



Invasive Species

Station 5

Marc Seifert

Time Frame:	Standards:
30-45 Minutes based on age and development level.	The educators implementing this activity will determine appropriate standards based on age and student activity. The Idaho standards are shown as an example only. http://www.sde.idaho.gov/site/content_standards/
Objectives:	
<p>Learn to recognize an invasive species and potential impacts on the habitat</p> <p>The students will have observed their river/stream habitat, learned about invasive species and:</p> <ul style="list-style-type: none"> • Learn about the potential impacts resulting from loss of native species • Identify and take part in removing selected invasive plant species • Establish an understanding of the extent of invasive species that have invaded this river habitat and learn how to control them 	
Background Information:	
<p>All habitats are systems of many organisms working in concert to maintain a healthy ecosystem. Biodiversity can be described as the variety of life in a habitat and can include plants, animals, fungi, and microorganisms. A balanced diverse biodiversity is interdependent and when balanced, supports additional elements such as oxygen in the system, water purification, prevention of floods, managing soil erosion, nutrient recycling, and pollination.</p> <p>Biodiversity is impacted by human activities including agriculture, mining, development, and the introduction of non-native species. Invasive species are non-native plants or animals that do not naturally occur in a habitat. These species might be introduced through a number of different means. Some are brought to an area as landscape plants. Others, such as cheat grass, were brought to western regions to help feed cattle. Still others are introduced into an area without direct knowledge of people, such as the zebra mussel which came in attached to boats and have overran many lakes.</p> <p>All organisms compete for resources in the habitats. These resources can include nutrients, space, water, and sunlight for plants. Often invasive species do not have any natural predators or diseases and there is nothing to control their growth and they can overcome native species by taking more of the resources, leading some species to become endangered or even extinct. Active management of invasive species is being practiced with many native species being reintroduced to their native ecosystems to reverse the impacts of the past changes. Students will be introduced to the impacts of invasive</p>	



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species as part of their lessons about the river and stream habitats.

Materials:

- Guest Speaker: County Agent, fish and game officer, or other local expert in invasive species and plants
- Informational handout on invasive species (typically supplied by the guest speaker, county agent, or the educator)
- Field microscope or magnifying glass
- Field Guide (optional if the handouts are insufficient)
- Science journal
- Pencil
- Colored pencils or crayons
- *Natural Inquirer* invasive species excerpt (p. 5-6)

Procedure:

Invite the guest speaker to talk to the students and show them about non-native and invasive species, what different species they may encounter in their habitat, and the reasons why invasive species may be harmful to river habitat. Examples of subjects that can lead to student discovery may include:

- Engaging students in interactive discussions of the invasive species they may encounter. Discussing how students can recognize the species..
- Students identifying invasive and non invasive plants using a field guide.
- Students recording observations in their journals.
- Student's reading the attached section of the article *Natural Inquirer* p. 5-6 and then summarizing the article section.
- Students sharing results and observations.

Students preparing to share their new knowledge with the other teams of students later when they all assemble as part of the Jig-Saw cooperative learning methodology.

Assessment:

Students will share their knowledge of their habitats demonstrating knowledge of what invasive species they encountered and possible impacts.

Students will complete their Journal entries and documenting in preparation to sharing with the other students in the Jig-Saw cooperative learning methodology.



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Due to time limits, cooperative learning may be required and shared assignments and group sharing used to transfer the knowledge. There are many methodologies and the individual teachers would determine the best approach for them, The Jigsaw methodology is one that lends well to this type of learning and offered as an example only. Teachers will assign parallel tasks and students will perform their assignments and share in group sessions.

Additional Content:

Examples of Field Note Cards that may be used during the field trip to aid in Journal entry.

Invasive Species
Illustration:
Name:
Why is this invasive species a problem?
Other Notes?

Non-invasive Species
Illustration:
Name:
Why is this invasive species a benefit to the river habitat?
Other Notes?

References:

<http://www.jigsaw.org/overview.htm>

State Fish and Game Office

County Agent

The Watercourse 2000, 2002, and 2004. The Watercourse U.S.A. Bozeman Mt.

<http://projectwet.org/>

Project Wet, Bozeman Mt. <http://projectwet.org/>