

**ACTIVITY ONE:**

**ALIEN INVADERS**

**TIME:**

(3) 45-minute lessons

**SCIENCE PROCESS SKILL:**

Communicating

**SCIENCE CONCEPT:**

Nonindigenous species have an impact on native populations.

**BENCHMARKS:**

Students should:

Learn a lot about plants and animals by observing them closely. Care must be taken to know the needs of living things and how to provide for them in the classroom.

Know that changes in an organism's habitat are sometimes beneficial to it and sometimes harmful.

Keep a notebook that describes observations made. Carefully distinguish actual observations from ideas and speculations about what was observed. The notebook should be understandable weeks or months later.

Buttress their statements with facts found in books, articles, and databases, and identify the sources used.

**OBJECTIVE:**

Students will record observations on species and describe the impacts of these introduced species.

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**WHAT YOU OUGHT TO KNOW**



Nonindigenous animals and plants that have been introduced to a specific area may have tremendous impacts on a native habitat. Species that are introduced intentionally or accidentally may change the habitat so much that native species - may have little chance of survival. Introduction may occur through natural means, such as through currents and floods, or by attaching to animals and birds that move from one location to another. However, humans frequently are the primary transporters of these alien invaders.



## WHAT'S THE CONNECTION?

### TO LANGUAGE:

Write poetry, a rap, or a skit about the "evils" of nonindigenous species.

### TO ART:

Prepare a zebra mussel folder/journal.  
Design and display posters locally.

### TO SOCIAL STUDIES:

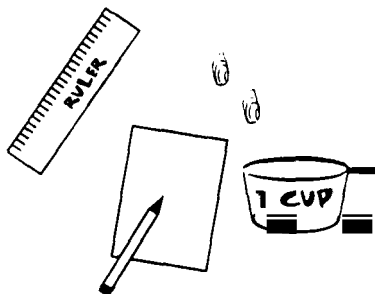
Map out the areas of infestation by any of the nonindigenous species.



## WORDS OF WISDOM

Ballast water, biological diversity, degradation, dispersal, exotic species, habitat, indigenous species, infestation, native organisms, nonindigenous species, prey, predator, turbidity, zooplankton (see also glossary on page 7)

## RESOURCES AT THE READY



Zebra mussel journal  
Research on Exotic Species Record Sheet 1.1  
Paper  
Information cards and fact sheets on:  
zebra mussels, ruffe, purple loosestrife,  
spiny water flea, sea lamprey, and  
Eurasian water milfoil  
Other background information for teachers  
(in the black portfolio)  
Video: The Sea Lamprey Battle Continues

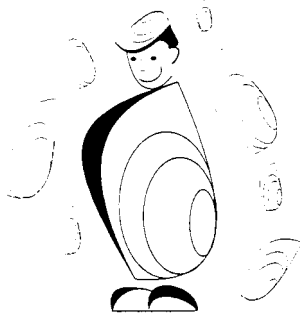
## GETTING YOUR ACT TOGETHER

Read the resource materials and become familiar with the materials to facilitate cooperative learning groups. The class should be divided into cooperative working groups of 3-5 students, with one or more groups given the species represented in the materials. Using the provided journal master sheet (see p. 14, no. 6), prepare a zebra mussel journal for each student (or each working group). The students will be using this journal throughout the traveling trunk study.



## TIME TO EXPERIENCE ZEBRA MUSSEL MANIA!!

### DAY 1-2



1. Introduce students to the concept of alien invaders. Ask them what they know about animals and plants that have been introduced to America and that are not native. List on a piece of newspaper, or the board, what they know about alien invaders or exotic organisms. Communicate that the students will be concentrating on recent invaders, focusing on one in particular.
2. The teacher, or working groups, should choose a species to research.
3. Using the laminated exotic species information cards, students will find the following information: species description, method of introduction, means of spread, impact on native species, and interesting facts pertinent to their research (who, what, when, where, why, and how).
4. Using their newly acquired information, students will prepare an oral presentation. The presentation may be supplemented with materials in the kit or may include posters or other student-made materials. If the species can be obtained locally (through your University's biology department or a natural resource management agency), arrange for specimens to be brought into the classroom.

## DAY 3

5. Write the following statements on the board and have the students copy them in each journal, leaving space for answers. Repeat this six times (pages) with the species name supplied each time. Another option is to reproduce Record Sheet 1.1.

NAME OF SPECIES:

SCIENTIFIC NAME OF SPECIES:

DESCRIPTION OF SPECIES:

METHOD OF INTRODUCTION:

HOW THE POPULATION SPREADS:

IMPACT ON NATIVE SPECIES:

INTERESTING FACTS:

6. Students will present to the class findings from the information researched.
7. As each presentation is made, students will take notes in their journals, filling in the appropriate data and information. Questions can be asked by students to complete any missing information.
8. With student discussion and input, make a list (on newsprint or on the board) of what students now know about each alien invader. Compare the lists and identify differences and similarities. Use the webbing technique to show relationships within the information.

### WHAT DID YOU LEARN??

As each student listens to the presentations, he/she should have recorded the required information in the journal. The reports should reflect the information presented in the poster materials. The students' lists made in their initial fact-finding activity should now be much longer. Did everyone add information to the list?

## WAIT, THERE'S MORE. . .

- Have the class make additional reports on other alien invaders or exotic species. These include carp, dandelion, English sparrow, rabbits in Australia, starling pheasant, rainbow trout, and others.
- Ask a local Cooperative Extension Service educator, wildlife biologist, or natural resource manager to discuss nonindigenous (exotic) species with the class.
- Consult books such as *Protecting Endangered Species* by Felicity Books (Usborn Publishing Company, 1SBNO-7460-0608X). This book shows impacts of other introduced species and explains what has happened to native species when new species have been introduced.