

Great Lakes Invasive Species Profiles

For use with *Invasive Species in the Great Lakes* lesson plan, developed by Pictured Rocks National Lakeshore.

How to use:

Print off the species profiles, assign species to students or groups of students. Have students write “press releases” about their assigned species using the “Invasive Species Press Release” template, attached to the online lesson plan.

Vocabulary terms are *italicized and underlined*:

Ballast water: Water stored inside a boat to stabilize and balance it. Once ships reach their destination, the ballast water is emptied. This is a very common transportation method for invasive species.

Canals: A man-made waterway to transport goods. Examples: Panama Canal, St. Lawrence Seaway. Often goes around natural barriers.

Dorsal fin: The fin located on the back of fish and some marine mammals.

Filter feeders: A way that some animals eat. They take in large amounts of water and strain out what they want to eat. This reduces the amount of plant and animal matter in the water.

Herbicides: Chemicals that kill plants.

Insecticide: Chemicals that kill insects.

Larvae: The baby stage of some animals and insects. Usually small and worm-like.

Lampricide: Chemicals that kill lamprey.

Mitigations: Ways that you make something less bad.

Ornamental: Decorative. People plant ornamental plants because they like the way they look.

Parasite: An animal, insect, or plant that uses another animal, insect, or plant for its nutrients.



Hemlock Woolly Adelgid

Adelges tsugae

Identification:

Tiny insect, dark red-brown. Round, white, cottony masses. Found on twigs at the base of needles on the underside of hemlock branches.

Habitat:

Live on eastern hemlock trees. Mostly in moist forests and along streams.

Season present:

Year-round. Most visible November-July.

Transportation:

Possibly moved from tree to tree by birds, wildlife, wind, gear/equipment, and clothing.

Native range:

East Asia.

Threats:

HWA sucks sap from hemlock needles. This kills the needles, shoots, and branches. This can kill the entire tree in 4-10 years.

Mitigations:

Check to see if HWA is present. If so, note the location, take a picture, and contact the MDA (Michigan Department of Agriculture and Rural Development).

Threat Level: Found in Michigan. Has NOT been found in Pictured Rocks.



Emerald Ash Borer

Agrilus planipennis

Identification

Bright, metallic green with purple abdominal segments under the wing covers. *Larvae* are worm-like. When emerging, beetles create a D-shaped exit hole in trees.

Habitat

Urban, suburban, and rural forests. Found on ash trees.

Season present:

Larvae live under tree bark during winter and emerge from spring to fall.

Transportation:

Most likely arrived from solid wood packing materials arriving from Asia.

Native range:

Eastern Russia, Japan, Northern China and Korea.

Threats:

These bugs have killed tens of millions of ash trees. They don't fly far but are concerning when infested firewood is moved to a non-infested area.

Mitigations:

Reporting is no longer needed in Michigan. Ash trees can be treated with *insecticide* to prevent infestation. This should be done every 2-3 years.

Threat Level: Detected in the U.P.



Sea Lamprey

Petromyzon marinus

Identification:

Eel-like fish. Round mouth with several rows of sharp, curved teeth. Usually 14 – 24 inches long.

Habitat:

Live in freshwater lakes. Lay eggs and hatch in rivers and streams.

Season present:

Year-round.

Transportation:

Man-made canals (ex: St. Lawrence Seaway) allowed sea lampreys to swim from the ocean to the Great Lakes. Once in the Great Lakes, they quickly spread on their own.

Native Range:

Atlantic Ocean, coasts of North America and Europe; Mediterranean Sea.

Threats:

Sea lamprey are parasites. They suck the blood of Great Lakes fish like lake trout and whitefish, weakening and killing them. Invasive lamprey lay lots of eggs and lack natural predators, so their population can grow very quickly.

Mitigations:

Barriers can be constructed in rivers to prevent sea lamprey from laying eggs. The U.S. Fish and Wildlife Service also kills lamprey with lampricide. If you find a lamprey, take photos, note the location and contact the Great Lakes Fishery Commission to report it.

Threat Level: Established in the Great Lakes.



Zebra Mussels

Dreissena polymorpha

Identification

Small, striped, clam-like mussels with triangular shells. May be striped with white, tan, brown, or black. Typically found clinging to docks, boats, and other structures. Average length is 1 inch.

