

Every time you are on the water, remember to

CLEAN. DRAIN. DRY.

www.watershedcouncil.org/clean-boating

ASIAN CARP ALERT!

Do you know what's in your bait bucket?

Bait can be transported across state lines, including from areas with breeding populations of Asian carp. Unfortunately, this means that it is possible for juvenile carp to get into the bait supply.

Juvenile Asian carp look remarkably similar to common bait fish. An accidental release could have dire consequences for our aquatic ecosystem and boater safety. Asian carp can reproduce at staggering rates and grow quickly, rapidly consuming food sources valuable to other species. Here's what to watch for in your bait bucket!

COMMON BAIT



ASIAN CARP Juveniles



Key identifying features for juvenile Asian carp:

- Very small scales
- Eyes set at mid-line or below the middle of the body
- Down-turned mouth (frowning)

NEVER throw live bait back into the water.

Inspect Everything!

Michigan State Law* requires you to keep your boat free of aquatic plants.

Be sure to check the following areas **before launching** and **before leaving** the launch site.

*A good rule of thumb...
if it came in contact with
water, check it out!*



* Section 324.41325, Part 413, Transgenic and Nonnative Organisms, of the Natural Resources and Environmental Protection Act, Act 451 of 1994 as amended.

CLEAN.

Remove visible mud, plants, fish or animals from your boat, trailer, or other equipment before leaving the water body. If possible, wash your boat, trailer, and equipment thoroughly with hot water.

DRAIN.

Drain all water from live wells, bilges, motors, transoms, and other containers before leaving launch area.

DRY.

Allow your boat to dry for a minimum of five days in a sunny location before transferring into a new body of water.

Need more information?

Tip of the Mitt Watershed Council offers a wide variety of materials, many available for immediate download at:

www.watershedcouncil.org



STOP THE INVASION

*Tips for Preventing the Spread
of Aquatic Invasive Species*



www.watershedcouncil.org

The Threat is Real. Prevention is Easy!

Boats, trailers, waders and other fishing and boating equipment can spread aquatic invasive species from waterbody to waterbody unless properly cleaned, drained and dried after use. Although some invasive species such as Eurasian Water-milfoil are visible to the human eye, many others are too small to be noticed.

To help you avoid spreading invasive species we've put together this handy pocket card. By following the tips outlined here you will help protect our waters and enhance your boating experience for years to come.

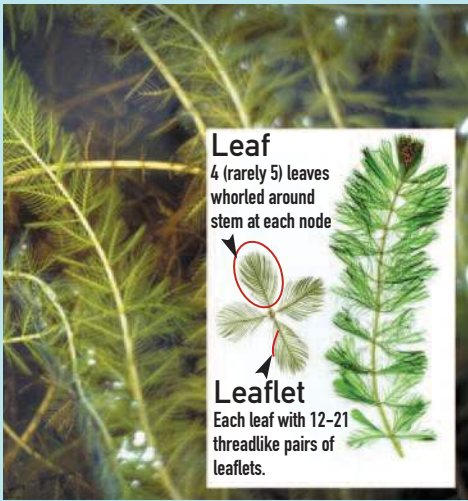


For more information, visit
www.watershedcouncil.org



www.ltbodawa-nsn.gov/NRD/NRD.html

This message brought to you in partnership by Tip of the Mitt Watershed Council and the Little Traverse Bay Bands of Odawa Indians Natural Resources Department. Working together to prevent the introduction and spread of aquatic invasive species throughout Northern Michigan.



EURASIAN WATERMILFOIL

Myriophyllum spicatum

This submergent aquatic perennial reaches 3-10 ft. or more in length and forms dense mats that can interfere with water recreation such as boating, fishing, and swimming. The plant's floating canopy can also crowd out important native water plants.

A key factor in the plant's success is its ability to reproduce through stem fragmentation and runners. A single segment of stem and leaves can take root and form a new colony. Fragments clinging to boats and trailers can spread the plant from lake to lake.

Key Identifying Features:

- 4 (rarely 5) leaves whorled around stem at each node
- Each leaf has 12-21 threadlike pairs of leaflets
- Leaves have a "fish bone" appearance with a clipped tip.

ROUND GOBY

Neogobius melanostomus

Round gobies are native to Europe, specifically the Black and Caspian Seas. They were introduced to the Great Lakes region in the St. Clair River through ballast tanks of ships.

Round gobies have rapid reproduction rates and can spawn several times in a season, allowing them to establish large populations and outcompete native species.

Round gobies are typically 3-6 inches long and have robust tapered bodies. They have frog-like eyes near the top of their head, spineless dorsal fins, and the front dorsal fin has a dark spot at the posterior base. Round gobies have a fused pelvic fin that is scallop shaped.

Key Identifying Features:

- Fused pelvic fin
- Frog-like eyes near top of head
- Dark spot on front dorsal fin



Round Gobies have a fused, scallop-shaped pelvic fin. Sculpin, a close look-alike to the round goby, have two separate pelvic fins.



