



## 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 half of the river and stream riparian areas in the Northern Lower Peninsula are considered to be in fair or good condition as wildlife habitat and about 15% is considered to be in excellent condition. The remaining areas are considered degraded or very degraded. Several specific river and stream riparian natural communities are classified as 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

#### SNAILS

- six-whorl vertigo (*Vertigo morsei*)
- spike-lip crater (*Appalachina sayana*)

#### CRAYFISH

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

#### INSECTS

- splendid clubtail (*Gomphus lineatifrons*)
- rapids clubtail (*Gomphus quadricolor*)
- riverine snaketail (*Stylurus amnicola*)
- elusive snaketail (*Stylurus notatus*)
- russet-tipped clubtail (*Stylurus plagiatus*)
- tiger spiketail (*Cordulegaster erronea*)
- arrowhead spiketail (*Cordulegaster obliqua*)
- Hine's emerald dragonfly (*Somatochlora hineana*)
- a tiger beetle (*Cicindela hirticollis rhodensis*)
- a tiger beetle (*Cicindela limbalis*)
- a tiger beetle (*Cicindela macra*)
- tawny crescent (*Phyciodes batesii*)
- 3-striped oncocnemis (*Oncocnemis piffardi*)

#### AMPHIBIANS

- blue-spotted salamander (*Ambystoma laterale*)
- spotted salamander (*Ambystoma maculatum*)
- eastern tiger salamander (*Ambystoma tigrinum tigrinum*)
- Fowler's toad (*Bufo fowleri*)
- western chorus frog (*Pseudacris triseriata triseriata*)
- pickerel frog (*Rana palustris*)
- northern leopard frog (*Rana pipiens*)

#### REPTILES

- eastern fox snake (*Elaphe gloydi*)
- black rat snake (*Elaphe obsoleta obsoleta*)
- queen snake (*Regina septemvittata*)
- eastern massasauga (*Sistrurus catenatus catenatus*)
- spotted turtle (*Clemmys guttata*)
- Blanding's turtle (*Emydoidea blandingii*)

#### REPTILES cont.

- wood turtle (*Glyptemys insculpta*)
- eastern box turtle (*Terrapene carolina carolina*)

#### BIRDS

- American Black Duck (*Anas rubripes*)
- Pied-billed Grebe (*Podilymbus podiceps*)
- 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*)
- American Coot (*Fulica americana*)
- Spotted Sandpiper (*Actitis macularia*)
- American Woodcock (*Scolopax minor*)
- Acadian Flycatcher (*Empidonax virescens*)
- Northern Shrike (*Lanius excubitor*)
- White-eyed Vireo (*Vireo griseus*)
- Wood Thrush (*Hylocichla mustelina*)
- Blue-winged Warbler (*Vermivora pinus*)
- Northern Parula (*Parula americana*)
- Cerulean Warbler (*Dendroica cerulea*)
- Prothonotary Warbler (*Protonotaria citrea*)
- Worm-eating Warbler (*Helmitheros vermivorus*)
- Louisiana Waterthrush (*Seiurus motacilla*)
- Hooded Warbler (*Wilsonia citrina*)
- Eastern Meadowlark (*Sturnella magna*)

#### MAMMALS

- 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*)
- Indiana bat or Indiana myotis (*Myotis sodalis*)
- eastern pipistrelle (*Pipistrellus subflavus*)
- least weasel (*Mustela nivalis*)
- woodland jumping mouse (*Napaeozapus insignis*)

### Associated Threats

#### *MODIFICATION OF NATURAL PROCESSES*

- Grazing and mowing patterns
- Altered hydrologic regimes: Bank stabilization may alter water flow.
- Fragmentation

#### *HABITAT CONVERSION*

- Industrial, residential, and recreational development: Poorly placed road crossings may alter water flow.
- Wetland modifications
- Dams
- Dredging and channelization
- Incompatible natural resource management

#### *POLLUTION*

- Urban, municipal, and industrial: Lawn grooming to the edge of riparian areas may contribute to sedimentation, erosion, and nitrification due to fertilizers.

#### *CONSUMPTIVE BIOLOGICAL RESOURCE USE*

- Removal of non-timber flora: Removal of woody debris may reduce the value of riparian systems for wildlife.

#### *NON-CONSUMPTIVE BIOLOGICAL RESOURCE USE*

- Non-consumptive recreation: Recreational canoeing, kayaking, and tubing may impact riparian systems. Uncontrolled use of ATVs and ORVs may contribute to erosion and siltation.

#### *BIOLOGICAL INTERACTIONS*

- Invasive plants and animals
- Other biological interactions: Beaver (*Castor canadensis*) damming activities may alter riparian systems.

### 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. [Altered hydrologic regimes]
- Institute invasive species monitoring, prevention and control programs. [Invasive plants and animals]
- Manage local beaver densities to maintain riparian system quality. [Other biological interactions]
- Work with land managers to develop priorities for riparian management. [Incompatible natural resource management]
- Develop best management practices which address the value of riparian systems to wildlife. [Incompatible natural resource management, Removal of non-timber flora]
- 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, Wetland modifications, 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*

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

## MICHIGAN'S WILDLIFE ACTION PLAN

### TERRESTRIAL SYSTEMS: NORTHERN LOWER PENINSULA

#### *EDUCATION & AWARENESS*

- Create awareness in the general public of the value to wildlife of natural shoreline and shoreline vegetation in riparian systems. [Urban, municipal, and industrial pollution; Industrial, residential, and recreational development; Removal of non-timber flora]
- Promote lawn maintenance practices which minimize the use of chemical fertilizers and herbicides. [Urban, municipal, and industrial pollution]

#### *RECREATION*

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

#### Research and Survey Needs

- Conduct a statewide wetlands inventory.
- Evaluate the impacts of modifications to 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.
- 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).
- Evaluate the wildlife value of these systems for connecting other landscape features.
- Evaluate the role of managed wetlands in contributing to landscape diversity. How do flooded cornfields impact diversity? Is there a difference in wildlife value 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 wildlife value of riparian systems.
- Evaluate the impact of channelization of riverine systems on wildlife value.
- 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 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.