

Featured Lesson

Lesson 3:7 - Mussel Mania

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Chapter 3 of the MinnAqua *Fishing: Get in the Habitat!* Leader's Guide contains seven lessons, all pertaining to understanding different concepts relating to water stewardship. This chapter covers topics from the water cycle, to role playing citizen action groups, to the impacts of invasive species in Minnesota. As humans have become more global in our travels, so have other organisms as they hitchhike along for the ride. **Lesson 3:7 – Mussel Mania** demonstrates how Freshwater Mussels survive and what happens to them when Zebra Mussels are introduced into their habitats.

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Lesson Summary

Students become native mussels, invasive zebra mussels, perch, walleye, or "plankton movers" in a game designed to help them understand how harmful invasive species can affect the balance within aquatic ecosystems.

Tips & Tricks

- Students may have a lot of questions about the differences between a freshwater mussel and a zebra mussel. One major difference is each of their life cycles. Freshwater mussels need a host (fish or salamander) for their glochidia, or immature stage. Zebra mussels do not need a host for their veligers or immature stage.
- A variety of soft materials can be used for plankton. We suggest balled up paper in the lesson. You can also use practice golf-balls, foam balls, golfball sized pom poms, or other soft objects that are no bigger than a golf ball.
- This activity can be done indoors or outdoors. Be sure the space you choose has enough room for your participants to move around freely and for participants to be on the outside of the designated playing area.



Diving Deeper

- You can find a variety of videos online that show the life cycles of different freshwater mussels. They are incredibly varied and fascinating to see. Our [Species Profile](#) on freshwater mussels highlights one such video.
- Have students research which Minnesota fishes are used as hosts for freshwater mussels.
- The St. Croix River is home to many endangered freshwater mussel species. The [Minnesota DNR](#), [US Fish and Wildlife Service](#), and the [National Park Service](#) study and protect the mussel populations in the St. Croix River and provide excellent information about the different species found there.

MinnAqua Lesson Connections

Lesson 1:4 - Water Habitat Site Study [PDF](#) (43 pages | 8.3 MB) gives participants the opportunity to observe aquatic life close-up. Other invasive species are identified in this lesson along with zebra mussels. This lesson also provides information in the instructor's background on how to prevent the spread of aquatic invasive species.

Lesson 1:5 - Habitat Hideout [PDF](#) (32 pages | 3.9 MB) discusses how fish utilize different parts of a lake or river for shelter and provides background on what fish eat. Connections to freshwater mussels and zebra mussels can be discussed along with healthy fish habitats.

Lesson 4:5 - Fisheries Management and You [PDF](#) (36 pages | 4.5 MB) provides the opportunity for participants to think like a fisheries manager and a concerned citizen and see how their decisions impact aquatic habitats.

Suggested Online Student Resources

Have your students access these online resources to engage in these concepts further.

- [Videos of Freshwater Mussels Spawning](#) - Google
- [Freshwater Mussels of the Upper Mississippi River System](#) - USFWS
- [Stop Aquatic Hitchhikers](#) - MNDNR
- [Freshwater Mussel Quiz](#) - USFWS
- [Russel the Mussel Book](#) download opportunity - USFWS
- [Freshwater Mussel Activity Book download](#) - USFWS
- [Reproductive Cycle of Freshwater Mussels](#) - animated video - USFWS