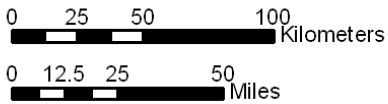
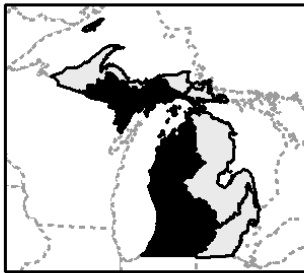


Aquatic Characteristic: Woody Structure



Aquatic Characteristic: Woody Structure

Description

Woody structure is defined as the physical structuring under water by woody material of various sizes both live and dead. This can include coarse (logs) and fine (twigs) woody debris, as well as tree or shrub roots within the water.

General Condition of Feature

This habitat is considered 30% in good to excellent condition, 25% in fair condition, and 45% in degraded to very degraded condition.

Associated Species of Greatest Conservation Need

INSECTS

stygian shadowdragon (*Neurocordulia yamaskanensis*)

FISH

finescale dace (*Phoxinus neogaeus*)

AMPHIBIANS

blue-spotted salamander (*Ambystoma laterale*)

eastern tiger salamander (*Ambystoma tigrinum tigrinum*)

four-toed salamander (*Hemidactylium scutatum*)

AMPHIBIANS cont.

mudpuppy (*Necturus maculosus maculosus*)

pickerel frog (*Rana palustris*)

northern leopard frog (*Rana pipiens*)

REPTILES

Blanding's turtle (*Emydoidea blandingii*)

wood turtle (*Glyptemys insculpta*)

MAMMALS

water shrew (*Sorex palustris*)

Associated Threats

MODIFICATION OF NATURAL PROCESSES

- Altered hydrologic regimes: Flow modification; Altered flows remove woody structure; High peaking flows blow out woody structure
- Climate change: (low threat)
- Fragmentation

POLLUTION

- Altered sediment loads: Covers woody structure

HABITAT CONVERSION

- Dams: Block inputs; High peaking flows blow out woody structure
- Dredging and channelization: Channelization
- Incompatible natural resources management
- Riparian modification: Shoreline development; Unregulated development; Riparian development along waterways typically results in loss of woody debris; Riparian forests tend to be too young to generate much LWD yet and much that was in streams was removed
- Wetland modification

BIOLOGICAL INTERACTIONS

- Disease, pathogens, and parasites: (low threat)
- Invasive plants and animals: (low threat)

CONSUMPTIVE BIOLOGICAL RESOURCE USE

- Forestry practices: Timber harvest that clear cuts up to edge of stream removes woody inputs into streams; Timber harvest; Log salvage
- Mining practices
- Removal of wildlife
- Other structure removal: Recreational canoeists remove woody debris; Log salvage

EDUCATION

- Lack of scientific knowledge
- Social attitudes

Conservation Actions Needed (Threats addressed)

LAND, WATER & SPECIES MANAGEMENT

- Allow seasonal flooding (altered hydrologic regimes)
- Maintain or establish woody riparian buffers of at least 50 ft. (altered hydrologic regimes, altered sediment loads, forestry practices, mining practices, riparian modification)
- Maintain or rehabilitate river to original flow path and hydrologic functions (altered hydrologic regimes, fragmentation)
- Maintain or rehabilitate woody structure (other structure removal)

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

- Preserve woody riparian vegetation to reduce sedimentation (altered sediment loads, dredging and channelization, other structure removal)
- Protect and rehabilitate wetland and floodplain functions (altered hydrologic regimes, riparian modification, wetland modification)
- Survey erosion sites within watershed and develop strategies to reduce identified problems (altered sediment loads)

LAW & POLICY

- Continue working on forest certification endeavors (forestry practices, incompatible natural resources management)
- Enforce the use of sediment barriers and best management practices during road siting, construction, and maintenance (altered sediment loads)
- Protect natural seasonal flow patterns of the river by incorporating best management practices (altered hydrologic regimes)
- Remove dams to rehabilitate natural hydrology and connectivity (altered hydrologic regimes, dams, fragmentation)
- Restrict beach grooming (riparian modification, other structure removal)
- Restrict log salvage operations, especially where woody structure is limited (forestry practices, incompatible natural resources management)
- Strengthen wetland regulations, mitigation requirements, and enforcement (wetland modification)
- Work with local governments to develop and refine planning and zoning regulations and ordinances that consider natural processes (variety of threats)

EDUCATION & AWARENESS

- Educate canoeists and snowmobile users about importance of woody structure to water bodies and their communities (other structure removal, social attitudes)
- Educate landowners on the importance of woody structure to water bodies and species (other structure removal, social attitudes)

Research and Survey Needs

- Determine life history requirements for SGCN associated with woody structure
- Educate the public on the role and value of woody structure
- Work with watershed councils and conservation groups to restore wood habitats and teach its value

Monitoring

- Dredging and channelization
- Erosion
- Logging practices
- Log salvage operations
- Macrophyte and woody structure removals
- Mining practices
- Riparian modification
- Sediment loadings
- Stream modification
- Wetland modification