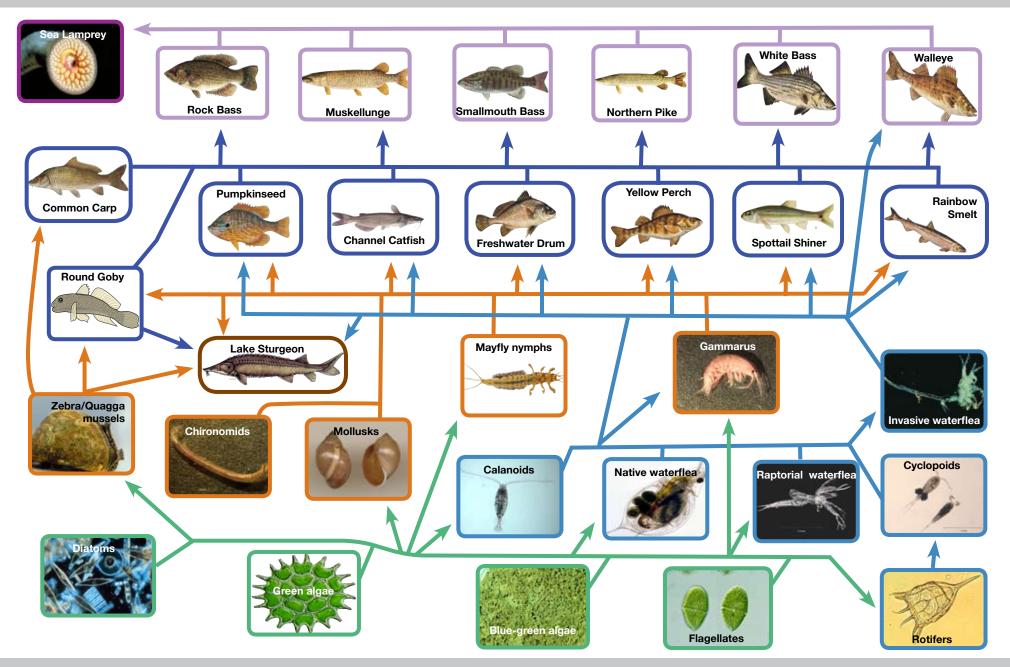


# Lake St. Clair Food Web



Foodweb based on "Impact of exotic invertebrate invaders on food web structure and function in the Great Lakes: A network analysis approach" by Mason, Krause, and Ulanowicz, 2002 - Modifications for Lake St. Clair, 2009.

# Lake St. Clair Food Web

#### Sea Lamprey



**Sea lamprey** (*Petromyzon marinus*). An aggressive, non-native parasite that fastens onto its prey and rasps out a hole with its rough tongue.

### **Piscivores (Fish Eaters)**



White bass (Morone Chrysops). Prefers clear open water in lakes and large rivers. Visual feeders, uses sight instead of smell to find prey.
Smallmouth bass (Micropterus dolomieui). Native coolwater species. Intolerant of pollution so is a good indicator of a healthy environment.
Rock bass (Ambloplites rupestris). Native that prefers clear, rocky, and vegetated stream pools and lake margins. It is carnivorous, and its diet consists of smaller fish, insects, and crustaceans.
Muskellunge (Esox masquinongy). Eats mostly fish but also eats crayfish, frogs,

ducklings, snakes, muskrats, mice, other small mammals and small birds. The mouth is large with many large and hair-like teeth.

**Northern Pike** (*Esox lucius*). As with muskies, pike like the cover of vegetation in the clear, shallow, warm waters near shore. They eat smaller fish – about 90 percent of their diet, but also eat frogs, crayfish, waterfowl, rodents, and other small mammals.

**Walleye** (*Stizostedion vitreum*). Carnivorous night feeders, eating fishes such as yellow perch and freshwater drum, and insects, crayfish, snails, and mudpuppies.

