

Zebra Mussel Fact Sheet



Zebra Mussels (*Dreissena polymorpha*) are a small shellfish related to snails, oysters, and clams. They are an Aquatic Invasive Species (AIS) originating in the Black and Caspian seas, and through the building of canals in the 18th century allowed the mussels to spread throughout Europe all the way to the United Kingdom. Zebra Mussels are ranked one of the top 100 most destructive invasive species and considered a human-induced global biological invasion.

They arrived in North America in 1988 from a suspected dumping of ships' ballast water navigating the great Lakes system. In Manitoba, zebra mussels were first detected in the South Basin of Lake Winnipeg in 2013, by 2015 it was considered invaded. In 2015 they were found in the North Basin of Lake Winnipeg and larvae were found in Cedar Lake downstream of The Pas near Easterville. By 2019 larvae were found in the Nelson River and is now considered invaded.

Identifying Features



Credit: U of Minnesota

Zebra Mussels are a small freshwater hinged mollusk. You can identify them by:

- their flat underside and triangular shape
- varying zigzagged patterns of black and brown with white and yellow
- average size of 2 to 2.5 cm (up to 4 cm long)

Reproduction, Growth and Movement

On average, zebra mussels live 2-5 years and can reproduce by their second year. Each year, a mature female Zebra Mussel may release up to one million eggs, while the male may release more than two hundred million sperm into the water where fertilization takes place. In approximately two days, the fertilized eggs develop into free-swimming larvae called veligers.

Within 2-3 weeks the microscopic veligers begin to 'settle-out' in the water under the weight of their forming shells and attach to firm, underwater surfaces. They cling to surfaces using thread-like strands called byssal fibers tipped with a strong, sticky substance.

As many as 700,000 mussels can occupy a square meter attaching themselves to solid surfaces such as rocks, submerged wood, plants, native mussels, and even boats and docks. Once attached, they generally stay in one place, but can detach and crawl to a new location if environmental conditions change.

Expansion takes place naturally when veligers flow downstream in current or by wind action. Zebra mussels **do not move upstream** and can only expand to upstream waters, or isolated new lakes, by human activity such as by moving boats, other watercraft, and items that have been in zebra mussel invaded waters.

Ecological Impacts

Zebra mussels feed by filtering large amounts of microscopic plankton from the water which are the building blocks of the food chain. Each mussel can filter one liter of water per day!

This can affect the composition of the aquatic ecosystem by:

- Increasing water clarity allowing sunlight to penetrate deeper which can increase vegetation growth and the potential for toxic algae growth.
- Altering the aquatic food web which can result in changes to habitat and food availability for fish and other aquatic species.
- Potentially affecting fish spawning areas by changing the bottom substrate.

Socio-economic Impacts

In Canada, zebra mussels cause millions of dollars in damage every year. Adult zebra mussels attach themselves to hard surfaces and accumulate.



Credit: Salmon Arm Observer

This can result in:

- a build up of mussels on rocks, docks, boats and motors
- dead sharp mussel shells washing up on beaches and shorelines
- clogged water intake in power stations, municipal and home cottage water supplies
- damages to boat engines by blocking the water intake

What Can We Do?

Unfortunately, **zebra mussels have few natural enemies**, and there is **no** known environmentally safe way to remove them from the lakes once they are infested. Adults can survive out of water periods of 18 to 30 days such as in live wells & bilges in high humidity.

The only way to prevent the spread of Zebra Mussels (and other AIS) into new waterbodies is to **Clean, Drain and Dry** watercraft and/or equipment when leaving any waterbody. **Do Your Part!**

1. CLEAN ALL MUD & VEGETATION FROM BOAT & TRAILERS BEFORE LEAVING THE LAUNCH SITE
2. LOWER YOUR MOTORS TO DRAIN ALL WATER
3. PULL ALL DRAIN PLUGS, INCLUDING BILGE AND LIVE WELLS
4. ALLOW ANCHOR ROPES, PADDLES, AND ITEMS THAT HAVE BEEN IN THE WATER TO DRY BEFORE USING AGAIN
5. KEEP DRAIN PLUGS REMOVED WHEN TRANSPORTING YOUR WATERCRAFT*

This information is provided by:

Citizens for **Protecting Our Northern Waterways Inc.** www.zebramusselprevention.com



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*a watercraft includes boats, canoes, kayaks, personal watercraft