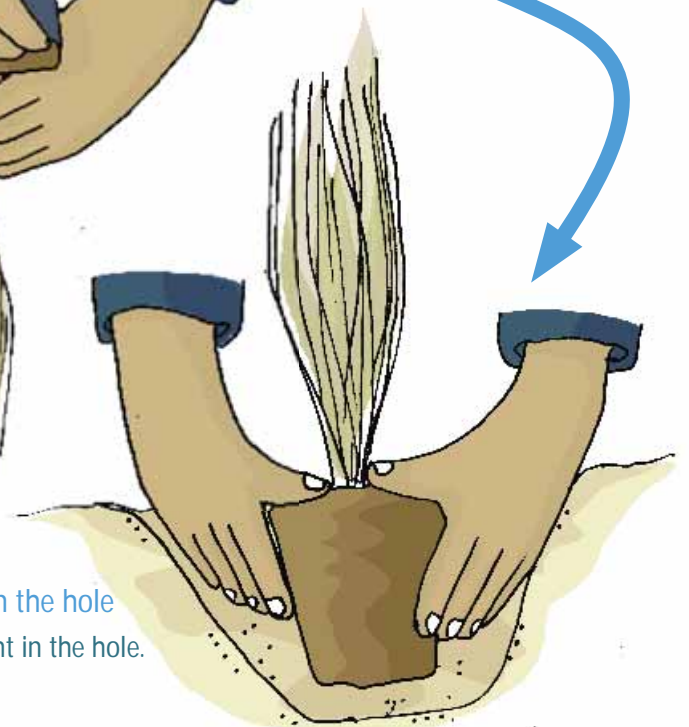
### 5. Push sand around the plant

Carefully push the sand around the plant and pat it down with your hands.



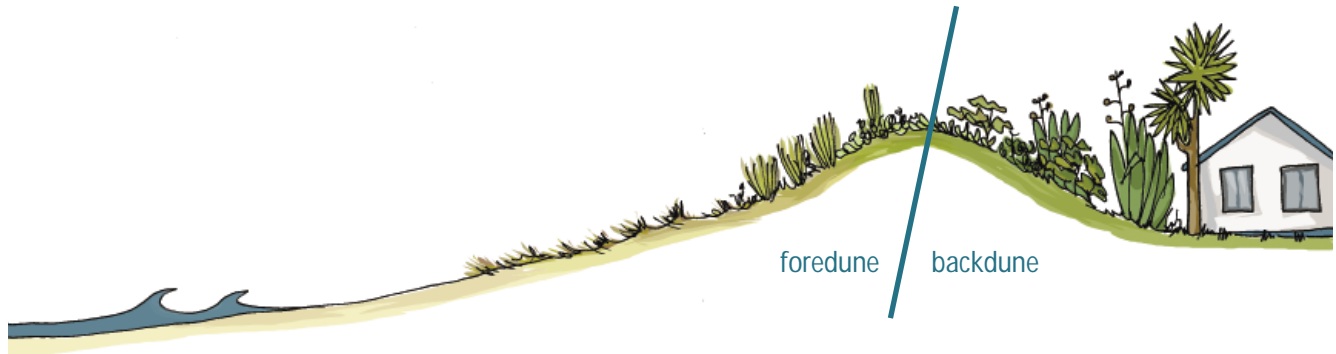
### 4. Put the plant in the hole

Gently put the plant in the hole.



## What to plant on sand dunes

The plants shown here occur naturally on **sand dunes** in our region. If you want to plant on a pebble beach, in an estuary or in coastal areas other than sand dunes, talk to the Action Crew about the best plants to use.



Different plants grow on different areas of the sand dune. Plants on the **front of the foredune** need to have special features such as long, thin, grassy leaves so that they can survive strong, dry winds, salt spray and sandblasting.

Plants on the **back of the foredune** don't have to cope with so much sand-blasting, but still need to stay close to the ground to survive the strong winds and salt spray.

