

**Activity Title:**

# Introduced dune plants and weeds

## Focusing questions

What introduced plants pose a threat to the dunes?

How are introduced plants different to native plants?

Why are introduced plants a problem?

## Resources required

- PowerPoint presentation – 2b Introduced dune plants and weeds
- Question and answer cards – Introduced dune plant matching cards – page 65
- Copying: copy question and answer sheets and cut out individual cards. Have enough sets for one per buddy pair.

## Prior learning

2a Native dune plants – what lives where and why?

## Method

- 1 The objective of this activity is to look at exotic plants that have been introduced and can affect the sand dune community: What are they? How are these introduced plants different to native plants? And why are introduced plants a problem?
- 2 Use the PowerPoint presentation **2b Introduced dune plants and weeds**.
- 3 Divide students into pairs. Each pair has a set of question and answer cards. Match the correct question card with its matching answer card.
- 4 Review correct answers to the question and answer exercise (an original uncut version of the question and answer card sheets will give you the correct answers).
- 5 Questions to discuss and reflect upon:
  - Why did people bring introduced plants to New Zealand?
  - What do we now know about some of the effects of introducing exotic plants to New Zealand?
  - Do you think pretty exotic plants such as lupins should be eradicated from the dunes? Why?

**Activity Title:**

Introduced dune plants and weeds

**Environmental Education Aspect:**

About the environment

**Environmental Education Concept:**

- Biodiversity

**Curriculum Links:**

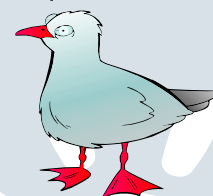
- Social Science
- Science

**Suggested Curriculum Level:**

Any

**SUSTAINABILITY TIP!**

Laminate question and answer cards for future re-use.



## Possible next steps

- 2e Plants of the local sand dune community – a field activity exploring what plants live on the local dunes and on which part of the dunes different plants live. Students could draw the different plant species onto the Beach diagram.
- Investigate weeds further using the Weedbusters Education Resource Kit. You can obtain a copy of this education resource from Bay of Plenty Regional Council or download it from the Bay of Plenty Regional Council website – <http://www.boprc.govt.nz>
- Get in touch with a local care group and explore local case studies, visiting speakers and potential field visits.
- Explore the following websites:
  - New Zealand Plant Conservation Network website: <http://www.nzpcn.org.nz>
  - Weedbusters website: <http://www.weedbusters.org.nz>

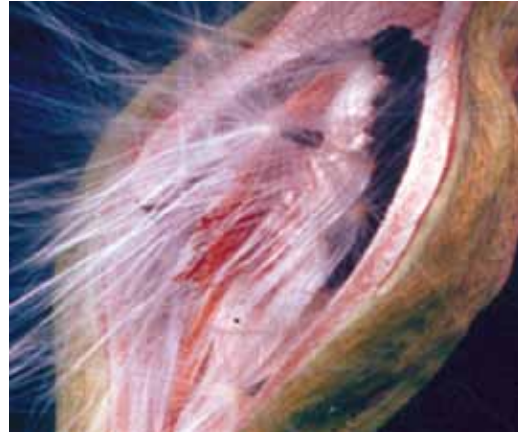
## Question and Answer Cards

# Introduced dune plants matching cards

Q CARD

What does the climbing vine moth plant (*Araujia sericifera*) look like?

A CARD



Q CARD

This is an invasive grass, with long runners that can smother native plants. Often found in areas extensively modified by humans. Control is desirable because it does not trap blowing sand as effectively as the native species. Salt-water tolerance is less than native front dune plants. What does the weed kikuyu grass or *Pennisetum clandestinum* look like?

A CARD



Q CARD

These plants are both difficult to control due to the many below ground tubers. Both also produce small red berries containing up to nine seeds each, which are spread by birds. They should be handled with care as they contain many hidden thorns. Apart from human harm, smothering and displacement of native species are the reasons for control being necessary. Herbicide spraying is the current practice for removal. What does the vine weed known as bushy asparagus (*Asparagus densiflorus*; *Smilax*, or *Asparagus asparagoides*) look like?

A CARD



Q CARD

What is this weed and what does it look like?

