

AQUATIC HABITAT TYPES IN THE PROJECT AREA (as defined by the Lower St Louis River Habitat Plan)

Lower Estuarine (Dredged) Channel

This habitat type is found in the open water channel just off of the northern edge of Hog Island. The deep-water habitat is periodically disturbed by dredging operations that maintain a channel up to 27 feet deep. Utilized by some fish as wintering habitat, it is considered an important open water feeding area for fish eating birds. Lake level fluctuations have the strongest influence on this habitat type.



Lower Estuary (Industrial Harbor) Flats

The industrial harbor flats are moderately deep to shallow areas adjacent to historically modified shorelines which were once heavily vegetated but now support little emergent wetland vegetation. The bottoms of these areas once likely held the greatest mussel abundance in the estuary. Lake level fluctuations have the strongest influence on this habitat type.



Industrially-Influenced Bays

The Hog Island Inlet may be considered a member of this aquatic habitat type. Generally 4-5 feet deep or less, they are often found with varying occurrences of emergent and submergent aquatic vegetation. Typically containing sediments that are highly contaminated, the Hog Island inlet was dredged in 2005 to remove much of the contaminated sediments. Lake level fluctuations have a strong influence on this habitat type with the Newton Creek tributary to the Inlet providing a secondary influence.



Clay-Influenced Tributaries

These tributaries have their own hydrologic regime, not dominated by Lake Superior or the St. Louis River. The first or second order, medium to low gradient, groundwater and surface water influenced streams flow through lacustrine red clay deposits. These tributaries, such as Newton Creek, provide habitat for a variety of native fish found in the estuary in spite of having been altered by ditches, wetland draining and other hydrologic modifications in the watersheds.



HOG ISLAND FISH POPULATION STATUS

- ★ The Duluth-Superior Harbor area supports a diverse fish community of over 50 species that use the St. Louis River and the estuary and its tributaries for spawning (Lindgren et al., 1997).
- ★ Loss of habitat, water quality impacts from a developing shoreline and watershed, exotic species introductions, and overfishing had severely degraded the fishery over the last century.
- ★ Recent water quality improvements over the last 25 years have significantly improved the fishery.
- ★ Hog Island Inlet is part of the nearshore zone area of Lake Superior. Virtually all species of Great Lakes fish use the nearshore waters for one or more of their critical life stages or functions. These include: permanent residence; migratory pathway for anadromous fish; temporary nursery and feeding grounds; and refuges for young-of-the-year fish (SOLEC, 1997).
- ★ Stocking of fish such as walleye, northern pike, and muskellunge since the late 1980's has helped to improve the harbor area gamefish stock.
- ★ The historically significant lake sturgeon populations were restored to the harbor area through intensive stocking.
- ★ Prior to water quality improvements begun in the 1980's, high chemical oxygen demand from organic pollutants in the harbor favored species such as northern pike, black bullhead, yellow perch, and white sucker. Since then black bullhead and yellow perch have declined in abundance while predator species increased in numbers largely due to stocking efforts.
- ★ Milestones for Fish (Lower St Louis River Habitat Plan)
 - Fish populations are not significantly affected by alterations and loss of physical habitat, by proliferation of exotic species, or by exposure to contaminants.
 - Spawning habitat below Fond du Lac Dam is optimized for pertinent species with specific reduction in mortality of adults by standing and desiccation of eggs.
 - Lake sturgeon have re-established self-sustaining status in the St. Louis River estuary and western Lake Superior.
 - Exotic fish species (Eurasian ruffe, round goby, tubenose goby) have become balanced members of the fish community with no significant impacts on native fish species.
 - No significant pathological alterations in fish.

FISH SPECIES IN THE PROJECT AREA



Lake Sturgeon (*Acipenser fulvescens*)



Walleye (*Sander vitreus vitreus*)



Rock Bass (*Ambloplites rupestris*)



Muskellunge (*Esox masquinongy*)



Freshwater Drum (*Aplodinotus grunniens*)



Black Bullhead (*Ictalurus melas*)



White Sucker (*Catostomus commersoni*)



Longnose Sucker (*Catostomus catostomus*)



Lake Whitefish (*Coregonus clupeaformis*)



Sea Lamprey (*Petromyzon marinus*)



Emerald Shiner (*Notropis atherinoides*)



Pumpkinseed (*Lepomis gibbosus*)



Yellow Perch (*Perca flavescens*)



Northern Pike (*Esox lucius*)



Common Carp (*Cyprinus carpio*)



Common Shiner (*Luxilus cornutus*)

Creek Chub (*Semotilus atromaculatus*)