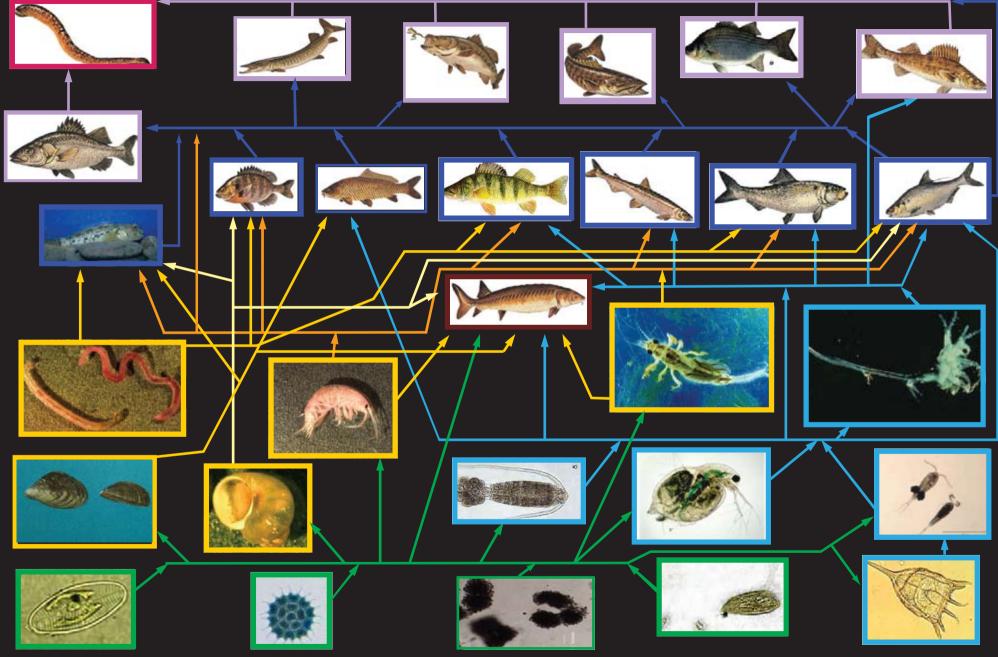


# Lake St. Clair Food Web





Food Web based on model constructed for "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 —2008

#### 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.

White Perch (Morone Americana) - Invaded the Great Lakes through the Erie and Welland canals in 1950. Feeds on invertebrates and fishes.

Smallmouth Bass (Micropterus dolomieu) - Usually in clear, medium-size rivers and lakes but prefer temperatures above 20 deg. C in the summer. Adults eat mostly fish and crayfish.

**Muskellunge** (*Esox masquinongy*) - Most often resides in water less than 4.5 m deep. Eats fish and, occasionally, ducks, and muskrats.

Largemouth Bass (Micropterus Salmoides) - Commonly inhabit small to medium-sized clear lakes that have warm waters, sandy shorelines, and numerous weed beds. Adults consume fishes, crayfish, surface insects, and frogs.

Walleye (Stizostedion vitreum) - Native coolwater species found in nearshore areas.

# Forage Fish



Round Goby (Apollonia melonastumus) - Exotic, found in deep water of the Great Lakes and tributary streams. Feed on bivalves, crustaceans, insects, and small fishes.

Yellow perch (Perca flavescens) - Native that schools near shore, usually at depths less than 30 feet.

Freshwater drum (Aplodinotus grunniens) - Gets its scientific name from its odd gruntgrunting noises, produced by muscles vibrating against the swim bladder. Tolerates both clear and murky water.



Common Carp (Cyprinus carpio) - Native to Asia, was introduced to North America in the late 1800s as a food fish. Eats submerged vegetation and benthos. Alewife (Aloso pseudoharengus) - Atlantic species that invaded in 1949 via the Welland

canal. Gizzard shad (Dorosoma cepedianum) - Commonly grows from 9 to14 inches. Found in

large schools. Has no commercial value. Found in freshwater habitats.

Bluegill (Lepornis macrochirus) - Found to depths of 20 feet in bays, marinas, and rocky bottom areas, especially where vegetation is present.

#### Planktivores/Benthivores



Lake Sturgeon (Acipenser fulvscens) - Listed as a rare species in the U.S. - endangered over most of its historic range. Its diet commonly includes small clams, snails, crayfish, sideswimmers, aquatic insect largvare, algae, and other plant matter.

# **MacroInvertebrates**



Chironomids/Oligochaetes - Larval insects and worms living on the lake bottom. Species present are a good indicator of water quality.



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 mussels (Dreissena polymorpha) - Invaded Lake Erie in 1980's, filter feeders that remove huge quantities of plankton.

# Zooplankton (Microscopic animals found in the water column)



Invasive Spiny waterfleas (Bythotrephes longimanus) - Raptorial predator when found at high densities. Can depress mature water-flea populations.



Cyclopoid copepods (Cyclops bicuspidatus) - One of 11 carnivorous cyclopoid copepod species in Lake Erie.



Native waterfleas (Daphnia galeata) - More than 50 species of native filter-feeding waterfleas live in Lake Erie. Photo Credit : Dr. James F. Haney, 1999



Calanoid copepods (Diaptomus spp.) - Eleven species of native calanoid copepods live in Lake Erie. Calanoid copepods are omnivores but prefer active prey.



Rotifers - Omnivorous microscopic animals that package the smallest particles, including small phytoplankton and detritus into a form that can be eaten by larger zooplankton.

# Phytoplankton (Algae found in the water column)



Blue-green algae - Largely inedible and frequently toxic; blooms in late summer 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.