



Lesson plan 9

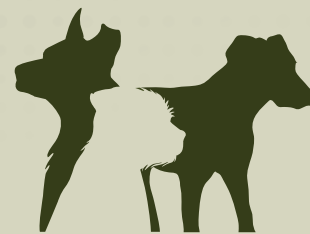
# Paws on Patrol

Wink the spartina grass detection dog



Department of  
Conservation  
*Te Papa Atawhai*

Kiwi  
bank.



CONSERVATION  
**DOGS**  
NEW ZEALAND

## KEY

▶ = links to videos   🔗 = links to websites   🔍 = links to pages within this resource

## Learning intentions

This lesson plan has been developed to support learning about the Conservation Dogs Programme and the invasive weed spartina. It should be completed after viewing ▶ [Paws on Patrol episode 9: John and Wink](#) in the *Fanimals* series.

To learn more about Conservation Dogs, Predator Free 2050, biosecurity and how to take conservation action in your local community, visit 🔗 [www.doc.govt.nz/education-conservation-dogs](http://www.doc.govt.nz/education-conservation-dogs).

Upon completion of this lesson plan, students will be able to understand:

- ▶ the important role Conservation Dogs play in protecting New Zealand's unique biodiversity
- ▶ the features of estuaries in New Zealand and why they are important
- ▶ how spartina grass affects estuaries and our native species.



## Curriculum links

### Achievement objectives

LEVELS 1-4 SCIENCE

**Nature of Science:** Investigating in science, Communicating in science, Understanding about science, Participating and contributing.

**Living World:** Ecology. Recognise (and explain) how living things are suited to their particular habitat and how they respond to environmental changes, both natural and human-induced.

**Science capabilities:** Engage with science.

LEVELS 1-4 SOCIAL STUDIES

Understand how people view and use places differently.

Understand how people make decisions about access to and use of resources.

### Key competencies

- ▶ Thinking.
- ▶ Use of language.
- ▶ Relating to others.
- ▶ Participation and contribution.

## Key vocabulary

**Biodiversity:** The variety of living things in a place. The greater the number of living things, the more 'biodiverse' the place is.

**Biosecurity:** Actions to keep New Zealand free of unwanted organisms (introduced predators, weeds and diseases such as kauri dieback and myrtle rust) and to control, manage or remove them if they arrive in the country.

**Estuary:** A partly enclosed coastal body of shallow water that is affected by the tides and in which the fresh water of a river meets and mixes with the salt water of the sea. Estuaries are important natural resources.


**GPS:** Global Positioning System. This is a radio navigation system that allows users to determine their exact location in all weather conditions and from anywhere in the world.

**Habitat:** The natural home or environment of an animal, plant or other organism.

**Sediment:** Matter that settles to the bottom of a liquid; dregs.

**Weed:** An unwanted plant that is growing in the wrong place. Weeds cause problems because they are hard to kill or spread more quickly than they can be controlled. Invasive weeds are causing major problems in New Zealand, taking over the habitat of native plants.

## Activity ideas




**Activity 1:** Watch  [Paws on Patrol episode 9](#) and have a class discussion to summarise the story. Then watch the video a second time and ask students to think of the three key points in the story. They can then share these points with a buddy and compare ideas. You could ask students the following questions to support the discussion.

- ▶ What characteristics or qualities does Wink have that make him suited to detecting spartina grass?
- ▶ How do trained Conservation Dogs benefit the environment and conservation?
- ▶ What can you do at school or in your own backyard to protect and restore nature?





Wink detecting spartina grass. Photo: Whitebait Media

**Activity 2:** Learn about New Zealand estuaries.

- ▶ Take students through the  [Introducing estuaries](#) slideshow.
- ▶ See if students can recognise estuaries by taking the  [Is this an estuary?](#) quiz on Kahoot or Socrative (to access this and other Socrative games, join Socrative at  <https://socrative.com>).

**Activity 3:** Identify estuaries in your local environment.

- ▶ Ask your students if they know of any estuaries in their local environment. Students can share their prior knowledge and experiences of estuaries through a teaching strategy such as ‘think-pair-share’.
- ▶ As a class, locate a local estuary using DOC’s  [Experiencing estuaries](#) interactive map.
- ▶ You could also locate any estuary restoration projects close to you using DOC’s  [Restoring estuaries](#) interactive map.



