

SPINY WATER FLEA

Invades Ontario Waters



What is Spiny Water Flea?

Spiny water flea (*Bythotrephes longimanus*) is a predacious zooplankton species introduced to the Great Lakes from Europe. It belongs to the group of organisms known as crustaceans. Shrimp, crayfish and lobster also belong to this group. It is believed that spiny water flea first arrived in North America in the ballast water of ocean crossing ships.

Spiny water flea is about 1 to 1.5 cm long. The colours orange, blue and green may appear on its body and a large black eye can be seen. As its common name suggests, it has a long tail spine with barb-like projections. A red stripe runs about half the length of the tail.

Spiny water flea has a unique reproductive cycle that enables it to become established in a new lake with only one individual. Without mating, a female can produce eggs that develop into identical female offspring. However, in response to an environmental cue (cold weather, declining food sources), some of these eggs can hatch into males. The males mate with the females to produce “resting eggs”, which are later released and fall to the lake bottom where they survive the cold winter and hatch into juvenile females in late spring or early summer. Resting eggs can remain dormant for long periods of time and thus can be easily transported in mud and on fishing equipment to new water bodies.

Where is it found?

The first recorded occurrence of this animal in North America was in Lake Ontario in 1982, and by 1987 it was present in all of the Great Lakes. Its known range in Ontario now includes over 80 inland lakes.

Spiny water flea may prefer deep, cool lakes, however, it has been found in warmer lakes where surface water temperatures can exceed 25°C. Although this flea can swim up and down in the water column, it relies on current and wind to carry it any great distance. Unfortunately, these organisms can also be easily transferred to new areas by human activity.

What does it eat?

Spiny water flea is a predator that feeds on smaller zooplankton (or small animal life). One spiny water flea may eat 20 of these prey organisms per day. When populations of spiny water flea are large, consumption of zooplankton prey can be significant, limiting the amount available for important fish species. With less zooplankton to feed on algae, algal populations can bloom, making lake water less clear.

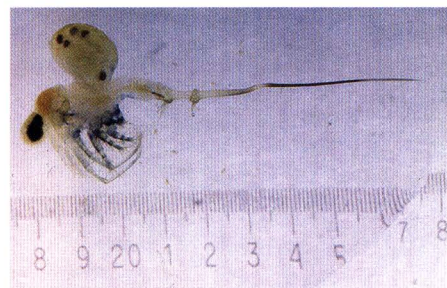


Photo: Bill O'Neill, Earhtones Art and Photography

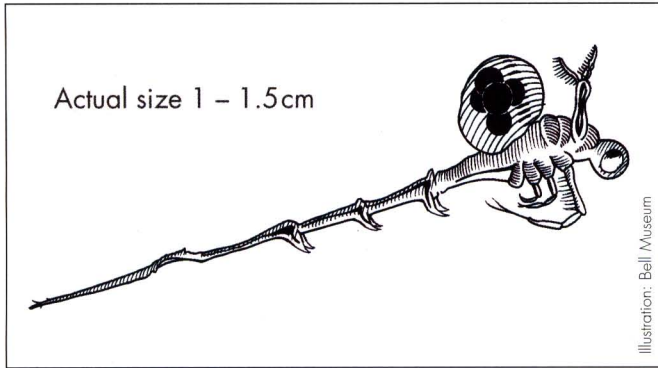
What are the impacts?

There are a number of ways in which spiny water flea may impact Ontario waters. Compared to other zooplankton species, it can eat up to three times more food, competing directly with native zooplankton and fish, and reducing both the amount and kinds of prey available.

Also, although some native fish species feed on spiny water flea as an alternative food source, smaller fish (under 10 cm long) that attempt to eat these fleas cough them up because of their long tail spine. The resulting lack of food or prey for small fish may affect their growth and survival, and contribute to a decline in their numbers.

Adding spiny water flea to the food web in Ontario lakes may also affect biomagnification of contaminants such as mercury (Hg). Currently, research is emerging on the impact of this species to contaminant burdens, which may build through the food web, affecting top predatory fish like lake trout.





Spiny water flea can affect fishing activity as well, becoming entangled in fishing lines and downrigger cables. The animals look like straight pins along the downrigger or line, and may sometimes raise and lower their tails.

You can help!

The Ontario Federation of Anglers and Hunters (O.F.A.H.) and the Ontario Ministry of Natural Resources (OMNR) have set up a toll-free **Invading Species Hotline 1-800-563-7711** and website **www.invadingspecies.com** for you to obtain information on and report sightings of spiny water flea and other invading species.

- **Report sightings.** If you find spiny water flea in a new area, preserve the organism in rubbing alcohol, then call the Invading Species Hotline or contact your local OMNR Office to report your finding and confirm your sample as spiny water flea.
- **Get involved.** Participate in Invading Species Watch, a community based monitoring program to detect and prevent the spread of invading species.
- **Find out more.**
Contact the **Invading Species Hotline 1-800-563-7711**
or visit **www.invadingspecies.com**

Boaters and Anglers – You can help!

Spiny water flea can hitchhike to other waters by boats, boat trailers and other equipment such as fishing gear or snorkeling/scuba gear. Although it cannot be eradicated from a lake once established there, it is extremely important to restrict the animal's movement. To protect your lake and prevent the spread of spiny water flea and other invading species, please take the following precautions before leaving a water body and entering another:

- Inspect your boat, trailer and equipment – remove all plants, animals and mud, and dispose of them on dry land or in the garbage.
- Drain water from motor, live well, bilge and transom wells while on land.
- Do not release live bait! Empty your bait bucket on dry land, or freeze or salt the bait for later use. It is illegal to release live baitfish from one water body into another.
- Remove organisms you can't see on your boat, trailer and equipment by:
 - ◆ Rinsing them with hot water (>40°C), or
 - ◆ Spraying with high pressure water (250 p.s.i.), or
 - ◆ Drying them in the sun for at least 5 days.
 - ◆ Submersing hard-to-clean fishing equipment and nets in hot water (40°C) for ten minutes.