Plants further back on the **backdune** can grow taller because they are sheltered by the foredune.

We've listed a few of the many different coastal plants that you can use. The Action Crew can help you work out which plants would be good for your site, and how many you will need.

### Foredune plants

There are three foredune grasses that grow naturally in the Wellington region. These plants are called sand-binders because they catch wind blown sand with their leaves as it moves over them. The sand builds up around the plants and the plants grow through it. In this way they stabilise the dune, and prevent the sand from being blown away.

Hinarepe  
Sand tussock  
*Austrofestuca littoralis*



Pingao  
Golden sand sedge  
*Desmoschoenus spiralis*



Kowhangatara  
Silvery sand grass  
*Spinifex sericeus*



## Plants for behind the foredune

Waiuatua  
Sea spurge  
*Euphorbia glauca*



Horokaka  
NZ iceplant  
*Disphyma australe*



Tatarakeke  
Sand coprosma  
*Coprosma acerosa*



Pinatoro  
Native daphne  
*Pimelea prostrata*



Mikoikoi  
Coastal iris  
*Libertia peregrinans*



Nihinihi  
Shore bindweed  
*Calystegia soldanella*



Coastal koromiko  
*Hebe elliptica*



Pohuehue  
Wire Vine  
*Muehlenbeckia complexa*



Toetoe  
*Cortaderia splendens*



Wharariki  
Mountain flax  
*Phormium cookianum*



Manuka  
Teatree  
*Leptospermum scoparium*



Coastal tree daisy  
*Olearia solandri*



## Things to consider

### Who to ask for help

Beachcare and Coastcare groups are groups of local people who get together to try and help their coastal environment. They often do many of the action projects described in this booklet, including revegetating dunes and putting up walkways, fences and signs. Their experience and local knowledge can be invaluable. The Action Crew can tell you if there are groups working in your area. You will also need to ask your local Council who owns the land on which you want to work.

### When to Plant

Winter is the best time of the year to plant because:

- there is lots of rain to water the plants.
- the plants have stopped growing and are dormant, so they are not as prone to the stress brought on by planting.

January

February

March

April

May

June

July

August

September

October

November

December

Red	Worst months for planting. Don't plant during this time.
Orange	Planting can be done in April, the beginning of May, September and the beginning of October only if: <ul style="list-style-type: none"> <li>- it has been an unusually wet month, or</li> <li>- you are able to water the plants regularly.</li> </ul>
Green	Best months for planting. Plant during this time

### Where to get coastal sand dune plants

For information on where to get suitable plants for coastal plantings please call the Action Crew on 04 384 5708. Other people who could help include your local Council and the Department of Conservation.

### Protecting your new plantings

Coastal plants are easily crushed or destroyed by people walking on them. You can avoid this by using fences, walkways and signs. Different types and combinations of these are good for different areas, so talk to the Action Crew about the best options for your site.

#### Did you know?

Maori weavers value pingao leaves because of their beautiful colour. They can be woven into many different things including tukutuku panels (panels for inside Marae), kete (kits), kakahu (cloaks), whariki (mats), potae (hats) and tatua (ornamental belts).



This is a board and chain sand-ladder walkway.



This fence is protecting new sand dune plantings. There are many different types of fence to choose from.



This sign is telling people why they should use the walkway. Signs designed for sand dunes are described on page 8.

