**Freshwater Jellyfish in Big Gull Lake**
by Lynda Corkum

Cottagers have reported the presence of Freshwater Jellyfish in Big Gull Lake. This is a surprise to many because the relatives of Freshwater Jellyfish are found in the sea. Freshwater Jellyfish are not native to Canada, having arrived originally from China. They now occur in lakes and rivers in temperate climates all over the world. Unlike their marine relatives, Freshwater Jellyfish don't harm humans because their stinging tentacles don't pierce the skin of mammals. There are more than 20 species of Freshwater Jellyfish, but only one freshwater species, *Craspedacusta sowerbii*, occurs in North America (Smith & Alexander Jr. 2008 *J. Plankton Res.* 30:1323-1327).

**Name:** *Craspedacusta sowerbii* (sometimes referred to as *C. sowerbyi*) is named after James Sowerby (1757-1822), an English artist, painter, and natural historian. The species is the taxonomic phylum, Cnidaria, a group of aquatic animals that includes hydra, sea anemones and jellyfish.

**What do they look like?** There are two body forms of Freshwater Jellyfish, the **polyp** and **medusa**. Cottagers see the floating medusa stage, not the polyp. Watch for blooms of medusa in August and September when water is warm and prey are plentiful.

**Polyps**, which form colonies, live on the bottom of lakes and rivers, often attached to rocks. Polyps are cold tolerant and overwinter as resting bodies. Polyps (only 2 to 8 mm long, about ¼ inch) lack tentacles. Polyps reproduce asexually and given the right conditions form a medusa that breaks away from the colony.

**Medusae** are bell or umbrella-shaped bags of jelly that float in the water. The velum, which is the sheet of tissue forming the underside of the bell, extends and folds inward from the margin of the umbrella, ending in a circular opening through which the mouth protrudes. Medusae are white, translucent (5 to 25 mm, the largest about the size of a quarter) animals that grow up to reproduce sexually. Gametes, released into the water, join to form a zygote that develops into a ciliated larva. The larva settles on the bottom to form a polyp. Medusae may form dense blooms in some years, but may be absent in other years.

**What do they eat?** Both polyps and medusae eat zooplankton and so may compete with larval fish for food. The polyp feeds when zooplankton come into contact with the stinging cells at the top of the polyp. These stinging cells surround the mouth opening at the center of the polyp top. By contractions, the polyp engulfs the trapped food. Medusae have short and long tentacles that extend along the edge of the velum. Short tentacles, which sting and paralyze zooplankton, are used for feeding; long tentacles stabilize the animal when it swims.

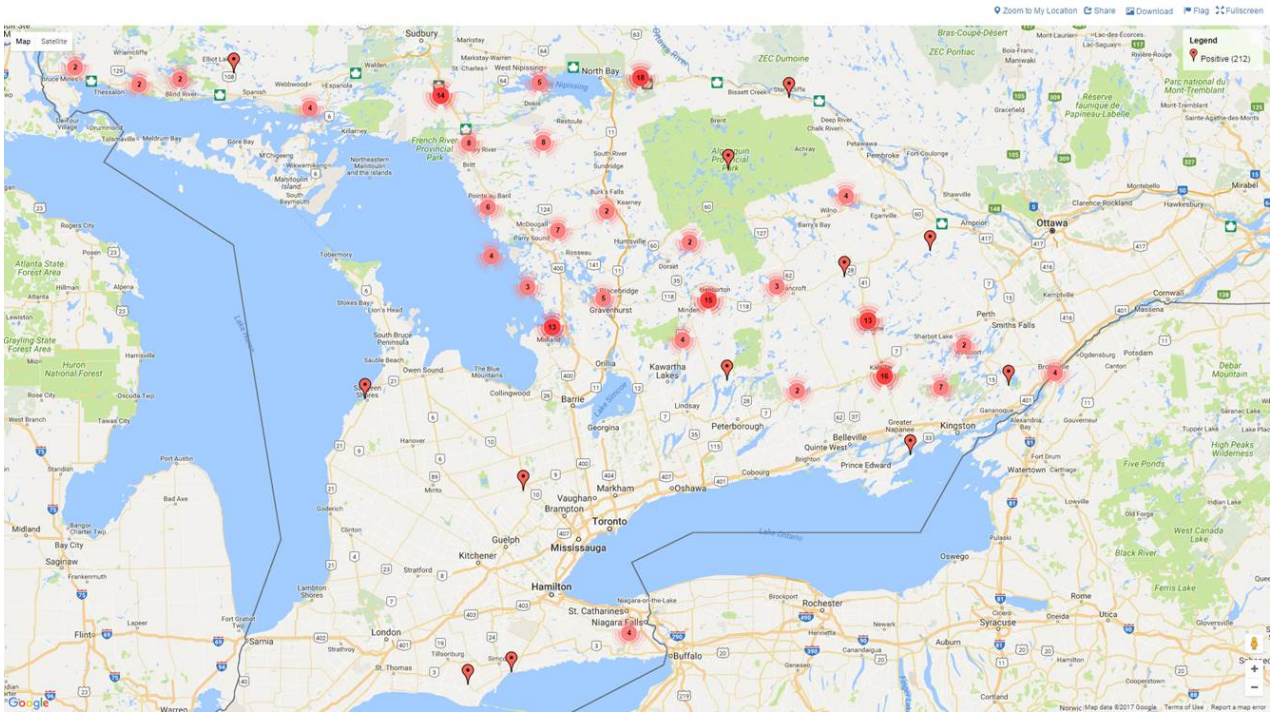
**How did they get here?** Freshwater Jellyfish spread from its native region in China by attaching to aquatic plants such as water hyacinths. Medusae also were transported in the ballast water of ships. Once in North America, Freshwater Jellyfish spread from one lake or river to another by bait bucket transfer by anglers and by attaching to aquatic plants, stocked fish and waterfowl (https://nas.er.usgs.gov/queries/factsheet.aspx?SpeciesID=1068).