Waikanae Estuary. Photo: Nadine Bott

**Activity 4:** Research spartina grass using the links provided in the ‘Supporting resources’ section below. Then test your knowledge by completing the  [What do you know about spartina grass?](#) online quiz.

**Activity 5:** Role play with a partner! Pretend you are a news reporter and you’re interviewing your partner, who is playing the role of a local expert on spartina grass who has discovered an outbreak of the weed in a local estuary. Practise and perform this skit to the class. Alternatively, play ‘hot seating’, where one member of the class is playing the expert at the front and the other students call out questions for them to answer about the scenario. Below are some suggestions for questions that could be asked in the interview or hot seating.


- ▶ What is spartina grass?
- ▶ Is it native to New Zealand?
- ▶ Why is it harmful?
- ▶ Which animals are affected by it?
- ▶ How can we find it?
- ▶ What does it look like?
- ▶ What should we do if we find it?
- ▶ Is it beneficial in any way?
- ▶ What are some other harmful pest plants/weeds in New Zealand?
- ▶ Do you think New Zealand can ever get rid of spartina grass for good?



Spartina, New River Estuary, April 1991. Photo: DOC



## Supporting resources

### Quiz

- ▶  *What do you know about spartina grass?* online quiz. (Note: Suggested answers to this quiz are provided at the end of this lesson plan.)

### Useful links

#### Estuaries


- *Estuaries* webpage:  
 [www.doc.govt.nz/nature/habitats/estuaries](http://www.doc.govt.nz/nature/habitats/estuaries)
- *Protecting our estuaries education resource*:  
 [www.doc.govt.nz/protecting-our-estuaries](http://www.doc.govt.nz/protecting-our-estuaries)  
Use this inquiry unit to learn about, experience and protect our unique estuarine environments.


#### Spartina grass and other invasive weeds

- Spartina factsheet:  [www.doc.govt.nz/education-weeds](http://www.doc.govt.nz/education-weeds)
- Spartina weed information sheet:  
 [www.weedbusters.org.nz/weed-information/weed-list/spartina](http://www.weedbusters.org.nz/weed-information/weed-list/spartina)
- *Investigating weeds in your green space* resource:  
 [www.doc.govt.nz/education-weeds](http://www.doc.govt.nz/education-weeds)  
Use this resource to investigate weeds in your school grounds or another local green space.

### Further information

For additional resources to support teaching and learning in nature, visit DOC's conservation education webpage:  [www.doc.govt.nz/education](http://www.doc.govt.nz/education).

To learn more about our amazing Conservation Dogs, check out DOC's *Conservation Dogs Programme education resource* at  [www.doc.govt.nz/education-conservation-dogs](http://www.doc.govt.nz/education-conservation-dogs).

For further information on the Conservation Dogs Programme, visit  [www.doc.govt.nz/conservation-dogs](http://www.doc.govt.nz/conservation-dogs).

## Spartina grass quiz suggested answers

- 1 Spartina grass was introduced to New Zealand. Where did it originally come from?

Answer: North America and Britain.

- 2 Spartina was brought to New Zealand by farmers to help turn wetlands or estuaries into farmland for sheep or cattle. How did the farmers think that spartina would be able to do this?

Answer: Spartina grass grows in large clumps and its roots trap mud and sediments, which build up to form dry land in areas where there was once water. This dry land could then be grazed by animals.

- 3 Once it is planted, spartina spreads quickly over large areas. How does it spread?

Answer: Spartina is very hardy and is not easily killed by being eaten or burnt. The grass spreads by underground rhizomes and seeds, and if part of the plant breaks off, it can float away and re-root in mud elsewhere.

- 4 How do DOC and council workers find individual spartina plants?

Answer: The trained dog Wink can smell spartina grass and lies on the plant when he finds one.

- 5 How can spartina grass be removed and which technique has proven most effective in New Zealand?

Answer: Spartina is dug out, burnt or sprayed with a lethal poison called Gallant.

- 6 Spartina grass grows in the intertidal zone (between high and low tide) where mud snails, flatfish and wading birds also like to live. Why is the grass considered to be a risk to those animals?

Answer: The grass traps sediment and dries up the wetland. This means that these animals have nowhere to live, as they need water, and that the birds have nothing to eat.