Habitat:

Freshwater lakes, rivers, and reservoirs. Zebra mussels require hard surfaces to latch onto.

Season present:

Year-round.

Transportation:

Arrived in the Great Lakes from ballast water in ships coming from Europe and Asia. They can be transported on boats, fishing gear, and other equipment.

Native range:

Freshwater rivers and lakes in Europe and Asia.

Threats:

Zebra mussels are filter feeders. They eat algae and other plant matter from the water. This takes away food from native species. Zebra mussels reproduce much quicker than native species. Zebra mussels can also clog pipes for power plants and other important facilities.

Mitigations:

Clean, drain, and dry all boats, kayaks, canoes, and gear when moving from one body of water to another. If found contact the Midwest Invasive Species Information Network.

Threat Level: Established in Michigan. Has NOT been found in Pictured Rocks.



Round Goby

Apollonia melanostromus

Identification

Young fish are solid slate gray color, older fish are blotched with gray and brown. Black spots on dorsal fin. Up to 17.8 cm long.

Habitat:

Freshwater habitats, gobies like to perch on rocks and debris in shallow areas. Sometimes found in open sandy areas.

Season present:

Year-round.

Transportation:

Arrived in the Great Lakes from ballast water in ships coming from Europe and Asia. Sometimes illegally used as fishing bait.

Native range:

Europe and Asia – Caspian Sea, Black Sea, Sea of Azov.

Threats:

They have a very big appetite and are aggressive fish. This allows them to outcompete native species. They can also feed in complete darkness, which many native species cannot.

Mitigations:

Electric barriers can prevent the movement of round gobies into new lakes and rivers. Ensuring gobies are not used as fishing bait can also help. Report immediately if found to the Midwest Invasive Species Information Network.

Threat level: Found in Michigan. Has NOT been found in Pictured Rocks.



Giant Hogweed

Heracleum mantegazzianum

Identification

White flowers in a huge umbrella-shaped cluster up to 2.5 feet across. Can grow up to 14 feet tall. Stems are green with purple splotches with visible white hairs. Looks similar to cow parsnip, wild parsnip, and Queen Anne's lace.

Habitat

Prefer open, slightly moist areas, but can be found in many habitats.

Season present

Spring to Fall

Transportation

Introduced as an ornamental garden plant.

Native Range

Asia

Threats

Sap can cause severe skin burns. Giant hogweed sap makes skin sensitive to sunlight, when sun hits the skin, it can cause blisters and rash.

Mitigation

If found, report to the Midwest Invasive Species Information Network.

Threat level: Established in Michigan



Purple Loosestrife

Lythrum salicaria

Identification

Flower with a woody, square stem covered in downy hair. Small, bright purple flowers are found at the top of the plant and occasionally between leaves. Can be up to 10 feet tall.

Habitat

Along roadsides and in wetlands. Plants can grow in water or in moist areas with full sun.

Season present

Summer

Transportation

Possibly introduced through ballast water from ships travelling from Europe and Asia. May have been planted in gardens as ornamental flowers.

Native range

Europe and Asia

Threats

Purple loosestrife can quickly replace native plants. Leads to habitat loss.

Mitigations

Herbicides can be used to control flowering in the summer or dug up and thrown away when the plant is still young. Some areas have used beetles to eat the plants. If found, report to the Midwest Invasive Species Information Network.

Threat level: Established in Michigan.



Spotted Knapweed

Centaurea stoebe

Identification

Pinkish-purple flowers that are thistle-like. Bushy plant with long greenish leaves. Long *taproot* can start new plants.

Habitat

Open fields or shrub areas with poor soil. Very common on roadsides and other high-use areas.

Season present

Summer

Transportation

Possibly introduced through ballast water from ships travelling from Europe and Asia or through contaminated seed mixes.

Native range

Europe and Asia

Threats

Makes soil poisonous for other plants. Creates areas where only knapweed can grow. Crowds out native plants.

Mitigations

Herbicides can be used to control flowering in the summer and can be pulled from close to the base to ensure the roots are pulled up.

Threat level: Established in Michigan. Very common in Pictured Rocks.