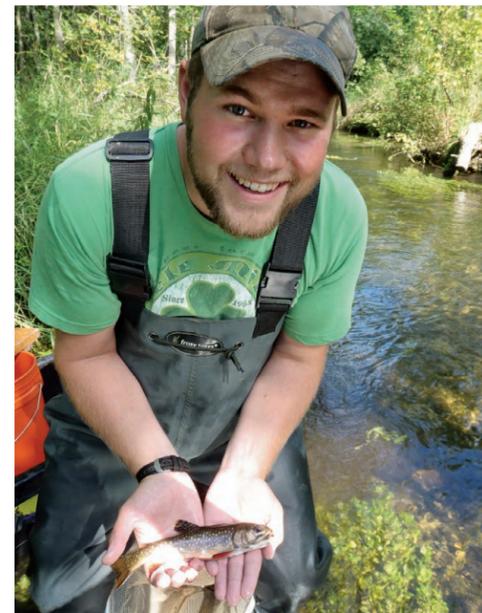


# Milwaukee Estuary Area of Concern



The tide is turning for the Milwaukee Estuary. Toxic sediments are being removed and habitat restoration is underway in much of the AOC. The river is becoming a more valuable resource for recreation and the local economy, as fish and wildlife benefit and public enjoyment opportunities improve.



Matt Steiger and brook trout caught during an electrofishing survey on a Milwaukee River tributary.

Arrowhead, kingfisher and great blue heron illustrations by Cindie Brunner

# Milwaukee Estuary Area of Concern

## BENEFICIAL USE IMPAIRMENT RESTORATION REPORT

Summer 2013

The Milwaukee Estuary was designated an Area of Concern (AOC) in the 1980s because contaminated river sediment impaired public benefits such as fish consumption, healthy fisheries, boat access and wildlife habitat.

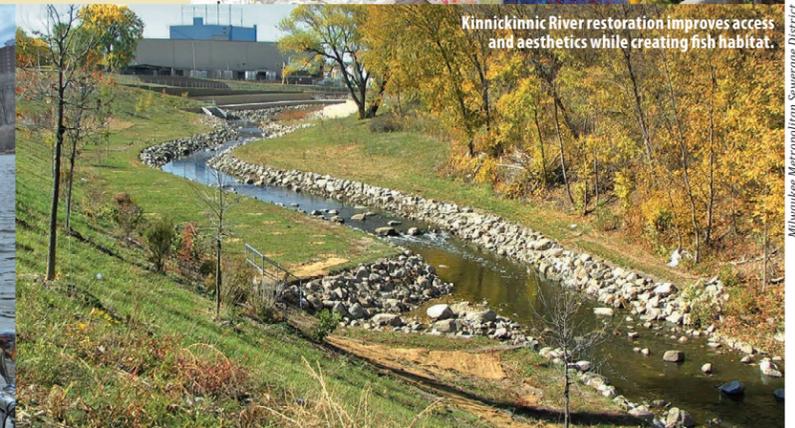


The former North Avenue Dam walkway provides access for families to Milwaukee River trails on both shores.

Kinnickinnic River restoration improves access and aesthetics while creating fish habitat.



A DNR Fisheries crew captures a sturgeon returning to the Milwaukee River.



Newly-released salmon.

The Wisconsin Department of Natural Resources (WDNR) and citizen groups identified 11 Beneficial Use Impairments (BUIs) to target here for improving the river.

See progress report inside →



Kayakers enjoy a river paddle downtown.



Volunteers perform beach assessment.

## Milwaukee Estuary – part of the largest fresh surface water resource in the world – the Great Lakes ecosystem

For more details about AOC progress and projects, refer to the Area of Concern Remedial Action Plan Updates, available at <http://dnr.wi.gov/topic/greatlakes/aoc.html>






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<http://fyi.uwex.edu/aocs/milwaukee>

# Milwaukee Estuary AOC – Restoration Status Update

Summer 2013

**Tackling AOC** problems, which are expressed as Beneficial Use Impairments in the Area of Concern program, requires several steps. We must understand their causes and define their extents through monitoring, assessment and data analysis. We then determine the necessary actions to address the problems, and implement them.

