



## Rivers: Cool Medium Rivers

### Description

Medium rivers are wadeable systems that have a midpoint catchment area from 40 to 179 square miles. They are intermediate stream order. Substrate and habitat are variable and more diverse than headwater systems.

Cool medium rivers in Michigan are usually runoff-driven with low to moderate baseflow and fair to moderate peak flow, with the exception of a few systems that are groundwater-driven. The majority of these rivers are low gradient and flow through unconfined glacial or alluvial valleys. July weekly mean temperature in cool medium rivers ranges from 19-22°C (66-72°F).

### General Condition of Feature

This habitat is considered 60% in good to excellent condition, 35% in fair condition, and 5% in degraded to very degraded condition.

### Associated Species of Greatest Conservation Need

#### *INSECTS*

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

#### *FISH*

brassy minnow (*Hybognathus hankinsoni*)  
bigmouth shiner (*Notropis dorsalis*)

#### *FISH cont.*

brown bullhead (*Ameiurus nebulosus*)

#### *REPTILES*

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

### Associated Threats

#### *MODIFICATION OF NATURAL PROCESSES*

- Altered hydrologic regimes: Altered flow regime (low threat)

#### *POLLUTION*

- Altered sediment loads: Sedimentation (low threat)

#### *HABITAT CONVERSION*

- Dams
- Dredging and channelization: Channelization (low threat)
- Riparian modifications: Canopy removal; Riparian development; Road/stream crossings

#### *BIOLOGICAL INTERACTIONS*

- Invasive plants and animals: (low threat)

#### *CONSUMPTIVE BIOLOGICAL RESOURCE USE*

- Forestry practices

### Conservation Actions Needed (Threats addressed)

#### *LAND & WATER PROTECTION*

- Create and expand conservation easements (variety of threats)
- Support landowner incentive programs to foster conservation on private land (variety of threats)

#### *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)
- Engineered drainage channels should mimic natural streams channel stability, i.e., channel dimension, pattern, and profile (dredging and channelization)
- Maintain or establish riparian buffers of at least 50 ft., but 500 ft. or wider maximizes conservation benefits (altered hydrologic regimes, altered sediment loads, forestry practices, riparian modifications)
- Maintain or rehabilitate streams to original flow paths and hydrologic functions, i.e., throughflow and wetlands (altered hydrologic regimes)
- Manage beaver populations for a variety of natural resources uses (dams)
- Soften or remove hard river structures (riparian modifications)

#### *LAW & POLICY*

- Continue Natural Rivers planning (variety of threats)
- Continue to work on forest certification endeavors (forestry practices)
- Continued vigilance and cooperation on preventing more aquatic invasive species establishments (invasive plants and animals)
- Encourage clustered development rather than evenly spaced home lots (riparian modifications)
- Encourage green space planning (riparian modifications)

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

- Encourage use of natural materials or soft engineering techniques for any riparian modifications (riparian modifications)
- Enforce the use of sediment barriers and best management practices during road siting, construction, and maintenance (altered sediment loads)
- Impose mitigation practices to minimize logging effects (forestry practices)
- Limit water withdrawals in flow-limited or groundwater-fed systems (altered hydrologic regimes)
- Protect and rehabilitate groundwater recharge by requiring that development-related runoff be captured by infiltration basins (altered hydrologic regimes)
- Remove dams to rehabilitate natural hydrology (altered hydrologic regimes)
- Remove lake-level control structures (altered hydrologic regimes, dams)
- Restrict dredging and channelization activities, especially during spawning and migrations season and around mussel beds (dredging and channelization)
- Use best management practices (variety of threats)
- 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)
- Work with road commissions or forest management agencies on maintenance and placement of new bridges (altered hydrologic regimes, altered sediment loads)

**EDUCATION & AWARENESS**

- Educate legislators, other policy makers, landowners, and the public on the importance of headwater systems and natural processes (variety of threats)
- Increase education to boaters and others on preventing the spread of aquatic invasive species (invasive plants and animals)

**CAPACITY BUILDING**

- Support watershed councils and regional conservation groups (variety of threats)

**Research and Survey Needs**

- Determine number and condition of stream crossings
- Determine stream temperature trends in areas lacking data
- Model hydrologic flows
- Survey loadings of sediment within watershed and develop strategies to reduce identified problems

**Monitoring**

- Forestry practices
- Indicator species
- Riparian modifications
- Road crossings
- Stream modification
- Water temperature