



QUILLS

Queen's University Indigenous Land-Based Learning STEM
Queen's University Biological Station

INVASIVE SPECIES





What is an Invasive Species?

- Animals or plants from another location
- Often transferred by boats or humans
- Cause harm to the natural ecosystem of their new environment
- Capable of causing extinctions of native plants and animals, destroy biodiversity, and permanently alter habitats



Examples of Invasive Species

- Do any of these invasive species look familiar? Keep an eye out for them!



Garlic Mustard



European Buckthorn



Lily-of-the-valley



Periwinkle



Daylily





Garlic Mustard

- Spreads very fast and is considered one of Ontario's most damaging forest plant species.
- Was brought to Ontario from Europe because it is rich in vitamins A and C.
- The biggest problem with garlic mustard is that it puts harmful chemicals into the soil that makes it impossible for any other plants to live there.
- The roots release chemicals that interfere with native plants' ability to absorb nutrients.



Global Garlic Mustard Field Study (GGMFS)

What is it?

- A study where scientists studied and recorded data on:
 - Estimated population size
 - Density
 - Age structure
 - Plant size
 - Reproductive success
 - Damage by herbivores and pathogens
- Goals of experiment:
 1. Learn more about what makes garlic mustard a good invader
 2. encourage studies of other invasive species



Global Garlic Mustard Field Study (GGMFS)

How was the Study Conducted?

- Completed over 4 years
- 164 scientists participated
- Scientists were studying garlic mustard in Europe and North America
- Each scientist followed this procedure:
 - Found a section of garlic mustard with dimensions of 1m x 0.5m.
 - Collected data about the number of plants, height of plants, number of flowers, number of leaves, number of damaged/undamaged leaves.
 - Took photos of the plants.
 - Collected seeds from 20 adult plants.



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Where the Study was Conducted





Global Garlic Mustard Field Study (GGMFS)

Outcomes

- Full data has not yet been released ... stay tuned for the results!
- Connected scientists from around the world.
- Planning of studies for other invasive species is underway.



Extension Activity – Part 1



Look for an invasive species on your schoolyard



Answer these questions:

Where is the invasive species from?

How did it get here?

Are there any benefits to the invasive species?

What impact does the invasive species do to the environment?



Extension Activity – Part 2

The study is now presented through a website,
where you can all contribute to the data!

Step 1

Visit Garlicmustard.org

Step 2

Read through the "Identification Tips" on the website,
and download the "Seek" by iNaturalist App on your
phone.

Step 3

Visit the local Belle Island and record your Garlic Mustard
findings on the website under "Data Entry & Sightings
Report".