#### **Forage Fish**

	<b>Common carp</b> ( <i>Cyprinus carpio</i> ). Large, omnivorous fish. Uproot plants on which ducks feed, muddy the water, and destroy plants and cover needed by other fish.
	<b>Pumpkinseed</b> ( <i>Lepomis gibbosus</i> ). Found in shallow, cool to moderately warm water. They eat a diverse diet of small prey, such as insects, insect larvae, mollusks, snails and other crustaceans, and small fish.
	<b>Channel catfish</b> ( <i>Ictalurus punctatus</i> ). Prefer cool, deep water with a sand or gravel bottom. Primarily bottom feeders, but also feed at the surface.
	<b>Freshwater drum</b> ( <i>Aplodinotus grunniens</i> ). Gets its name from the odd grunting noises produced by muscles vibrating against the swim bladder.
	Yellow perch ( <i>Perca flavescens</i> ). Native that schools near shore, generally preferring relatively shallow waters near shore.
	<b>Spottail shiner</b> ( <i>Notropis hudsonius</i> ). Occur in a variety of habitats from large lakes and rivers to small streams. They do best in clear waters, and at times become quite abundant offshore.
	<b>Rainbow Smelt</b> ( <i>Osmerus mordax</i> ). Found in both coastal and offshore habitats. Light-sensitive, so prefer deeper, cooler waters during the warmer seasons.
	<b>Round Goby</b> ( <i>Neogobius melanostomus</i> ). Invasive, introduced into the Great Lakes via freighter ballast. Feeds on bivalves, including zebra mussels, crustaceans, insects, and small fishes.

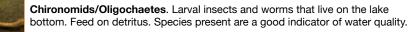
This food web includes only the dominant species.

## Planktivores/Benthivores



**Lake Sturgeon** (*Acipenser fulvscens*). Endangered over most of its historic range. Its diet commonly includes small clams, snails, crayfish, sideswimmers, aquatic insect larvae, algae, and other plant matter.

#### Macroinvertebrates





**Mayfly nymphs** (*Hexagenia* spp.). A burrowing insect larvae found in warm, shallow water bays and basins, usually in soft sediments. The presence of this sensitive organism indicates good water quality conditions.



Amphipods (Gammarus). A common amphipod found in warm, shallow regions.

**Mollusks**. A mixture of native and non-native species of snails and clams are eaten by lake whitefish and other bottom feeding fish.

Zebra and quagga mussels (*Dreissena polymorpha* and *Dreissena bugensis*). Invaded Lake St. Clair in 1988 (zebra); 2001 (quagga), filter-feeders that remove huge quantities of plankton.

#### Zooplankton (Microscopic animals found in the water column)



**Invasive Spiny waterfleas** (*Bythotrephes longimanus*). Visual raptorial predator that can depress native waterflea populations.



**Native Raptorial waterfleas** (*Leptodora kindtii*). Slow moving and patchy distribution of small swarms at relatively low numbers.



**Cyclopoid copepods** (*e.g., Cyclops bicuspidatus*). Carnivorous copepods that feed on rotifers and other microzooplankton.

**Native waterfleas** (*e.g., Daphnia galeata*). Filter-feeding waterfleas that can be important for controlling phytoplankton.

**Calanoid copepods** (*e.g., Diaptomus* spp.). Omnivores that feed on both phytoplankton and microzooplankton.

**Rotifers.** A diverse group of microzooplankton that, depending on species, feed on phytoplankton, detritus, or other microzooplankton.

# Phytoplankton (Algae found in the water column)



**Blue-green algae** (aka Cyanobacteria). Often inedible and frequently toxic; blooms in late summer and can look like spilled paint on the water surface.



**Green algae.** Microscopic (single-celled) plants that form the main support of the summer food web. Also includes large nuisance species such as *Cladophora*.



**Diatoms**. Cold-loving microscopic (single celled) plants encased in silica shells that support the first wave of production in the spring.



**Flagellates**. Motile, single-celled plants or animals frequently found in high numbers. Most eat bacteria and so may help funnel bacterial products back into the food chain.