Photos: Environment Bay of Plenty

## Coastal plantings checklist

To organise before the planting day:

- Decide when and where you will plant. You might need to make sure you plant at low tide. A planting plan can be drawn up in advance with the Action Crew.
- Ask if the Action Crew can be there to show you what to plant where. It is best to provide plenty of notice to make sure they are available.
- Decide on a postponement date in case of bad weather, and work out how you will let people know if the day is postponed (including adult helpers, journalists and the Action Crew).
- Work out how you are going to stop people getting hurt during the planting day (e.g. warning them about hazards like nearby roads and teaching them how to use fertiliser safely).
- Write permission slips to send home to the parents of students doing the planting.
- Ask parents or adults that you trust to come and help on the day (You may suggest a 6:1 student to adult ratio).
- Ask journalists from the local community newspaper if they want to write about your action project and take photos.
- Work out who's going to look after the plants when you are finished.
- Get together the equipment and materials you need (see list below). The Action Crew might be able to lend you some or all of this equipment.
- Organise who will collect the equipment, deliver it and return it at the end of the day.

## Equipment and materials to take to the planting day:

- plants and fertiliser
- spades or trowels
- first aid kit (and someone who knows how to use it)
- camera and film (and someone to take photos).

## During the planting day:

- postpone the planting day if it is cold or raining heavily
- don't forget to tell people how to keep themselves safe and have lots of fun!

## After the planting day:

- say a big thank you to everyone for coming along and helping out at your planting day
- give yourself a big pat on the back – you deserve it!

# Other coastal project ideas

## Beach clean ups

A beach clean up makes a worthwhile action project. Litter on beaches arrives through the stormwater system, washes up from the sea, or gets blown there in the wind. Litter can kill native marine species and birds that swallow it or get caught up in it. You can arrange to do a beach clean up as an action project. More information on how to do a beach clean up is available from Clean Up New Zealand (0800 315 000). Your local Council may be able to supply rubbish bags and gloves, and help remove any waste that you collect.



## School coastal festivals

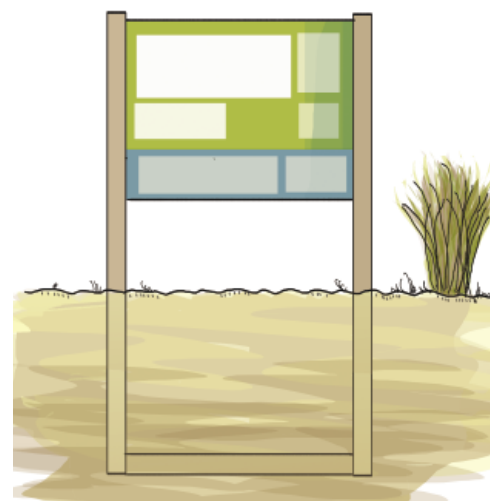
School festivals with a coastal theme can be a lot of fun and can be used to raise money for the school or for action projects on the coast. They also provide students with the opportunity to educate others about how they can reduce their impact on the coast.

You might like to give an existing school fair or festival a coastal theme and get students to organise appropriate events and props to showcase their action projects.

For more information on how to organise a school festival with an environmental theme, see 'Showcasing' in the 'Telling others all about it' action project booklet.

## Signs

Your students may want to use signs to tell others about the Coast Care Code. Before you make your sign, you will need permission to put it up from your local Council or landowner.



Signs on sand and pebble beaches can easily fall over or be ripped out, so follow this design which has an extra piece of wood between the main posts to make sure your sign stays stable and upright.



# Support material

## The Coast Care Code

The Coast Care Code tells people how to reduce their impacts on the coastal environment. There are different Coast Care Codes for different coastal environments. We have included Coast Care Codes for two different coastal environments as photocopiable support material for students to work from. If you have a coastal environment that is not on this list (e.g. a pebble beach, like the one at Makara), contact the Action Crew for ideas.

### Sandy beaches with dunes:

- take only memories and photos, leave only footprints
- use dune walkways - walking on coastal plants kills them and without them the wind can blow the sand away
- play in the waves, not in the dunes – sliding or digging in sand dunes kills dune plants
- vehicles belong on roads, not dunes – bikes and cars can squash dune plants and disturb birds that are feeding, breeding or resting
- control your dog - even birds that escape dogs use up energy that they need to survive
- pick up litter – it can kill birds and sea creatures.