**When did they get here?** Freshwater Jellyfish were first reported in the U.S. in Benson Creek, Kentucky (1916) and spread to the Great Lakes (1933) and later to Ontario in Parry Sound Harbour, Georgian Bay (1952) (Mills et al. 1993 *J. Great Lakes Res.* 19:1-54; McAlpine et al. 2002 *J. Freshwater Biol*.17: 341-344). Once in Ontario, Freshwater Jellyfish spread quickly throughout the province. Blooms of jellyfish were first seen in Big Gull Lake 28 August – 3

September 2012 and reported to Terry Peard to add to his many sightings. Other Canadian locations include British Columbia, Manitoba, Quebec and New Brunswick. Because of the lag time between when polyps are established and when medusae are observed, the species is more widespread than realized (Duggan & Eastwood 2012 *Aquatic Invasions* 7:271-275).

**Current provincial distribution of Freshwater Jellyfish**

*Ontario's Invading Species Awareness Program*, a partnership between the Ontario Ministry of Natural Resources and the Ontario Federation of Anglers and Hunters, tracks occurrences of Freshwater Jellyfish through the online application of the **E**arly **D**etection & **D**istribution **M**apping **S**ystem, EDDMapS Ontario (www.eddmaps.org/Ontario). EDDMapS Ontario was developed in partnership with the University of Georgia's Center for Invasive Species and Ecosystem Health. This mapping system allows users to report occurrences of invasive species, either through the website or by using the free App, view distribution maps of invasive species, and view additional information on the species. Many of the records of Freshwater Jellyfish in EDDMapS Ontario are courtesy of Dr. Terry Peard, while other have been submitted directly to EDDMapS Ontario by concerned Ontario citizens.




Distribution map of Freshwater Jellyfish (courtesy of EDDMapSOntario, www.eddmaps.org/Ontario)

**For more information** on Freshwater Jellyfish, please see Dr. Terry Peard's website, www.freshwaterjellyfish.org. Also, see www.eddmaps.org/Ontario. Videos of Freshwater Jellyfish medusa may be seen by searching YouTube.

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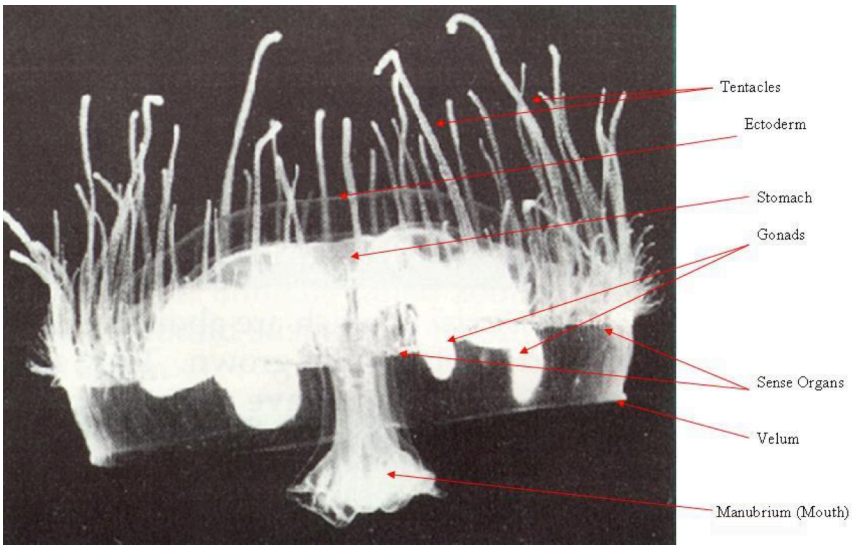
The following photos of the polyp and medusa were obtained from www.freshwaterjellyfish.org with permission from Dr. Terry Peard.

**A double polyp colony with a medusa bud.** The medusa bud is projecting from the upper right edge of the colony. The yellow colony is due to recently feeding on a brine shrimp.




**The medusa**