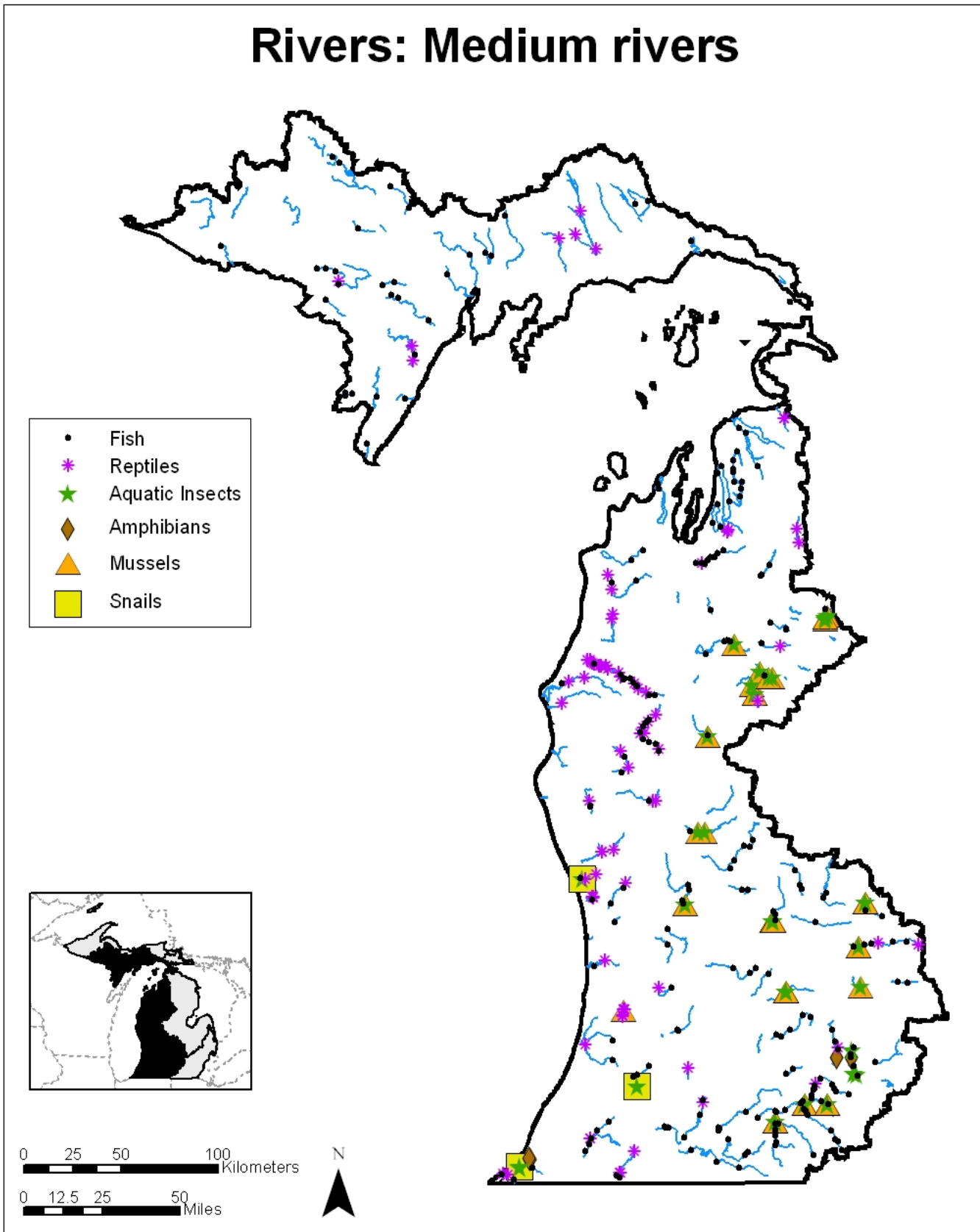


Rivers: Medium rivers



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 range in temperatures 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 50% in good to excellent condition, 20% in fair condition, and 30% in degraded to very degraded condition.

Associated Species of Greatest Conservation Need

MUSSELS

elktoe (*Alasmidonta marginata*)
slippershell mussel (*Alasmidonta viridis*)
round pigtoe (*Pleurobema coccineum*)
ellipse (*Venustaconcha ellipsiformis*)
purple wartyback (*Cyclonaias tuberculata*)
pimpleback (*Quadrula pustulosa*)
creek heelsplitter (*Lasmigona compressa*)
snuffbox (*Epioblasma triquetra*)
wavy-rayed lampmussel (*Lampsilis fasciola*)
black sandshell (*Ligumia recta*)
fawnsfoot (*Truncilla donaciformis*)

SNAILS

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

CRAYFISH

devil crawfish (*Cambarus diogenes*)

INSECTS

a sand minnow mayfly (*Siphloplecton basale*)

INSECTS cont.

splendid clubtail (*Gomphus lineatifrons*)
rapids clubtail (*Gomphus quadricolor*)
riverine snaketail (*Stylurus amnicola*)
Laura's snaketail (*Stylurus laurae*)
a stonefly (*Arcynopteryx compacta*)
a stonefly (*Helopicus nalatus*)
Douglas Stenelmis riffle beetle (*Stenelmis douglasensis*)

AMPHIBIANS

mudpuppy (*Necturus maculosus maculosus*)
Fowler's toad (*Bufo fowleri*)
Blanchard's cricket frog (*Acris crepitans blanchardi*)
northern leopard frog (*Rana pipiens*)

REPTILES

copperbelly water snake (*Nerodia erythrogaster neglecta*)
Blanding's turtle (*Emydoidea blandingii*)
wood turtle (*Glyptemys insculpta*)

Associated Threats

MODIFICATION OF NATURAL PROCESSES

- Altered hydrologic regimes: Water withdrawals
- Fragmentation: Development of all types: roads, building, dams, etc.

