



My nature connection

INVASIVE SPECIES IN MINNESOTA

GRADES: 3-8
TIME: 30 MIN

HOW CAN WE PREVENT THE SPREAD OF INVASIVE SPECIES?

Help students develop an understanding for invasive species in MN and the negative impact they have on our ecosystem. Create a "most wanted" poster at the end of the lesson to solidify understanding of negative impact.

INTRODUCTION

Minnesota is lucky to have such a diverse area, with thousands of beautiful lakes, streams, and abundant forest and grassland. We also have diverse wildlife ranging from a common Whitetail Deer in your backyard, to the small Zooplankton in streams that you can't see with the naked eye. All of those are being threatened by invasive species.

What are Invasive Species? An invasive species is an organism that is not native and whose introduction causes harm, or is likely to cause harm to Minnesota's economy, environment or human health.



Spiny Waterflea

WHAT YOU'LL NEED

print of "most wanted" poster (included), or create your own on a blank piece of paper

art materials (markers, colored pencils, etc..)

STUDENTS WILL:

- gain an understanding of invasive species
- learn the difference between terrestrial vs. aquatic invasive species
- understand threats to MN land and water

SETTING:
Any space where you can craft

Go through some example of invasive species here in Minnesota with your class to better prepare them for the activity.

BUCKTHORN

Buckthorn is a huge threat to Minnesota forests. It can dominate an entire forest floor, and leave no room for other plants to thrive. Common, or European buckthorn, and Glossy Buckthorn are the two non-native, invasive buckthorn species found in Minnesota. They were first brought here as a decorative shrub from Europe, and can still be found in front yards all over. You can identify buckthorn by their dark red berries that grow in August and their twigs with thorns. If you cut into a buckthorn branch, the inside will be bright orange. One way to help get rid of buckthorn is to apply herbicide to the roots of the plant that grows seed. The herbicide moves down the root of the plant and prevents it from re-growing.



BIGHEAD CARP

The Bighead Carp is destroying food chains here in Minnesota. Originally native to Asia, the Bighead Carp first attracted fish farmers to help control water quality, but flooding released them into the Mississippi River in the 1970s. It is recognizable by its silver-gray body, lower-set eyes, and large mouth. It feeds on plankton and small fish and can weigh up to 110 pounds. It lacks a true stomach so it eats continuously, making its destruction much quicker and more devastating.

ZEBRA MUSSEL

Zebra Mussels are an invertebrate species that have small stripes resembling zebras, giving them their name. An adult zebra can grow up to the size of a quarter; a newborn is the size of a needle head. When a zebra mussel is born, it quickly finds something to attach to so it can feed on zooplankton. Unfortunately for us, it attaches to boat motors, docks, rocks, ropes – anything it can get a grip on. When attached to motors, they can even break a boat's engine. On rocks, their sharp shells can cause serious injuries when people step on them. When they overwhelm a lake, it disrupts the food chain and leaves the smaller fish with nothing to feed on.

TIP:
Look up
guidelines for
how to help
remove invasive
species!

GARLIC MUSTARD

Garlic Mustard was first introduced in the 1800s as a medicine and food. It was accidentally transported all over the state — shoes caked in mud carried the seeds far and wide! Over time, it overwhelmed forest floors and prevented other vegetation from growing. It has a strong smell of garlic when pinched; as a mature plant, it gives off a strong chemical that reduces plant growth around it. In the summer, it has a white flower that stands out from the other vegetation. Its entire root must be pulled from the ground to effectively destroy it.

ACTIVITY: MOST WANTED POSTER (30 MINUTES)

Now that students are more informed on invasive species, they are going to create a "most wanted" poster for whatever invasive they want. They can choose from the list above, or find one on their own on the DNRs website. A pre-made poster is provided below, or students can make one on a blank piece of paper.

After they pick an invasive species, have them do a little research on it. When creating the poster, they can include a photo, description, and where it is commonly seen. Students can share what invasive species they chose or their posters, in the class session or chat board and learn from their classmates.

