

Zebra & Quagga Mussels

(*Dreissena spp.*)

IMPORTANT: These mussels are not yet known to be in BC waters. Report ALL possible sightings to 1-877-952-7277

Zebra and Quagga Mussels are small, freshwater mollusks. Native to Eastern Europe, they were first discovered in North America in the 1980s in the Great Lakes region. It is believed that both species hitched a ride in the ballast water of ocean liners and were later introduced into our lakes. Since introduction, these mussels are now confirmed in 680 lakes in the United States and the five Great Lakes. In 2013, Zebra Mussels were discovered in Lake Winnipeg, Manitoba. Strong silky threads help these mussels attach to surfaces, and they are easily transported on boat hulls and trailers.

Adult Zebra Mussels:

- Brown, with cream and yellow striped shell
- Triangular shape with one edge flattened
- Typically less than 2.5 cm across
- Left and right shell valves symmetrical with straight midline



Adult Quagga Mussels:

- Variable coloring, from pure white to pale with colored bands
- Typically less than 2.5 cm across (may grow slightly larger than Zebra Mussels)
- Rounded, fan-shaped shell
- Left and right valves asymmetrical with curved midline



HABITAT

- Live in freshwater lakes
- Larvae swim in the water until three weeks of age
- Mature Zebra Mussels always attach to a solid surface
- Adult Quagga Mussels can attach to a solid surface or settle on the lake bottom
- Zebra Mussels occur at lake depths of 1-30 m, but are rarely found below 15 m
- Quagga Mussels occur at lake depths of 1-130 m, but are commonly found down to 30 m

THE PROBLEM

- A single adult female mussel can produce up to one million young per year.
- Mussel larvae are microscopic and easily transported in ballast water, boat bilge, engine cooling systems, bait buckets and live wells.
- Adults grow in big clusters and clog water intake pipes, pumps and boat motors.
- Adults filter large amounts of water, competing for food with native mussels, clams and fish.
- Mussels actively feed on green-algae and may cause an increase in foul smelling blue-green algae.
- Mussels produce toxins that can kill fish and birds and contaminate drinking water.



Established in B.C.

NEW ZEALAND MUD SNAIL

(*Potomopyrgus antipodarum*)



- First spotted in B.C. waters in 2007
- 4-6 mm in length
- Color ranging from grey & dark-brown to light brown
- Out-compete native snails for food
- Densities of up to 300,000 snails/m² have been recorded
- Each snail can produce 230 young per year
- Reproduce asexually, so a single introduced snail can establish a new colony
- Contain little nutritional value and often pass through a predators digestive system alive
- Can readily attach themselves to boots and waders

Only one location in B.C.

ASIAN CLAM

(*Corbicula fluminea*)



- Introduced to North America from Eurasia in 1930's
- Currently in 38 states, including Washington, and one location in B.C., at the mouth of the Fraser River
- Less than 5 cm long
- Yellowish-brown to black shell
- Can live up to 7 years
- Can reach densities of up to 10,000 clams/m²
- Can alter nutrient cycle in lake
- Causes increased aquatic plant growth
- Competes with native molluscs for food and habitat
- Can clog irrigation channels, water intake pipes and pumps
- Spread through the aquarium trade and in bait buckets and water holding areas of boats

**Once these species colonize within a water body, eradication is not an option.
Methods to control established colonies are costly.**

The best way to control these species is to prevent their arrival in the first place.

PREVENTION

The most effective way to ensure our lakes do not become infested with aquatic invertebrates is prevention. Follow these tips:

- **CLEAN** off any visible mussels, plants, mud or other debris from all equipment that enters the water (e.g. boats, trailers, waders, scuba gear).
- **DRAIN** all water from your bilge, ballast, live well and bait buckets onto dry land.
- **DRY** all equipment for 5 days in the sun before entering another water body. If this is not an option, then pressure wash all equipment with hot water (60°C) and towel dry.
- **NEVER** transport live fish between water ways (it's illegal) and **NEVER** empty aquarium fish or plants into the wild.

Possession, release and transport of alive or dead Zebra or Quagga Mussels is banned under BC's Controlled Alien Species Regulations.

Report possible sightings of Zebra and Quagga Mussels to the B.C. Conservation Officer Service's "Report All Poachers and Polluters" (RAPP) hotline: 1 877 952-7277 (toll-free).

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