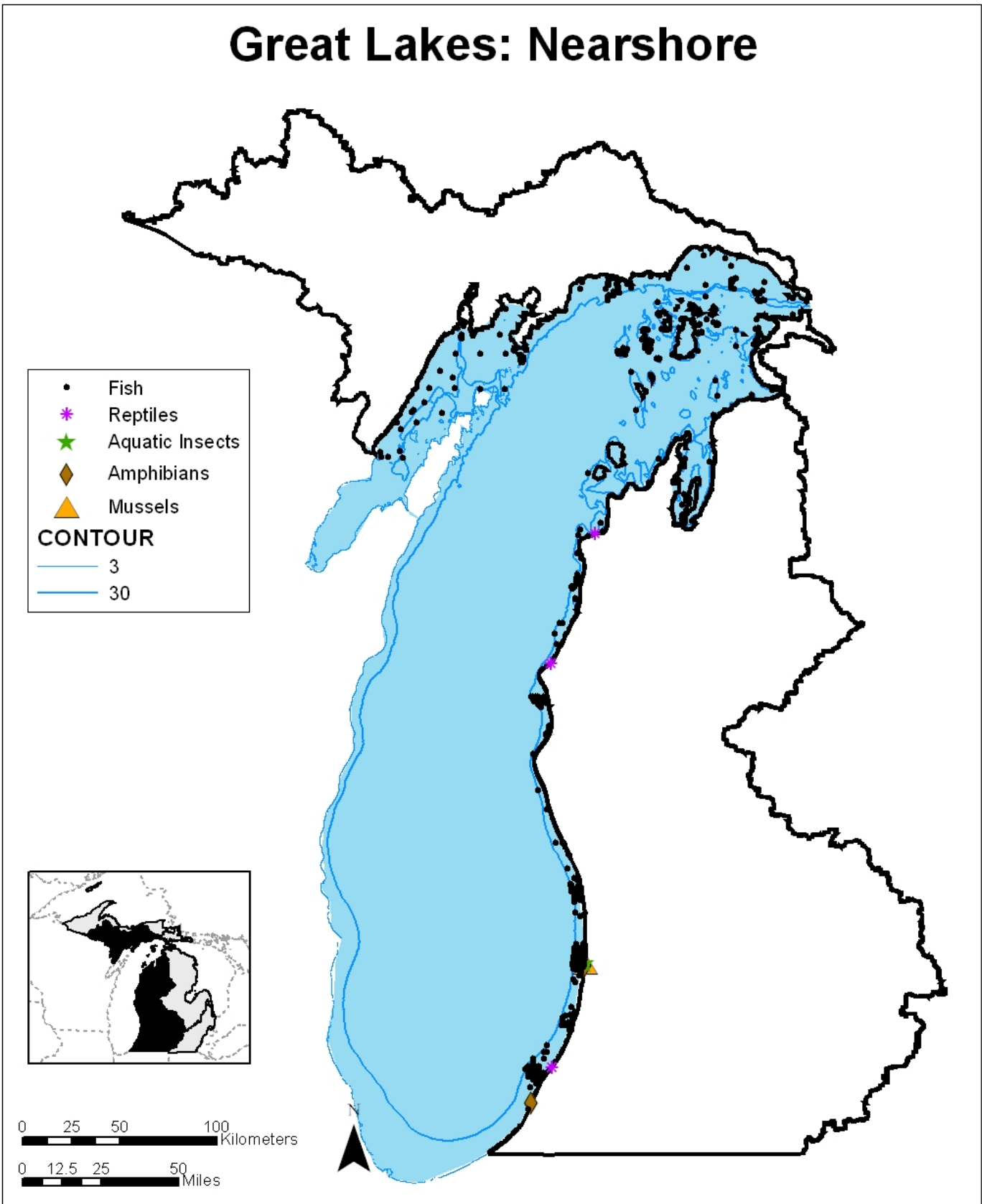


# Great Lakes: Nearshore



## Great Lakes: Nearshore

### Description

Nearshore areas of the Great Lakes range from 3 to 30 meters in depth. This area includes both submergent and emergent aquatic vegetation, but not marshes. Great Lakes are considered to be the Michigan waters of Lake Michigan.

### General Condition of Feature

This habitat is considered 70% in good to excellent condition, 20% in fair condition, and 10% in degraded to very degraded condition.