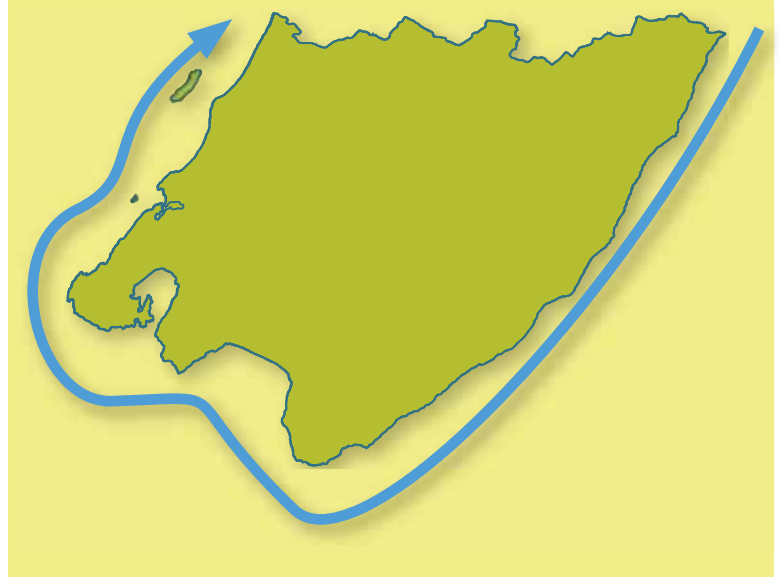
### Rocky beaches with rock pools:

- take only memories and photos, leave only footprints
- look at but don't touch, sea creatures in rock pools and on the beach
- if you turn over a rock to look at the animals, remember to put it back again or the animals will dry out and die in the sun
- don't pull seaweed off the rocks – it provides homes for sea creatures
- be careful not to disturb feeding, resting and nesting birds
- pick up litter – it can kill birds and sea creatures.

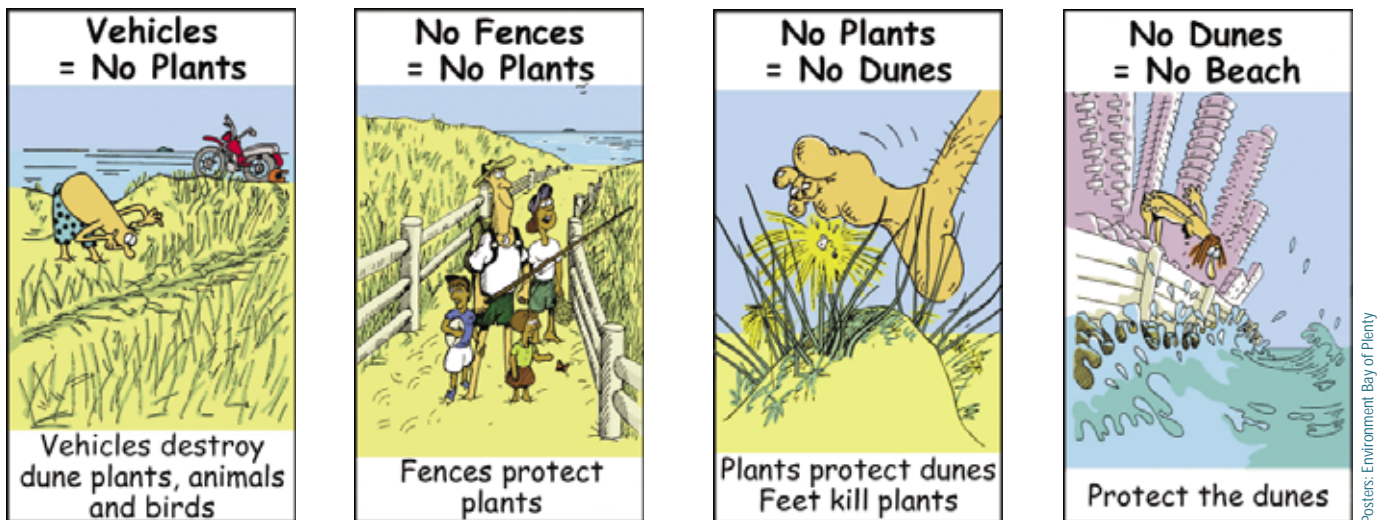
### Did you know?

