



Rivers: 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 and water temperatures range from cold to warm. This landscape feature is a catch-all for species with no recorded water temperature preferences as reported in primary literature.

General Condition of Feature

This habitat is considered 55% in good to excellent condition, 35% in fair condition, and 10% in degraded to very degraded condition.

Associated Species of Greatest Conservation Need

MUSSELS

eastern elliptio (*Elliptio complanata*)

CRAYFISH

devil crawfish (*Cambarus diogenes*)

INSECTS

a sand minnow mayfly (*Siphloplecton basale*)

splendid clubtail (*Gomphus lineatifrons*)

rapids clubtail (*Gomphus quadricolor*)

stygian shadowdragon (*Neurocordulia yamaskanensis*)

a stonefly (*Arcynopteryx compacta*)

a stonefly (*Helopicus nalatus*)

FISH

Specific associations with this landscape feature were not found in the literature that are not associated with water temperatures

AMPHIBIANS

mudpuppy (*Necturus maculosus maculosus*)

northern leopard frog (*Rana pipiens*)

REPTILES

Blanding's turtle (*Emydoidea blandingii*)

wood turtle (*Glyptemys insculpta*)

Associated Threats

MODIFICATION OF NATURAL PROCESSES

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

POLLUTION

- Altered sediment loads: Sedimentation

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: Logging

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)
- Encourage use of natural materials or soft engineering techniques for any riparian modifications (riparian modifications)
- Engineered drainage channels should mimic natural stream channel stability, i.e., channel dimension, pattern, and profile (dredging and channelization)
- Maintain or rehabilitate 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, fragmentation)
- 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)

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

- Continued vigilance and cooperation on preventing 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)
- 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 (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 and forest management agencies on maintenance and placement of new bridges (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 life history requirements for SGCN associated with medium rivers, especially water temperature preferences
- Determine stream temperatures in areas lacking data
- Determine the number and condition of road and stream crossings
- Inventory dams and determine those that no longer serve a useful purpose
- Inventory erosion sites and conduct remediation activities
- Inventory stream crossings and address those which are eroding or interfering with stream flow
- Inventory stream enclosures and determine those that no longer serve a useful purpose
- Model hydrologic flow of entire watersheds
- Survey loadings of nutrients to streams and develop strategies to reduce problems
- Test and compare benefits of best management practice's as conservation tools

Monitoring

- Dam operations
- Land use changes
- Logging activities
- Riparian modifications
- Sediment loading
- Stream modification
- Water temperatures