CURLY LEAF PONDWEED

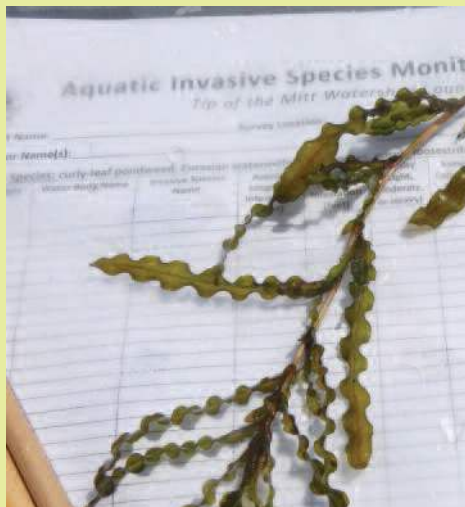
Potamogeton crispus

Curly Leaf Pondweed is a submergent aquatic perennial that ranges from 1-2.5 ft. in length. Leaves may be green or reddish brown. It can thrive in still and flowing water and tolerates slightly brackish water. It grows rapidly in spring, forming dense mats that shade our native vegetation.

The leaves are somewhat stiff and crinkled, approximately 1/2-inch wide and 2 to 3 inches long. The leaves are arranged alternately around the stem and become more dense toward the end of branches.

Key Identifying Features:

- Small "teeth" visible along edge of leaf
- Leaves are relatively stiff for aquatic plants
- Leaves have ruffled edges resembling a lasagna noodle



Be on the look-out for these AQUATIC INVADERS

The Great Lakes ecosystem has been severely damaged by more than 180 invasive and non-native species. Aquatic invaders can have profound and lasting impacts on our ecosystem. The damage caused by invasive species also has the potential to go beyond the ecological. They can threaten human health and our economy by damaging critical industries such as fisheries and tourism.

Free from natural predators, invasive species reproduce rapidly in their new homes and compete with native species for food and habitat. They disrupt the aquatic food web by reducing food for native species or by preying directly upon native species. Once established, it is difficult to control the spread of invasive species.

Prevention is the most cost-effective approach to dealing with invasive species that have not yet entered or become established in Northern Michigan's water resources. You can help by following the simple guidelines on the back of this brochure every time you enjoy our lakes, rivers, and streams.



Learn more about these and other invasive species at
www.watershedcouncil.org/clean-boating

RUSTY CRAYFISH

Orconectes rusticus

Rusty crayfish can be identified by their robust claws, and by dark, rusty spots on each side of their carapace. The spots are located on each side of their shell as though you picked up the crayfish with paint on your forefinger and thumb. Adults are generally 3-5 inches long. They have large claws with black bands near the tips. The moveable claw has an S-shape.

Being an aggressive species, the rusty crayfish often displaces native or existing crayfish species. Rusty crayfish also reduce aquatic plant abundance and species diversity.



Key Identifying Features:

- Rusty spots on each side of their carapace (shell).
- Claws have black banded tips
- S-shaped movable claw



Star-shaped bulbil are 3-6 mm wide.

Key Identifying Features:

- Star-shaped bulbils in late fall and early spring
- Passes the "Squeeze Test"
- Lacks a musky or garlic odor like native Chara (Muskgrass)

QUAGGA MUSSELS

Dreissena bugensis

Quagga mussels are a freshwater mollusk reaching up to 1.5" in length. Similar in appearance and size to the zebra mussel (*Dreissena polymorpha*), the quagga mussel, when placed on a surface, fall over as they lack a flat underside (hinged side), while zebra mussels are stable on their flattened hinge side. Quagga mussel shells are also rounder, lack ridges, and usually have dark concentric rings, yet are paler in color near the hinge than zebra mussels. Quagga mussels are commonly found in waters more than 90 ft. deep and can live directly on a muddy or sandy bottom.

Both quagga and zebra mussels are filter feeders that can remove substantial amounts of phytoplankton from the water. They create competition for native species and can also change the chemical composition of the water increasing the risk of eutrophication.

Quagga Mussel

Asymmetrical shape

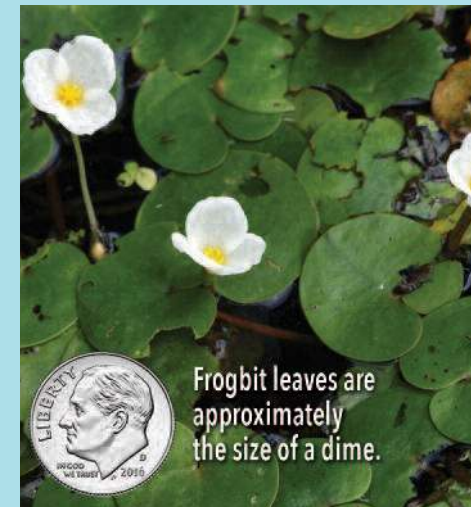
Lacks ridges



Zebra Mussel

Triangular shape

Can stand on flattened hinge side.



Frogbit leaves are approximately the size of a dime.

EUROPEAN FROGBIT

Hydrocharis morsus-ranae

European frogbit is a free-floating aquatic plant that can quickly choke ponds, marshes, ditches, and edges of lakes. Dense layers of interlocking plants and dangling roots can interfere with swimming, boating, fishing, and waterfowl hunting. It can spread by clinging to watercraft, trailers, and equipment. Eradicating established populations is nearly impossible.

Key Identifying Features:

- Resembles a small water lily, but much smaller in size
- The 1/2 inch leaves are smooth, leathery, and have heart-shaped bases
- Flower has 3 symmetrical white petals with yellow center
- Leaves all originate from the base of the plant