NZ has about 14,000km of coastline.

There is 497km of coastline in the Wellington region.



Here is an example of how other people have tried to tell others about the Coast Care Code. These posters were produced by Environment Bay of Plenty.



## Keeping students safe at the beach

Many action projects can be undertaken at the beach, yet this can be a dangerous environment. Always have a health and safety plan that identifies the risks that are present and then avoid, isolate, and minimise those risks. Here are some important tips to help keep everyone safe at the beach:

### Weather report

Check the weather forecast for the day, and ensure everyone is dressed appropriately. Sunscreen and hats may be important as well as wet weather clothing. Be prepared to postpone your event.

### Check the tides

Some coastal areas can quickly become covered in water as the tide comes in. This can cut off your route back to the shore. The best time to work on the beach is when the tide is going out (between high tide and low tide).

### Never go alone

One adult to six children is the advised ratio for working with students near water. Waves are unpredictable and people can be swept away, so adult helpers and students need to keep a close eye on the water, especially during bad weather. Nominate one person to watch the water at all times.

### Don't touch sea creatures

Some sea creatures will die if you touch them. Others like jellyfish, crabs and sea urchins can hurt you if you touch them. In particular, jellyfish stings can be very serious and sometimes even kill people, so never touch dead jellyfish on the beach.

### Did you know?

In NZ, no one lives more than 130km from the sea.

### Stay away from coastal banks and cliffs

Stay away from the edge of coastal banks and cliffs as they can be unstable and collapse. Rockfalls do occasionally happen so do not sit under coastal banks or cliffs.

### Don't dig or tunnel in the sand dunes

Sand dunes (especially tall, steep ones) can sometimes collapse on top of people who are trying to tunnel or dig into them. Digging and tunnelling can also destroy dune plants and drive away dune creatures.

### Make sure there is space between people with equipment

Care must be taken to ensure people keep well away from moving tools. If the planting is going to take more than an hour, encourage people to stop for frequent breaks.

### Beach clean up safety

When doing a beach clean up you must plan how to deal with animal waste, syringes, broken glass and slippery rocks.

## Curriculum integration

You can use environmental projects such as these to enhance learning across the curriculum. Please refer to p6 of the *Take Action for Water* teachers' book for information relating to curriculum links and learning opportunities for students doing action projects.

The curriculum links below are a few of the more specific achievement objectives that relate to coastal action projects:

### Social studies

#### Place and environment

- Level 3 – students will understand how different groups view and use places and the environment.

### Science

#### Making sense of planet earth and beyond

- Level 3 – students can justify their personal involvement in a school or class-initiated local environmental project.
- Level 4 – students can investigate a local environmental issue and explain the reasons for the community's involvement.

### Technology

#### Technological capability

- Level 3 – students explore possible solutions and strategies, and select appropriate options, justifying their decisions.

Water, air, earth and energy: elements in Greater Wellington's logo combine to create and sustain life. Greater Wellington promotes **Quality for Life** by ensuring our environment is protected while meeting the economic, cultural and social needs of the community.

Greater Wellington  
Regional Council  
Wellington Office  
P O Box 11 646  
T 04 384 5708  
F 04 385 6960  
W [www.gw.govt.nz](http://www.gw.govt.nz)

Photos: © Dave Hansford/Origin Natural History; Environment Bay of Plenty; Department of Conservation.

Greater Wellington is the promotional name of the Wellington Regional Council  
Published June 2004  
GW/EC-G-04/32