

# Biocontrol Bingo

## Summary

Students play a game of Bingo to review their understanding of biocontrol in New Zealand.

## Learning Objectives

Students will be able to:

- Recall biocontrol vocabulary
- Identify common weeds and their biocontrol agents.

## Suggested prior lessons

What is a weed?

Cultivating weeds

Choose your weapon

I get around

Web of life

## Curriculum Connections

Science, levels 2-7 (see suggested prior lessons for details)

## Vocabulary/Concepts

Review of vocabulary from the suggested prior lessons.

## Time

30 minutes

## Materials

- copies of biocontrol bingo cards (1 per student)
- beans, buttons, or other small objects to cover bingo squares
- biocontrol bingo clues

## Background information

Play Biocontrol Bingo to review and use students' knowledge after completing a few biocontrol lessons.

## Activity

Provide one Biocontrol Bingo card to each student. Read the Biocontrol Bingo clues randomly. After reading each clue, you might discuss the answer as a class or allow teams of students to discuss the answers. If the answer appears on a student's card s/he places a bean on that square of the card.

Students win the game by covering their entire card with beans (or just 1 complete row, for a shorter game).

# Biocontrol Bingo Clues

## Biocontrol agents

- This tiny spider-like arthropod sucks the sap from gorse plants (gorse spider mite)
- The larvae of this wasp burrow into hieracium plants, causing deformities in the plant (hieracium gall midge)
- A beetle introduced to control heather (heather beetle)
- A fungus accidentally introduced to NZ that attacks blackberry (blackberry rust)
- This imported fungus attacks mist flower, causing the leaves to die and fall off the plant (mist flower fungus)
- This tiny insect sucks the juices from the new growth of Scotch broom (broom psyllid)
- The larvae of this fly can each eat about six thistle seeds (nodding thistle gall fly)
- Larvae grow inside gorse pods, eating the seeds. They become adults inside the pods, and have to wait for the pod to split in order to get out. (gorse seed weevil)
- This brightly coloured moth was introduced to NZ to control ragwort (cinnabar moth)
- Some of the tests biocontrol agents undergo before they are released in NZ (host testing)

## Invasive plants

- This plant was once a terrible pasture weed but has been successfully controlled by the St. John's wort beetle. (St. John's wort)
- This weed was first introduced to Tongariro National Park in 1912 (heather)
- These trees are important to forestry but can escape and become weeds (wilding pine)
- This weed was originally introduced as a hedge plant (gorse and broom)
- This weed is poisonous to livestock, and is the target of a biocontrol programme including the cinnabar moth, the ragwort plume moth and the ragwort flea beetle. (ragwort)
- This small prickly agricultural weed has been a problem in NZ since the early 1900s (Californian thistle)
- This large prickly shrub smothers native plants when it is young, but old scraggly plants can provide protection for native seedlings (gorse)
- An aquatic weed from South America, found on the North Island of NZ (alligator weed)
- Many of our weeds are ornamental plants that have escaped from people's \_\_\_\_\_ (gardens)
- This fast growing vine is named for the fluffy seed heads it produces (old man's beard)

## Native species

- This native grass looks a lot like invasive pampas grass (toe toe)
- When biocontrol agents for broom are introduced, researchers need to make sure they don't eat this plant (native broom)
- This native bird sometimes spreads weed seeds in its poo (kereru)
- These native lizards vanish when heather invades their habitat (geckos)
- A native moth that attacks gorse stems (gorse stem miner)
- This native spider is harmed when the weed marram grass invades the coastal dunes where it lives. (katipo spider)
- Wilding pine grows at higher altitudes than native trees, and shades out native \_\_\_\_\_ (alpine tussocks)
- This well-loved native tree with bright red flowers has become a weed in South Africa (pohutukawa)

## Ecology

- An organism that harms another organism by living on or in it (parasite)
- Win the fight for resources (outcompete)
- A plant eater (herbivore)
- An animal that eats other animals (predator)
- Taking over and pushing out other plants (invasive)
- A relationship in which both organisms benefit (mutualism)
- Two organisms living together (symbiosis)
- Many plants depend upon animals for this (pollination)
- One of the ways people interact with plants and animals (agriculture)
- Two organisms have no effect on one another (commensalism)

## Other

- Brought to NZ from somewhere else. (introduced)
- A group that introduced exotic plants and animals (acclimatisation society)
- From New Zealand (native)
- An organism used to control a weed or pest (biocontrol agent)
- Many weedy plants spread this way (seed dispersal)
- A weed that damages crops or invades pasture (economic weed)
- This carries some weedy plant seeds far and wide (wind)
- Weed seeds with hooks and barbs are often spread on \_\_\_\_\_ (fur)
- Colonists from this continent brought many of our weeds to NZ (Europe)
- A weed that invades native habitats (environmental weed)

# Biocontrol BINGO

Biocontrol agents	Invasive plants	Native species	ecology	Other
host testing	ragwort	gorse stem miner	parasite	introduced
broom psyllid	Californian thistle	native broom	outcompete	acclimatisation society
gorse seed weevil	gardens	FREE	herbivore	fur
nodding thistle gall fly	gorse	katipo spider	predator	environmental weed
cinnabar moth	alligator weed	alpine tussocks	commensalism	seed dispersal

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gorse spider mite	St. John's wort	toe toe	mutualism	Europe
Hieracium gall midge	heather	pohutakawa	symbiosis	economic weed
heather beetle	wilding pine	FREE	pollination	native
blackberry rust	broom	kereru	agriculture	biocontrol agent
mist flower fungus	old man's beard	geckos	invasive	wind

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