Page 4 includes some invasive species on land and water in Minnesota that might help prompt student inquiry.

MODIFICATION IDEA

As an additional activity for older age groups, have the students find a career relating to invasive species and how they play an important part in invasive species management and removal.

Land Invasives:

Poison Hemlock
Black Swallow-wort
Giant Hogweed
Japanese Hops
Tree-of-heaven
Oriental Bittersweet
Garlic Mustard
Buckthorn
Earth Worms
Emerald Ash Borer

Water Invasives

Curly-leaf Pondweed
Purple Loosestrife
New Zealand Mud Snail
Bloody Red Shrimp
Round Goby
Sea Lamprey
Starry Stonewort
Grass Carp
Spiny Waterflea
White Perch



Zebra Mussels



Buckthorn

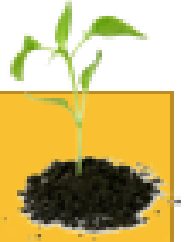


Garlic Mustard



MINNESOTA'S MOST WANTED

HAVE YOU SEEN THIS INVASIVE SPECIES?



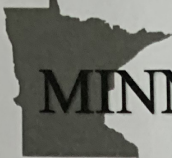

DESCRIPTION:

PHOTO:

Last spotted:

If you spot it, please report back to:

EXAMPLE OF MOST WANTED POSTER

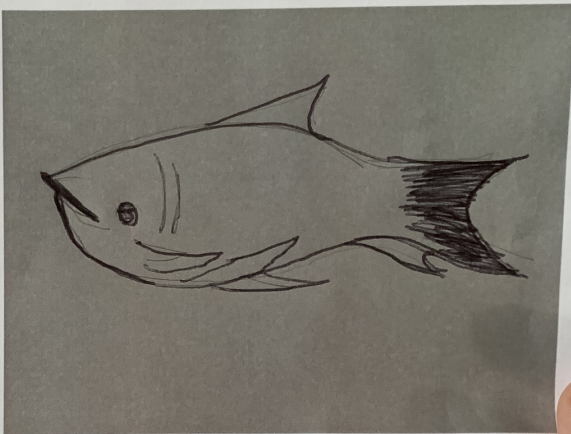
 **MINNESOTA'S MOST WANTED**
HAVE YOU SEEN THIS INVASIVE SPECIES? 

Bighead Carp

DESCRIPTION:

large
fitter feeding
30-100 pounds
upturned mouth
no teeth
low set eyes
native: southern
central China

PHOTO:



Last spotted:

lakes + streams around
Minnesota.
Lake Pepin, Bde Maka Ska,
Mississippi, etc

If you spot it, please report back to: **sam** (your name)

CONNECTING WITH QUESTIONS

- At the end of the lesson, ask everyone what they learned today. How can they take what they learned today into their lives?
- How can you prevent the spread of invasive species?
- Which invasive species do you think are doing the most damage to Minnesota? Why?

ADDITIONAL RESOURCES

<https://www.dnr.state.mn.us/invasives/terrestrial/index.html>

<http://www.dot.state.mn.us/roadsides/vegetation/pdf/noxiousweeds.pdf>

<https://extension.umn.edu/invasive-species/identify-invasive-species>

<https://www.minneapolisparcs.org/>

EDUCATION STANDARDS

Grade Level

Science Education Standard

Grade 3

3.4.1.1.2 Identify common groups of plants and animals using observable physical characteristics, structures and behaviors.

Grade 4

4.1.2.2.1 Identify and investigate a design solution and describe how it was used to solve an everyday problem.

Grade 5

5.4.2.1.2 Explain what would happen to a system such as a wetland, prairie or garden if one of its parts were changed.

Grade 6

3.4.1.1.2 Identify common groups of plants and animals using observable physical characteristics, structures and behaviors.

Grade 7

7.4.2.1.2 Compare and contrast the roles of organisms within the following relationships: predator/prey, parasite/host, and producer/consumer/decomposer.

Grade 8

8.1.1.2.1 Use logical reasoning and imagination to develop descriptions, explanations, predictions and models based on evidence.