

## What are Invasive Species?

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Target Grade: 5th Grade

Topic: Invasive Species

### Lesson Overview

Students will discover what invasive species are, why they are harmful, and what species are found in the state of Michigan. Through small group and whole group discussions, students will ask questions and define problems associated with invasive species. The photo of the lamprey will motivate students to ask questions, refine questions, and make predictions to help develop explanations about the impact of invasive species on our economy, environment, and human health.

### Sources Consulted

Michigan Department of Environmental Quality, DNR, and Dept. of Agriculture Invasive Species video: The Basics. <https://www.youtube.com/watch?v=yIgyS25Hho8>

Hollingsworth, K. (2017). *Invaders of the Great Lakes 2nd Edition*. Cambridge, MN: Adventure Publications.

State of Michigan. (2018). *Michigan Invasive Species*. <http://www.michigan.gov/invasives>

Sweeting, Roger. Photo of (2016) 'Sea lamprey parasitizing brown trout.' Freshwater Biological Association, UK. See <http://www.environmentdata.org/archive/fbaia:2705>

### Learning Objectives

*After this lesson, students will be able to:*

1. Define invasive species.
2. Define non-native species.
3. List several invasive species that are found in the State of Michigan.
4. What are three ways that invasive species cause harm?

### Michigan Science Standards Addressed

5-ESS2-1MI Develop a model using an example to describe the ways the geosphere, biosphere, hydrosphere, and/or atmosphere interact in Michigan and the Great lakes basin.

5-ESS3-1 Obtain and combine information about ways individual communities use science ideas to protect the Earth's resources and environment.

## **Michigan Social Studies Standard Addressed**

5-P4.2.1 Develop and implement an action plan and know how, when, and where to address or inform others about a public issue.

## **Materials Needed and Quantities**

Computer and projector to show photo and video clip

Sticky notes (3 per student)

Large piece of butcher craft paper 4' X 6'

Large white Post It chart paper 25 X 30 inches (1 per group)

4 Sharpie markers (black, blue, green, red) for each group

List of invasive species found in Michigan <http://www.michigan.gov/invasives>

Website ready to show photos of Michigan invasive species <http://www.michigan.gov/invasives>

Exit slips (1 per student) - Copy to print attached below

## **New Vocabulary**

*Invasive Species* - A plant or animal that is brought to an area and rapidly spreads, taking over native species and soon the native species no longer grows in an area. Invasive species are both harmful and non-native.

*Non-Native* - A plant or animal that is living or growing in a place that is not the location of its natural occurrence. Non-native species are not harmful to the environment or other species.

*Economic Loss* - A financial loss due to management and control costs of invasive species.

## **Focus Question(s)**

What is an invasive species?

Which (aquatic/terrestrial) invasive species are found in Michigan? In your community?

## **CLASSROOM PROCEDURE**

### **Introduction/Attention-Getter (5 min)**

A photo of two sea lamprey preying on a brown trout will be displayed in the front of the classroom using a projector and screen. Each student will have three sticky notes. They will need to write a question or thought on each sticky note that comes to mind when they look at the sea lamprey photo. <http://www.environmentdata.org/archive/fbaia:2705>

## Activities

### **Sticky Note Observations and Gallery Walk (20 minutes)**

Students will share their sticky notes with each other in small groups (preferably groups of 4). Each small group will discuss what is happening in the picture, why it is happening, whether it can be prevented, etc. Together, small group members will combine their ideas, questions, and thoughts onto a large piece of white chart paper. Every group's pieces of chart paper will be hung around the classroom for a gallery walk. Students will take 5 minutes to walk around the room reading other groups' papers to see similarities and differences in ideas. Sticky notes will be saved for the next activity.

### **Driving Question Board (25 minutes)**

The whole class will come together and create categories based on the exploration and analysis of the groups' chart papers during the gallery walk. The categories decided upon will be written on a large sheet (4' X 6') of butcher kraft paper taped up horizontally on the board. The teacher can guide the discussion into the following categories ideas:

- Where did the lamprey come from?
- Harmful Effects
- Prevention
- Are there other invasive animals/plants (in Michigan or the Great Lakes?) besides the one in the picture?

\*Students may come up with other categories other than what's mentioned above.

After categories are created, all groups can bring their sticky notes forward and put them up in the categories created as a whole class. This will compile all ideas into one place. The terms *invasive species* and *non-native species* should be written on the board. Have a group discussion about the terms and lead to giving students the definition of both.

### **Video (10 minutes)**

Restate the vocabulary word 'invasive species' and discuss the sea lamprey. Watch Youtube video clip "Invasive Species: The Basics." <https://www.youtube.com/watch?v=yIgyS25Hho8> Ask students to listen for invasive species that are found in Michigan that are mentioned in the video. When the clip is over, ask students which invasive species were mentioned in the video. List students' answers on the whiteboard to compile a list of Michigan invasive species. Show photos of the invasive species that can be found in Michigan using the michigan.gov website listed above.

### **Assessment of Student Learning (5 minutes)**

Students will demonstrate understanding by completing an exit slip with the following questions:

**1) What are invasive species?**

*A plant or animal that is brought to an area and rapidly spreads, taking over native species and soon the native species no longer grows in an area. Invasive species are both harmful and non-native.*

**2) List three invasive species found in the state of Michigan.**

*Purple Loosestrife, Water Hyacinth, Water Lettuce, Parrot Feather, Zebra Mussels, Quagga Mussels, Sea Lamprey, Asian Long Beetle, Emerald Ash Borer, Hogweed.*

**3) Give an example of how Invasive Species can cause harm.**

*Invasive species can cause harm to the economy through management and control costs or a decrease in property values. Invasive species can cause harm to the ecosystem because native species will become less populated as an invasive species takes over an area.*

*Invasive species can cause harm to human health like in the example of the young boy who suffered severe blistering after playing in Hogweed.*

**We would greatly appreciate your feedback using this lesson plan!  
Please visit <https://www.biaquariumstem.org/survey.html> to complete a short survey about your experience.**

Name: \_\_\_\_\_

**Exit Slip**

What are invasive species?

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List three invasive species found in Michigan.

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

Give an example of how Invasive Species can cause harm.

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