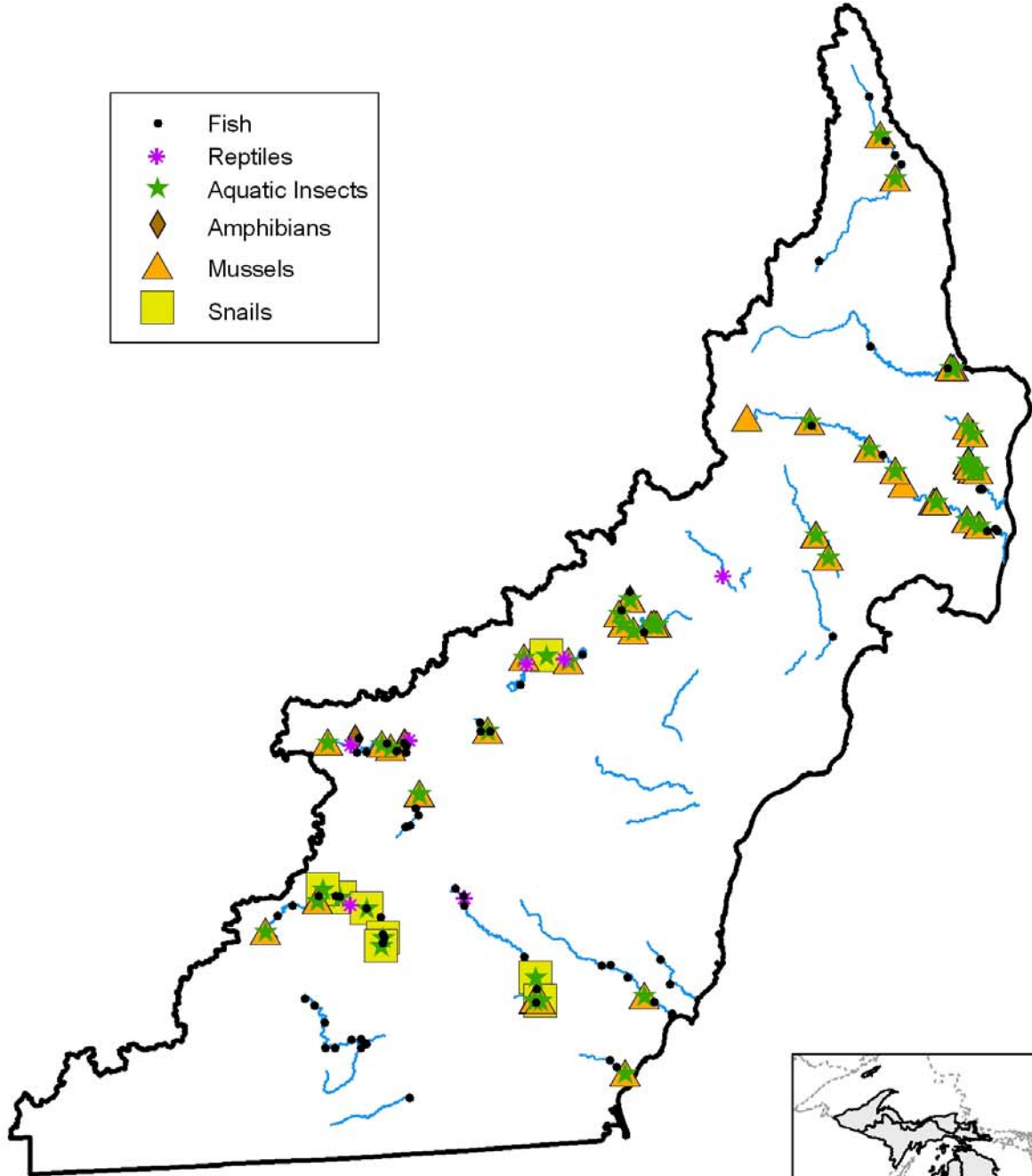
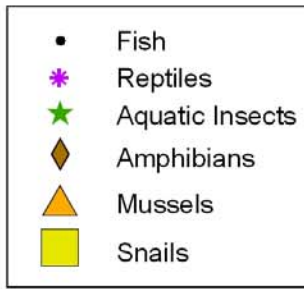


Rivers: Medium rivers



Rivers: Medium Rivers

Description

Medium rivers are wadeable systems that have a midpoint catchment area from 40 to 179 square miles. They are intermediate order. Substrate and habitat are variable and more diverse than headwater systems and can range in water temperature 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 20% in good to excellent condition, 40% in fair condition, and 40% 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*)
clubshell (*Pleurobema clava*)
pimpleback (*Quadrula pustulosa*)
creek heelsplitter (*Lasmigona compressa*)
salamander mussel (*Simpsonaias ambigua*)
white catspaw (*Epioblasma obliquata perobliqua*)
northern riffleshell (*Epioblasma torulosa rangiana*)
snuffbox (*Epioblasma triquetra*)
wavy-rayed lampmussel (*Lampsilis fasciola*)
black sandshell (*Ligumia recta*)
threehorn wartyback (*Obliquaria reflexa*)
round hickorynut (*Obovaria subrotunda*)
kidneyshell (*Ptychobranchus fasciolaris*)
purple lilliput (*Toxolasma lividus*)
lilliput (*Toxolasma parvus*)
fawnsfoot (*Truncilla donaciformis*)
rayed bean (*Villosa fabalis*)