POLLUTION

- Altered sediment loads: Erosion due to road crossings; Sedimentation

HABITAT CONVERSION

- Dams: Beaver dams, man-made dams
- Dredging and channelization: Channelization (low threat)
- Incompatible natural resources management: Erosion control reduces turtle nesting habitat (low threat)
- Riparian modification: Development alters habitat to stream edge and is a high threat to amphibians, reptiles and fish communities

BIOLOGICAL INTERACTIONS

- Invasive plants and animals: Invasive plant species alter habitats for insects (low threat)

NON-CONSUMPTIVE BIOLOGICAL RESOURCE USE

- Other structure removal: Removal of large woody debris (low threat)

EDUCATION

- Social attitudes: (low threat)

Conservation Actions Needed (Threats addressed)

LAND & WATER PROTECTION

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

LAND, WATER & SPECIES MANAGEMENT

- Continued vigilance and cooperation on preventing more aquatic invasive species establishments (invasive plants and animals)
- Control and prevent aquatic invasive species introductions and establishments (invasive plants and animals)
- Decrease the amount of impervious surfaces within watershed (altered hydrologic regimes)

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

- Maintain or establish riparian buffers of at least 50 ft., but 500 ft. or wider maximizes conservation benefits (altered hydrologic regimes, altered sediment loads, riparian modification, thermal changes)
- Maintain or rehabilitate river to original flow path and hydrologic functions, i.e., seasonal flooding, throughflow (altered hydrologic regimes)
- Manage beaver populations for a variety of natural resource uses (altered hydrologic regimes, dams)
- Soften or remove hard stream structures (riparian modification)
- Survey erosion sites within watersheds and develop strategies to reduce identified problems (altered sediment loads)
- Work with road commissions on placement and maintenance of stream crossings (altered sediment loads)
- Work with road commissions to fix perched culverts that are barriers to aquatic species movements (altered hydrologic regimes, fragmentation)

LAW & POLICY

- Assess dam siting to ensure minimal affects and require fish passage both upstream and downstream
- Continue Natural Rivers planning (variety of threats)
- Encourage green space planning (riparian modification)
- Encourage use of bridges over culverts for new crossings (altered hydrologic regimes, fragmentation)
- Encourage use of natural materials or soft engineering techniques for any river modification (riparian modification)
- Enforce the use of sediment barriers and best management practices during road siting, construction, and maintenance (altered sediment loads)
- If culverts are necessary, use single large capacity culverts that match bankfull channel width (altered hydrologic regimes, fragmentation)
- Implement and continually improve storm water and non-point source best management practices (altered hydrologic regimes)
- Limit water withdrawals in flow-limited or groundwater fed systems (altered hydrologic regimes)
- Protect and rehabilitate groundwater recharge by requiring that all development-related runoff be captured by infiltration basins (altered hydrologic regimes)
- Protect the public trust by requiring dam owners to make appropriate financial provisions for future dam removal or perpetual maintenance (dams)
- Remove dams to rehabilitate natural hydrology and connectivity of system (altered hydrologic regimes, dams, fragmentation)
- Remove lake-level control structures (altered hydrologic regimes, dams)
- Require existing dams to operate mimicking natural flow conditions (altered hydrologic regimes, dams)
- Strengthen existing water quality laws (variety of threats)
- Use best management practices (variety of threats)
- Work with Drain Commissioners to use natural channel processes to allow a stream to manage sediment and flow and decrease the amount of channelization needed (altered hydrologic regimes, altered sediment loads, 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 modification)

EDUCATION & AWARENESS

- Continue educating the public on preventing the spread of aquatic invasive species (invasive plants and animals)
- Educate legislators, other policy makers, and the public on natural processes (social attitudes)
- Work with and educate ORV groups to provide environmentally friendly stream crossings (altered sediment loads)

CAPACITY BUILDING

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

Research and Survey Needs

- Determine amount and condition of riparian buffer
- Determine life history requirements for SGCN associated with medium rivers, especially water temperature preferences
- Determine mussel distributions
- Determine stream temperatures in areas lacking data
- Determine the number and condition of road and stream crossings
- Determine the number and condition of areas that are disconnected from the river
- Determine the number of groundwater withdrawals in the basin
- Determine ways to decrease temperature swings from retention and detention basins in urbanized watersheds
- Document the number of water withdrawal locations and amounts
- Develop effective methods of communication with the public about stewardship
- 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
- Inventory wetlands and floodplains and determine their condition
- 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 modification
- Sediment loading
- Stream modification
- Water temperatures
- Water withdrawals
- Wetland modification