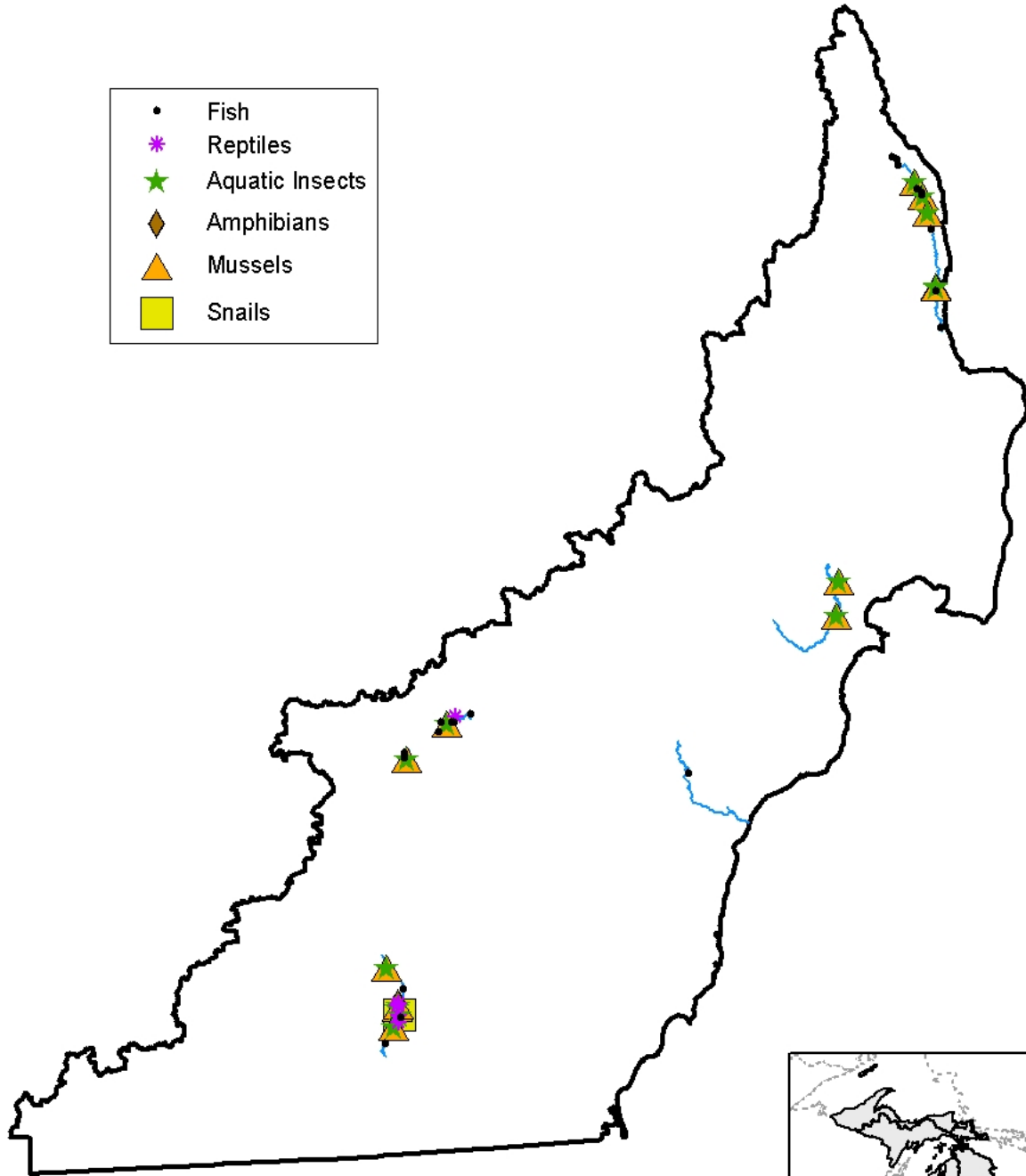


## Rivers: Warm large rivers

- Fish
- \* Reptiles
- ★ Aquatic Insects
- ◆ Amphibians
- ▲ Mussels
- Snails



## Rivers: Warm Large Rivers

### Description

Large rivers are wadeable and non-wadeable systems that have a midpoint catchment area from 180 to 620 square miles. Large rivers are intermediate stream order systems with diverse substrate and habitat. Warm large rivers in Michigan are generally runoff-driven systems with low to moderate baseflow, high peak flows, and low gradient. The majority flow through unconfined glacial or alluvial valleys. July weekly mean temperatures in these systems are greater than 22°C (72°F). These systems are common in the Lake Erie basin.

### General Condition of Feature

This habitat is considered 35% in good to excellent condition, 30% in fair condition, and 35% 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

#### *SNAILS*

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*

river chub (*Nocomis micropogon*)  
pugnose minnow (*Opsopoeodus emiliae*)

#### *FISH cont.*

lake chubsucker (*Erimyzon sucetta*)  
spotted sucker (*Minytrema melanops*)  
river redhorse (*Moxostoma carinatum*)  
tadpole madtom (*Noturus gyrinus*)  
pirate perch (*Aphredoderus sayanus*)

#### *AMPHIBIANS*

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

#### *REPTILES*

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

### Associated Threats

#### *MODIFICATION OF NATURAL PROCESSES*

- Altered hydrologic regimes: Increased flashiness due to faster runoff due to urbanization; Road crossings
- Fragmentation: Road crossings

#### *POLLUTION*

- Altered sediment loads: Sediment inputs from erosion and development

#### *HABITAT CONVERSION*

- Dams
- Dredging and channelization: Channelization
- Riparian modification: Changes in riparian land use
- Wetland modification: Loss of wetlands (low threat)

### Conservation Actions Needed (Threats addressed)

#### *LAND, WATER & SPECIES MANAGEMENT*

- Allow seasonal flooding (altered hydrologic regimes)
- Encourage use of natural materials or soft engineering techniques for any shoreline modification (riparian modification)
- Maintain, rehabilitate, and protect riparian areas (altered hydrologic regimes, altered sediment loads, riparian modification)
- Preserve woody riparian vegetation and in-stream woody structure (riparian modification)
- Protect and rehabilitate wetlands and floodplains (altered hydrologic regimes, riparian modification, wetland modification)
- Protect the natural hydrologic regime of streams by protecting existing wetlands and floodplains (altered hydrologic regimes, riparian modification, wetland modification)
- Work with road commissions on maintenance and placement of new bridges (altered hydrologic regimes, altered sediment loads, fragmentation)

#### *LAW & POLICY*

- Operate dams in run-of-the-river mode (altered hydrologic regimes, dams)
- Protect the public trust by requiring dam owners to make appropriate financial provisions for future dam removal (dams)
- Remove unnecessary dams to rehabilitate natural hydrology and stream habitat (altered hydrologic regimes, dams, fragmentation)

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

Research and Survey Needs

- Determine amount and condition of riparian areas and investigate how much riparian buffer is needed to preserve different conservation values
- Determine number and condition of road crossings
- Establish effective methods of communicating with the public and enhancing their stewardship role
- Investigate life history strategies of SGCN where this information is lacking
- Explore alternatives to dams
- Model hydrologic flow of entire watersheds

Monitoring

- Dam operations
- Indicator species
- Riparian modification (extent, condition)
- Road crossings
- Stream water temperatures