



Source: Major Rivers and Streams - Michigan Geographic Framework version 4b. Minor Rivers and Streams - Michigan Geographic Framework version 4b. Associated Natural Communities data - Michigan Natural Features Inventory Biotics database.

Inland wetlands/water: River/stream/riparian/floodplain corridor

Description

Floodplains are low-lying areas adjacent to streams and rivers that are subject to periodic over-the-bank flooding and cycles of erosion and deposition, which allow for exchanges of energy and nutrients between terrestrial and aquatic systems. The soils tend to be high in nutrients. Species composition and community structure vary regionally along with varying flooding frequency and duration. Silver maple (*Acer saccharinum*), green ash (*Fraxinus pennsylvanica*) and cottonwood (*Populus deltoides*) are major overstory dominants.

General Condition of Feature

About 80% of the river and stream riparian areas in the Western Upper Peninsula are considered to be in fair or good condition as wildlife habitat. Most of the remaining areas are considered to be degraded or very degraded. River and stream riparian areas include natural communities that are considered rare, uncommon, or imperiled in the State.

Associated Natural Communities

Emergent Marsh	Rich Conifer Swamp
Hardwood-Conifer Swamp	Southern Floodplain Forest
Northern Shrub Thicket	Submergent Marsh
Northern Wet Meadow	

Associated Species of Greatest Conservation Need

CRAYFISH

- devil crawfish (*Cambarus diogenes*)
- digger crayfish (*Fallicambarus fodiens*)

INSECTS

- splendid clubtail (*Gomphus lineatifrons*)
- rapids clubtail (*Gomphus quadricolor*)
- extra-striped snaketail (*Ophiogomphus anomalus*)
- pygmy snaketail (*Ophiogomphus howei*)
- riverine snaketail (*Stylurus amnicola*)
- elusive snaketail (*Stylurus notatus*)
- arrowhead spiketail (*Cordulegaster obliqua*)
- stygian shadowdragon (*Neurocordulia yamaskanensis*)
- lake emerald (*Somatochlora cingulata*)
- a tiger beetle (*Cicindela hirticollis rhodensis*)
- a tiger beetle (*Cicindela limbalis*)
- tawny crescent (*Phyciodes batesii*)
- hoary comma (*Polygonia gracilis*)

AMPHIBIANS

- blue-spotted salamander (*Ambystoma laterale*)
- spotted salamander (*Ambystoma maculatum*)
- boreal chorus frog (*Pseudacris triseriata maculata*)
- western chorus frog (*Pseudacris triseriata triseriata*)
- pickerel frog (*Rana palustris*)
- northern leopard frog (*Rana pipiens*)

REPTILES

- western fox snake (*Elaphe vulpina*)
- Blanding's turtle (*Emydoidea blandingii*)
- wood turtle (*Glyptemys insculpta*)

BIRDS

- American Black Duck (*Anas rubripes*)
- Pied-billed Grebe (*Podilymbus podiceps*)

BIRDS cont.

- Great Blue Heron (*Ardea herodias*)
- Osprey (*Pandion haliaetus*)
- Bald Eagle (*Haliaeetus leucocephalus*)
- Northern Harrier (*Circus cyaneus*)
- Cooper's Hawk (*Accipiter cooperii*)
- Red-shouldered Hawk (*Buteo lineatus*)
- Peregrine Falcon (*Falco peregrinus*)
- American Coot (*Fulica americana*)
- Spotted Sandpiper (*Actitis macularia*)
- American Woodcock (*Scolopax minor*)
- Northern Shrike (*Lanius excubitor*)
- Gray Jay (*Perisoreus canadensis*)
- Wood Thrush (*Hylocichla mustelina*)
- Northern Parula (*Parula americana*)
- Eastern Meadowlark (*Sturnella magna*)

MAMMALS

- arctic shrew (*Sorex arcticus*)
- pygmy shrew (*Sorex hoyi*)
- water shrew (*Sorex palustris*)
- silver-haired bat (*Lasionycteris noctivagans*)
- red bat (*Lasiurus borealis*)
- hoary bat (*Lasiurus cinereus*)
- northern bat or northern myotis (*Myotis septentrionalis*)
- eastern pipistrelle (*Pipistrellus subflavus*)
- gray wolf (*Canis lupus*)
- cougar (*Puma concolor*)
- least weasel (*Mustela nivalis*)
- moose (*Alces alces*)
- least chipmunk (*Tamias minimus*)
- woodland jumping mouse (*Napaeozapus insignis*)

Associated Threats

MODIFICATION OF NATURAL PROCESSES

- Altered hydrologic regimes: Hydroelectric dams modify the natural flow in these systems. Hard top surfaces (e.g. roads and driveways) can result in storm surge events.
- Fragmentation

MICHIGAN'S WILDLIFE ACTION PLAN
TERRESTRIAL SYSTEMS: WESTERN UPPER PENINSULA

HABITAT CONVERSION

- Industrial, residential, and recreational development: Roads and road crossings have the potential to increase nutrient loads, increase sedimentation, and alter hydrologic regimes. Housing development to the edge of riparian areas can have the same effects.
- Dams: Hydroelectric dams modify the natural flow in these systems.
- Dredging and channelization
- Incompatible natural resource management: Changes in the deposition of coarse woody debris impact the quality of riparian areas. A lack of buffers along riparian edges increases sensitivity to forestry practices in adjacent uplands.

