

This activity was developed by the Bridger-Teton National Forest.

Aquatic Nuisance Species Activity

Aim: To develop students' understanding of how environments are affected by ANS

Grade: all ages

Subject: Science

Instructional Objective: Students will identify problems associated with aquatic nuisance species

Vocabulary/Key Concepts: Environment, observation, invasive, native, bivalve mollusks, byssal thread, veligers, biodiversity, aquatic food chain

Materials Needed:

- Dixie cups (enough for each student)
- Straws
- Water
- Jell-O (blue preferred)

Background:

Invasive mussel populations have been found widespread in the Great Lakes and Midwest regions of North America for two decades now. More recently, quagga mussels have established themselves in the Colorado River and are rapidly spreading to other water bodies in the western states. These invasive zebra and quagga mussels are tiny, the size of a person's fingernail, yet can wreak havoc in freshwater lakes and rivers. The mussels have been found to clog intake pipes that draw water from infested lakes and rivers. They coat the bottom of lakes and reservoirs, disrupting biodiversity and the aquatic food chain and spoiling swimming areas with the sharpness of their shell's edges. The mussels feed off the phytoplankton which is fed on by the zooplankton. With the zooplankton food source being exhausted, the native fish have less and less food until they die off. Mussels attach to anything with a hard surface in the infested waters, like boats and their outdrives, hulls and intakes, leading to over-heating and drive-train wear, rocks and pipes. Invasive mussels grow rapidly to maturity within a year, and reproduce prolifically. A single adult female can produce 30,000 – 100,000 eggs each year, and researchers have found up to 700,000 adult mussels per square yard in some locations.

Materials:

- Make the Jell-O according to package directions the night before; one scoop is sufficient for each cup, blue Jell-O is best, to simulate water
- Each student will be given a Dixie cup filled with water and one that is filled with Jell-O.
- One straw per student

Procedure:

- Each student will have two cups in front of them. Explain that the cup with water in it represents a lake or river. Use an example of a water source that will be familiar to the students if possible.
- Now have each student use the straw to drink out of the water cup. Ask one student how easy it was to suck water through the straw. The student should say it was easy and unobstructed.
- Now have each of the students use the straw to try and drink out of the Dixie cup with Jell-O. Stop one student when you observe that their straw is filled with Jell-O. Have them hold it up so everyone can see and explain to the class that this is what happens to the pipes for water and electricity when they are infested with mussels.

Created by Adam LaDell with the Bridger-Teton National Forest Service

If you have any questions regarding this activity, please contact Adam LaDell at:

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