

Restoration Planning for Fish
and Wildlife in Michigan's Areas
of Concern:
**A Preliminary Assessment and
Guidance for Action**

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PURPOSE

- Establish a pathway to delisting three habitat-related beneficial use impairments
 - Assess Michigan AOC progress along that pathway
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HABITAT-RELATED BENEFICIAL USE IMPAIRMENTS

- Degraded Fish and Wildlife Populations
 - Loss of Fish and Wildlife Habitat
 - Degradation of Benthos
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REASONS TO DEVELOP A PATHWAY

- You requested it
 - Delisting requires a systematic approach
 - The habitat-related BUIs are vexing
 - GLNPO wants to support delisting
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CRITERIA FOR LISTING

- *Degraded Fish and Wildlife Populations*

When fish and wildlife personnel have identified degraded fish or wildlife populations due to a cause within the watershed as part of fish and wildlife management programs

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When fish and wildlife personnel have identified degraded fish or wildlife populations due to a cause within the watershed as part of fish and wildlife management programs

Something in the environment is harming fish and wildlife and their populations are decreasing as a result

CRITERIA FOR LISTING

- *Loss of Fish and Wildlife Habitat*

When fish and wildlife personnel have identified loss of fish and wildlife habitat due to water quality contamination as part of fish and wildlife management programs

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Water contamination is causing a loss of fish and wildlife habitat

CRITERIA FOR LISTING

- *Degradation of Benthos*

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The benthic macroinvertebrate community structure is damaged physically and chemically

CHANGES IN OUR VIEW

- The combination of chemical, physical and biological impacts defines an AOC
 - AOC problems do not stop at the AOC demarcation line, nor do they necessarily originate within that boundary
 - The health of each AOC is critical to the health of the entire Great Lakes basin
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DELISTING CHALLENGES

- Each AOC is unique in terms of historic and current landscape features and species
 - Quantity and quality of available habitats determines fish and wildlife population capacity
 - Balance of quantity and quality of habitats and species will result in a healthy AOC
 - Achieving the balance requires significant effort and commitment on many levels
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PATHWAY TO DELISTING

- Consistent ecological restoration approach
 - Ensure restoration success
 - Defensible results
 - Commonly understood road map
 - Guide to pursue delisting
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PATHWAY: Step 1

Vision and goals: the mental picture of the AOC and the components needed to improve it

PATHWAY: Step 1

Step 1 is complete when the local community:

- Agrees to acceptable compromises
 - Shares a vision
 - Articulates goals
 - Understands what's involved
 - Is committed to doing the work and preventing future degradation
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PATHWAY: Step 2

- **Inventory and assessment:** a listing of the plants, animals, and habitats currently in the AOC as well as the problems that are causing the impairments to them and what is needed for them to recover
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PATHWAY: Step 2

Step 2 is complete when:

- Major ecological components and causes of impairments are known and mapped
 - Work to be done is known and consistent with vision and goals
 - Environmental goals are reasonable
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PATHWAY: Step 3

- **Project design:** the detailed work plan to restore and manage all sites in the AOC
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RESOURCES

- www.on.ec.gc.ca/wildlife/docs/habitatframework-e.html
 - http://www.ser.org/content/ecological_restoration_primer.asp
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PATHWAY: Step 3

Step 3 is complete when:

- A work plan is in place for each site to be restored
 - Site targets support environmental goals
 - Project timetable is reasonable
 - There is a common understanding of how project progress will be tracked and communicated
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PATHWAY: Step 4

- **Implementation:** initiating the work plan activities that will accomplish the goals and objectives leading to the fulfillment of the vision
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PATHWAY: Step 4

Step 4 may be considered complete if:

- Finances have been secured and work has been started at all sites
 - Indicators show that demonstrable progress toward reaching targets at each site is being made
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PATHWAY: Step 5

- **Monitoring and re-assessment:**
keeping track of each site over a long period
of time
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PATHWAY: Step 5

Step 5 is complete when:

- Restoration is completed or well underway—restoration trajectory is on track
 - Restoration trajectory demonstrates site targets are leading to achievement of AOC goals
 - Protection are in place to prevent future degradation
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DELISTING PRINCIPLES

Delisting of habitat-related BUIs is likely to be dependent on the delisting of other BUIs

DELISTING PRINCIPLES

An AOC that's ready for delisting will not only have restored sites, but will have a connection with its surrounding landscape

DELISTING PRINCIPLES

It is appropriate for delisting to occur prior to full ecological restoration as long as it can be demonstrated that the ecosystem is on a trajectory toward full recovery

CRITERIA FOR DELISTING

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 - The restoration trajectory is moving measurably toward the environmental AOC goals.
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 - Fish and wildlife are beginning to migrate freely in and through AOCs to utilize essential habitats.
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CRITERIA FOR DELISTING

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 - The restoration trajectory is moving measurably toward the environmental AOC goals.
 - Fish and wildlife are beginning to migrate freely in and through AOCs to utilize essential habitats.
 - Land use plans and zoning laws are protecting habitats from future development, physical degradation and contamination.
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PROCESS TO DELIST

“Restoring Great Lakes Areas of
Concern: Principles and
Guidelines”

www.epa.gov/glnpo/aoc/delist.html

POST-DELISTING

- AOCs will not be pristine, but fish and wildlife populations will be present and viable
 - Each AOC will be at the level of the surrounding landscape if not better
 - The community will be fully engaged in preventing degradation from occurring again
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ASSESSMENT OF THE PATHWAY IN MICHIGAN

- We have difficulty picturing the common vision and overall goals (endpoints) for the restored AOC
 - Although many inventories were done, their connection to establishing targets is not clear
 - Project design for the AOC—maps, indicators, timetable, budget—are largely absent
 - Many restoration projects have been implemented, however, connection to AOC goals and indicators of success are largely missing
 - Long term monitoring plans are not evident
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ASSESSMENT OF THE PATHWAY IN MICHIGAN

- Today we have a more complete understanding of the causes of degradation and effects on fish and wildlife populations and habitats
 - Local citizens with government entities have done tremendous work to characterize problems and implement changes
 - There is a commitment to finish what was started and restore beneficial uses for the betterment of each AOC and for the entire Great Lakes basin
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