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*)
splendid clubtail (*Gomphus lineatifrons*)
rapids clubtail (*Gomphus quadricolor*)
Laura's snaketail (*Stylurus laurae*)
a stonefly (*Helopicus nalatus*)

FISH

brindled madtom (*Noturus miurus*)
northern madtom (*Noturus stigmosus*)

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*)

Associated Threats

MODIFICATION OF NATURAL PROCESSES

- Altered hydrologic regimes: Dams and altered flows; Increased runoff ; Due to development and storm water management; Increased runoff due to urbanization; Especially water input from surface sources, affecting fluvial hydraulics and channel conditions, storm flow (hydrographs); Enclosed streams
- Fragmentation

POLLUTION

- Altered nutrient inflows: Water quality; nutrient and organic enrichments; Surface runoff - nutrients
- Altered sediment loads: Erosion; Siltation; Sedimentation
- Pesticides and herbicides
- Thermal changes: Altered temperature regime
- Urban, municipal, and industrial pollution: Surface runoff - contaminants

HABITAT CONVERSION

- Dams: Dams and altered flows; Impoundments
- Dredging and channelization: Channelization
- Riparian modification: Loss of floodplain; Lack of woody debris; Development in riparian zones; Riparian vegetation removal
- Wetland modification: Loss of wetlands (low threat)

BIOLOGICAL INTERACTIONS

- Invasive plants and animals: (low threat)

EDUCATION

- Social attitudes: Lack of understanding by riparian owners

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

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 modification (riparian modification)
- Maintain or rehabilitate natural corridors between wetlands and uplands (fragmentation, riparian modification)
- Maintain or establish riparian buffers to at least 50 ft., but 500 ft. or wider maximizes conservation benefits (altered hydrologic regimes, altered sediment loads, riparian modification)
- Preserve or rehabilitate woody riparian vegetation (riparian modification)
- Rehabilitate damaged wetland and stream hydrology (altered hydrologic regimes)
- Rehabilitate original hydrologic functions (altered hydrologic regimes)
- Rehabilitate streams to original flow paths (altered hydrologic regimes)
- Soften or remove hard stream riparian structures (riparian modification)
- Use sediment barriers and Best management practices during road and stream crossing constructions (altered sediment loads)
- Work with road commissions on maintenance and placement of new bridges (altered hydrologic regimes, fragmentation)

LAW & POLICY

- Avoid stream relocations (altered hydrologic regimes, dredging and channelization)
- Encourage townships to separate combined sewer systems (altered nutrient inflows)
- If culverts are necessary, use single large capacity culverts that match bankfull width (altered hydrologic regimes, fragmentation)
- Protect existing natural wetlands (wetland modification)
- Protect the public trust by requiring dam owners to make appropriate financial provisions for future dam removal (dams)
- Reduce effluent inflow (Urban, municipal, and industrial pollution)
- Remove dams to rehabilitate habitat (altered hydrologic regimes, dams, fragmentation)
- Remove unnecessary or abandoned dams, streams crossings, or enclosures (altered hydrologic regimes, fragmentation)
- Require remaining dams to operate flows to provide for run-of-the-river (altered hydrologic regimes, dams)
- Restrict dredging during spawning or migration seasons of fish and around mussel beds (dredging and channelization)
- Strengthen existing environmental laws and enforcement of permits controlling effluent discharge (thermal changes, Urban, municipal, and industrial pollution)
- Work with Drain Commissioners to limit amount of woody structure removed from a system (altered sediment loads)
- Work with local planning and zoning to develop ordinances that include natural processes (altered hydrologic regimes, altered sediment loads, riparian modification, wetland modification)

EDUCATION & AWARENESS

- Create awareness of environmental issues (social attitudes)
- Educate legislators, local planning boards, and other policy makers on the importance of natural processes (social attitudes)
- Educate private landowners and work with conservation groups to emphasize the value of riparian areas and woody structure in streams (riparian modification, social attitudes)
- Educate the public on prevention and control of aquatic invasive species (invasive plants and animals, social attitudes)

Research and Survey Needs

- Determine amount of riparian buffer needed to preserve different conservation values
- Determine life history requirements for SGCN associated with medium rivers, especially water temperature preferences
- Establish effective methods of communication with the public about stewardship
- Survey loadings of nutrients to streams and develop strategies to reduce problems
- Update the dam inventory and determine those dams which no longer serve a useful purpose

Monitoring

- Effluent discharges: waste water treatment plants, septic systems, industrial
- Invasive species
- Riparian modification (extent, condition, etc.)
- Stream temperatures