



Inland Lakes: Medium Lakes

Description

Medium lakes are permanent standing water bodies 100 to 999 acres in area. This group has moderately diverse features for chemical and biological variables. In general, these lakes will tend to have increasing shoreline complexity (lakes with many bays) and increasing basin complexity (lakes with more than one deep hole) compared to small lakes and ponds. Stratification status can range from fully stratified throughout the summer season, to no stratification. In lakes with stratification, there is development of true open-water (pelagic) zones that are distinct from shallow nearshore zones. These lakes can span a broader temperature range (from relatively cold water to relatively warm water) compared to larger lakes, with temperature depending on amount of groundwater inflows, lake depth, and climate. Winter oxygen levels are also variable and depend on lake depth, but are generally higher than in small lakes and ponds.

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

SNAILS

spindle lymnaea (*Acella haldemani*)

INSECTS

stygian shadowdragon (*Neurocordulia yamaskanensis*)

lake emerald (*Somatochlora cingulata*)

a stonefly (*Arcynopteryx compacta*)

FISH

bigmouth shiner (*Notropis dorsalis*)

brown bullhead (*Ameiurus nebulosus*)

FISH cont.

slimy sculpin (*Cottus cognatus*)

spoonhead sculpin (*Cottus ricei*)

least darter (*Etheostoma microperca*)

AMPHIBIANS

mudpuppy (*Necturus maculosus maculosus*)

pickerel frog (*Rana palustris*)

REPTILES

Blanding's turtle (*Emydoidea blandingii*)

Associated Threats

POLLUTION

- Altered nutrient inflows: (low threat)
- Altered sediment loads: (low threat)
- Pesticides and herbicides: (low threat)
- Urban, municipal, and industrial pollution: Mercury loading

HABITAT CONVERSION

- Dams: (low threat)
- Dredging and channelization: (low threat)
- Riparian modifications: Marine/dock/pier development; Increased shoreline development and in turn degradation is primary threat
- Wetland modifications: Shoreline development

BIOLOGICAL INTERACTIONS

- Invasive plants and animals: Eurasian Milfoil

CONSUMPTIVE BIOLOGICAL RESOURCE USE

- Removal of wildlife: (low threat)

NON-CONSUMPTIVE BIOLOGICAL RESOURCE USE

- Other structure removal: (low threat)
- Macrophyte removal: (low threat)

Conservation Actions Needed (Threats addressed)

LAND & WATER PROTECTION

- Continue to support landowner incentive programs to foster conservation on private lands (variety of threats)
- Create and expand conservation easements (riparian modifications, wetland modification)
- Support land conservancy purchase of undeveloped land (riparian modifications, wetland modification)

LAND, WATER & SPECIES MANAGEMENT

- Control and prevent aquatic invasive species introductions and establishments (invasive plants and animals)
- Develop management plans for medium lakes (invasive plants and animals)
- Maintain or establish riparian buffers of at least 50 ft., but 500 ft. or wider maximizes conservation benefits (riparian modifications)

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

- Protect existing natural wetlands and rehabilitate degraded wetlands (urban, municipal, and industrial pollution pollution)
- Removal of invasive vegetation should preserve 60-80% of native vegetation (invasive plants and animals)
- Require all vegetation management to occur in conjunction with a watershed management plan (invasive plants and animals)
- Soften or remove hard shoreline structures (riparian modifications)
- Use natural materials or soft engineering instead of hard structures for shoreline modification (riparian modifications)

LAW & POLICY

- Continued vigilance and cooperation on preventing aquatic invasive species establishments (invasive plants and animals)
- Enact and enforce shoreline protection regulations (riparian modifications)
- Implement and continually improve storm water and non-point source best management practices (urban, municipal, and industrial pollution)
- Include wetland protections in zoning and planning ordinances
- Reduce effluent flow (urban, municipal, and industrial pollution)
- Strengthen existing water quality and air pollution laws (variety of threats)
- Strengthen wetland regulations, mitigation requirements, and enforcement
- Work with Drain Commissioners to allow or closely mimic natural hydrologic processes on lake-level control structures (altered hydrologic regimes)
- Work with Drain Commissioners to use natural processes to manage sediment and flows and decrease the amount of channelization needed (dredging and channelization)
- Work with local governments to develop and refine planning and zoning regulations and ordinances that consider natural processes (variety of threats)
- Work with local officials on setback and buffer ordinances (riparian modifications)

EDUCATION & AWARENESS

- Educate landowners and lake users on preventing the spread of invasive species (invasive plants and animals)

Research and Survey Needs

- Determine effective prevention, control, and survey techniques for aquatic invasive species
- Determine important aquatic nursery areas
- Determine life history requirements for SGCN associated with medium lakes
- Determine amount of shoreline development in medium lakes
- Determine the number of natural lake outlets and socially acceptable ways of maintaining them
- Establish effective methods of communicating with the public and their role in stewardship, especially shoreline modification(docks, seawalls, piers)

Monitoring

- Aquatic invasive species
- Indicator species
- Land use changes
- Riparian modifications
- Wetland modification