POLLUTION

- Urban, municipal, and industrial pollution: Erosion and siltation degrade water quality.
- Pesticides and herbicides

NON-CONSUMPTIVE BIOLOGICAL RESOURCE USE

- Non-consumptive recreation: Uncontrolled ATV and ORV use can impact these areas. Trails along riparian areas may contribute to erosion.

BIOLOGICAL INTERACTIONS

- Invasive plants and animals: Exotic worms increase sedimentation through rapid consumption of leaf litter and increased exposure of the forest floor. Invasive species such as rusty crawfish (*Orconectes rusticus*) may affect wildlife communities.
- Disease, pathogens, and parasites
- Other biological interactions: White-tailed deer (*Odocoileus virginianus*) browse hinders establishment of vegetation, increasing vulnerability to erosion.

Conservation Actions Needed [Threats addressed]

LAND & WATER PROTECTION

- Expand conservation easement programs [variety of threats]
- Support and expand conservation purchase of high quality occurrences [variety of threats]

LAND, WATER, & SPECIES MANAGEMENT

- Manage to approximate natural disturbance regimes by restoring water flow patterns. Remove dams to restore natural flows, where possible. [Altered hydrologic regimes; Dams; Dredging and channelization]
- Develop and implement plans for invasive species control and prevention. [Invasive plants and animals]
- Develop and implement disease control and monitoring plans. [Disease, pathogens and parasites]
- Manage deer densities to allow regeneration of woody vegetation. [Other biological interactions]
- Restore severe and moderately eroding streambanks using natural materials and by mimicking natural processes. [Altered hydrologic regimes, Dredging and channelization]
- Where possible, motorized vehicle trails should be located a minimum of 100 feet (and preferably more than 500 feet) from rivers, streams, lakes and other wetlands except at designated crossings. [Non-consumptive recreation]
- Road, trail, and pipeline systems should be planned to avoid stream crossings and riparian corridors whenever practical. When crossings are unavoidable, they should be designed to preserve and enhance natural stream processes. [Industrial, residential, and recreational development]
- Use best management practices for development, management, and recreational activities around lakes, streams, and wetlands to maintain natural shoreline stability (thereby reducing the need for restoration or artificial structures). [Industrial, residential, and recreational development, Non-consumptive recreation]
- Use best management practices for development or management activities to limit soil, nutrient, and pesticide runoff into aquatic ecosystems. [Industrial, residential, and recreational development, Incompatible natural resource management]
- Where large diameter tree snags and coarse woody debris are occasional or rare, seek to increase their volume. [Incompatible natural resource management]
- Maintain physical habitat characteristics associated with freshwater mussel beds and lake sturgeon spawning areas. [Habitat conversion—multiple]
- Support Landowner Incentive Programs to foster conservation on private land [variety of threats]
- Maintain or establish riparian buffers of at least 50 ft., but 500 ft. or wider maximizes conservation benefits [variety of threats]
- Maintain and rehabilitate natural corridors between wetlands and to representative upland habitats [fragmentation]

LAW & POLICY

- Work with municipalities to promote planning and zoning insuring adequate protection for wetlands and shorelines and to control the placement of road crossings. Develop local ordinances to retain larger parcel sizes in wetland complexes which contain riparian systems. [Fragmentation; Industrial, residential, and recreational development; Dams; Dredging and channelization]
- Develop new and enforce existing regulations to reduce airborne pollutants which may contribute to acid precipitation. [Urban, municipal, and industrial pollution]

- Develop and enforce regulations to curtail recreational activities that cause significant damage. [Non-consumptive recreation]

EDUCATION & AWARENESS

- Promote agricultural practices which reduce the use of pesticides and fertilizers. [Pesticides and herbicides]

RECREATION

- Promote responsible ATV and ORV use. [Non-consumptive recreation]

Research and Survey Needs

- Conduct a statewide wetlands inventory.
- Evaluate the impacts of modifications of natural hydrologic regimes and local water chemistry.
- A common classification system to define wetlands is needed.
- A better understanding is needed of the techniques and results of riparian restoration.
- Evaluate the value to wildlife of these systems for connecting other landscape features.
- Evaluate the role of managed wetlands in contributing to landscape diversity. Is there a difference in the value to wildlife between intensive wetland management and passive wetland management?
- Assess the impact of wetland creation by beavers. Do these impacts vary regionally?
- Document the historic and current range of variation between riparian systems. This includes variables such as species composition and size.
- Assess the influence of storm water influx on the value to wildlife of riparian systems.
- Evaluate the impact of channelization of riverine systems on the value to wildlife.
- Identify invasive species that may degrade the value of riparian corridors for wildlife. Develop techniques to control invasive species. Common invasive species include glossy buckthorn (*Rhamnus frangula*), garlic mustard (*Alliaria petiolata*) and common carp (*Cyprinus carpio*).
- Develop best management practices for development, management, and recreational activities around lakes, streams, and wetlands to maintain natural shoreline stability (thereby reducing the need for restoration or artificial structures).
- Develop and test best management practices for development or management activities to limit soil, nutrient, and pesticide runoff into aquatic ecosystems.
- Assess management techniques used in and around riparian systems to develop management guidelines for landowners.

Monitoring

- Track riparian acreage, composition, distribution and modification across the landscape.
- Identify and track floristic composition and diversity.
- Track water level and flow fluctuations and its impacts on vegetation and wildlife.
- Track water chemistry and quality trends.