It is a weed that at the moment is confined to the Tauranga district. Grows vigorously in either sun or shade, on dunes or inland, often overwhelming and destroying neighbouring plants. Easily mistaken for some native species (such as pōhutukawa, *Pittosporum*) due to the variably shaped dark green leaves. Copious seeds are spread by many species of birds.

A CARD

Evergreen buckthorn or *Rhamnus alaternus*



Q CARD

What does pampas grass or *Cortaderia selloana* and *C. jubata* look like?

A CARD



Q CARD

What does evergreen buckthorn or *Rhamnus alaternus* look like?

A CARD



Q CARD

What is the name of this weed?

It grows up to 4m tall. It is now more common than the similar (native) toetoe due to the large volumes of wind dispersed seed. It is a much larger plant than native toetoe, with leaf edges that will cut skin more easily. Herbicide control for this weed is standard practice.

A CARD

Pampas grass or *Cortaderia selloana* and *C. jubata*



Q CARD

What is the name of this weed?

This pretty flowering Californian native was introduced to assist the growth of pine forests, for early control of dune erosion. Because of lack of natural control organisms in NZ it flourished and overwhelmed remaining natives. The natural arrival of a wind-borne fungus (in 1986) caused a significant reduction to populations. Control is important as our native plants maintain the dune buffer in a far superior manner. Hand pulling or swabbing freshly cut stumps with a suitable herbicide are the most effective methods.

A CARD

Lupin or *Lupinus arboreus*



Q CARD

What does the Japanese spindle tree that grows up to 7m (*Euonymus japonicus*) look like? This evergreen shrub is spreading into dunes from home gardens, by birds spreading the numerous orange coloured fruit. The garden plants often have yellow variegated leaves, but seedlings revert to green. Spread of these shrubs is occurring. Swabbing the freshly cut stump with a suitable herbicide is the most effective method to control it.

A CARD



<p>Q CARD</p> <p>What do we mean when we say a plant is a <b>native plant</b>?</p>	<p>A CARD</p> <p>A plant that is found living naturally in New Zealand. It was not introduced by humans.</p>
<p>Q CARD</p> <p>What is the meaning of <b>endemic species</b>?</p>	<p>A CARD</p> <p>A plant that is native and occurs naturally only in New Zealand.</p>
<p>Q CARD</p> <p>What do we mean when we say a plant is <b>exotic</b> or an <b>introduced species</b>?</p>	<p>A CARD</p> <p>A plant that people have brought to New Zealand. These plants did not originally and naturally live here.</p>
<p>Q CARD</p> <p>If you wanted more information about controlling these weeds who would you contact?</p>	<p>A CARD</p> <p>Your local pest plant officer from Bay of Plenty Regional Council, a district or city council reserves officer or the Department of Conservation.</p>
<p>Q CARD</p> <p>Does marram grass build high or long low lying fore dunes?</p>	<p>A CARD</p> <p>High fore dunes</p>
<p>Q CARD</p> <p>Do native grasses such as pīngao build high or long low lying fore dunes?</p>	<p>A CARD</p> <p>Long low fore dunes</p>



<p>Q CARD</p> <p>How have introduced plants contributed to erosion of the coast and loss of sand dunes?</p>	<p>A CARD</p> <p>These plants are not able to control sand movement as effectively as native dune plants. Storm erosion in some areas (where these plants were introduced) is more problematic.</p>
<p>Q CARD</p> <p>What is the name of an exotic plant that is a grass and sand binding plant that was introduced from Europe?</p>	<p>A CARD</p> <p>Marram grass (<i>Ammophila arenaria</i>)</p>
<p>Q CARD</p> <p>What are introduced plants that threaten our local native plant communities known as?</p>	<p>A CARD</p> <p>Pest plants or WEEDS!</p>
<p>Q CARD</p> <p>What words complete this sentence?          _____ <b>can compete with, and even threaten the _____ of some native species in dunes.</b></p>	<p>A CARD</p> <p>Weeds and survival</p>
<p>Q CARD</p> <p>What weed is considered to have the highest potential for harming native sand dunes?</p>	<p>A CARD</p> <p>Evergreen buckthorn (<i>Rhamnus alaternus</i>)          [2m to 5m]</p>