### Associated Species of Greatest Conservation Need

#### MUSSELS

Specific associations with this landscape feature were not found in the literature

#### INSECTS

Specific associations with this landscape feature were not found in the literature

#### FISH

lake sturgeon (*Acipenser fulvescens*)  
spotted gar (*Lepisosteus oculatus*)  
mooneye (*Hiodon tergisus*)  
river herring (*Moxostoma carinatum*)  
brown bullhead (*Ameiurus nebulosus*)

#### FISH cont.

cisco or lake herring (*Coregonus artedii*)  
shortjaw cisco (*Coregonus zenithicus*)  
slimy sculpin (*Cottus cognatus*)  
spoonhead sculpin (*Cottus ricei*)  
sauger (*Sander canadensis*)

#### AMPHIBIANS

mudpuppy (*Necturus maculosus maculosus*)

#### REPTILES

Specific associations with this landscape feature were not found in the literature

### Associated Threats

#### MODIFICATION OF NATURAL PROCESSES

- Altered hydrologic regimes: (low threat)
- Climate change: (low threat)
- Fragmentation: (low threat)

#### POLLUTION

- Altered nutrient inflows: Increased nutrients; Periphyton development on gravel shoals (low threat)
- Altered sediment loads: Sedimentation from streams (erosion in uplands)
- Pesticides and herbicides
- Urban, municipal, and industrial pollution: Airborne and point source pollution ends up in species at top of food chain
- Thermal changes: Water thermal pollution (low threat)

#### HABITAT CONVERSION

- Dredging and channelization: Dredging and spoils; Dredged Channels
- Riparian modification: Marina development (low threat)

#### BIOLOGICAL INTERACTIONS

- Invasive plants and animals: Exotic species colonization on water intakes and outfalls; Goby; Ruffe; spiny water flea; Sea lamprey; Invasive species competition; Fish species compete with native species for food; bird populations affect predation of young fish; Zebra mussels

#### CONSUMPTIVE BIOLOGICAL RESOURCE USE

- Forestry practices: Log salvage (low threat)
- Removal of wildlife: (low threat)

#### EDUCATION

- Social attitudes: (low threat)

### Conservation Actions Needed (Threats addressed)

#### LAND, WATER & SPECIES MANAGEMENT

- Control and prevent aquatic invasive species introductions and establishments (invasive plants and animals)
- Develop integrated pest management plans (invasive plants and animals)
- Maintain or establish riparian buffers of at least 50 ft., but 500 ft. or wider maximizes conservation benefits, but 500 ft. or wider maximizes conservation benefits (altered sediment loads, riparian modification)
- Protect and rehabilitate wetland and floodplain functions (altered nutrient inflows, pesticides and herbicides)
- Survey erosion sites in watershed and develop strategies to reduce identified problems (altered sediment loads)

#### LAW & POLICY

- Avoid open water disposal of uncontaminated materials (dredging and channelization)

**MICHIGAN'S WILDLIFE ACTION PLAN**  
**AQUATIC SYSTEMS: LAKE MICHIGAN BASIN**

- Continued vigilance and cooperation on preventing more aquatic invasive species establishments (invasive plants and animals)
- Encourage best management practices (pesticides and herbicides)
- Encourage townships to separate combined sewer systems (altered nutrient inflows)
- Enforce the use of sediment barriers and best management practices during road siting, construction, and maintenance (altered sediment loads)
- Implement ballast control regulations (invasive plants and animals)
- Reduce effluent flow (Urban, municipal, and industrial pollution)
- Reduce pesticide and herbicide use (pesticides and herbicides)
- Restrict dredging and channelization activities, especially during spawning and migration seasons and around mussel beds (dredging and channelization)
- Strengthen and continue enforcing air pollution laws (Urban, municipal, and industrial pollution)
- Strengthen existing environmental laws and enforcement of permits controlling effluent discharge (thermal pollution, Urban, municipal, and industrial pollution)

**EDUCATION & AWARENESS**

- Educate the public on the use of and reasons for maintaining septic systems (altered nutrient inflows)
- Increase education to boaters, scuba divers, and others on the spread of invasive species and preventative steps (invasive plants and animals, social attitudes)

**Research and Survey Needs**

- Aquatic invasive species: prevention of new establishments, control, rapid response protocols, ballast water, Chicago canal
- Continue to work with GLFC Lake Michigan Technical Advisory Group implementing Lake Michigan aquatic community objectives
- Determine ways to expand educational efforts to the public on their stewardship role
- Establish baseline estimates of *Dreissena* abundance
- Modeling of habitats so relationships and linkages between components and response of the biotic community can be better understood
- Survey erosion sites within watersheds and develop strategies to reduce identified problems
- Survey social attitudes and determine effective communication methods

**Monitoring**

- Aquatic invasive species
- Dredging and channelization
- Effluent discharges
- Expand monitoring of the lower trophic levels to track changes in the food web and contaminant uptake
- Lake Michigan tributary water flows
- Macrophyte removals
- Pesticides and herbicides