Actions to address AOC problems can be large and complex, requiring the coordinated efforts of many partners over multiple years. Upon completing the necessary actions, we must verify through monitoring that we have achieved our goals for cleanup and restoration. Once the goals have been met and the problems have been addressed, the AOC designation can be removed.



Kayaking the Milwaukee River.

This update shows the current status (Summer 2013) of the removal phases for 11 impairments of the Milwaukee Estuary AOC – *complete*, *underway*, *not started*, or *not required* – and the next steps.



Human and machine power work to rehabilitate habitat for flora and fauna, like the monarch butterfly.



**BUI Removal Phases:**

- MA MONITOR & ASSESS:** define the problem, establish baseline, gather data.
- DR DATA UNDER REVIEW:** literature searches, lab results not yet analyzed/summarized, understanding the data by consulting with experts, etc.
- DP DEVELOP AOC PROJECTS:** engage stakeholders to develop the set of projects that are necessary for reaching AOC goals.
- IP IMPLEMENT PROJECTS:** take action to improve conditions within the AOC if monitoring data shows goals are not being met.
- VR VERIFY RESULTS:** this phase includes the step of monitoring to check conditions after action has been taken. Once targets are reached, prepare a proposal to remove the BUI with input from stakeholders.

**Status of Each Phase:**

not required	not started	underway	complete
X	○	➔	★

**There are health concerns with eating fish & wildlife**

**NEXT STEPS:**

- Continue contaminated sediment cleanups.
- Reassess fish and waterfowl tissues to make sure fish/wildlife don't exceed statewide consumption criteria.
- Identify other sources of contamination if fish/wildlife fail to meet targets.

➔ MA DR DP IP VR

**Fish & wildlife populations are degraded**

**NEXT STEPS:**

- Continue contaminated sediment cleanups.
- Complete fish and wildlife population assessments and identify/prioritize projects.
- Implement select fish and wildlife rehabilitation projects.

➔ MA DR DP IP VR

**There is increased potential for fish tumors & deformities**

**NEXT STEPS:**

- Continue contaminated sediment cleanups.
- Complete analysis for fish tumor incidence (impairment is suspected).

➔ MA DR DP IP VR

**There is increased potential for bird & animal deformities & reproduction problems**

**NEXT STEPS:**

- Continue contaminated sediment cleanups.
- Evaluate ongoing work with tree swallows to determine extent of impairment (impairment is suspected).

➔ MA DR DP IP VR

**Populations of sediment-dwelling organisms are degraded**

**NEXT STEPS:**

- Continue contaminated sediment cleanups.
- Evaluate USGS and other data to determine next steps.

➔ MA DR DP IP VR

**Dredging activities for commerce or navigation are restricted**

**NEXT STEPS:**

- Continue contaminated sediment cleanups.

➔ MA DR DP IP VR

**Excessive nutrients cause undesirable algae**

**NEXT STEPS:**

- Complete the phosphorus total maximum daily load study for the Milwaukee Estuary.
- Implement the recommendations from the phosphorus total maximum daily load study for the Milwaukee Estuary.

➔ MA DR DP IP VR

**Water contact through beach use or other recreation is limited**

**NEXT STEPS:**

- Complete bacteria source analysis assessment to identify unrecognized sanitary sewage contamination and determine the contribution of sewage to pathogen and fecal loads.
- Implement the recommendations from the bacteria total maximum daily load study for the Milwaukee Estuary.
- Implement actions to reduce South Shore Beach closures.

➔ MA DR DP IP VR

**Appearance of rivers & beaches needs improvement**

**NEXT STEPS:**

- Continue citizen-based aesthetics monitoring program.
- Where feasible, implement actions for areas that the monitoring program demonstrate need attention.
- Continue river and beach trash cleanup events.

➔ MA DR DP IP VR

**Small organisms living in the water are degraded**

**NEXT STEPS:**

- Continue assessments of the organisms to determine if they are degraded in the Milwaukee Estuary.
- Determine causes if degraded; remove impairment if not degraded.

➔ MA DR DP IP VR

**Fish & wildlife habitat is poor**

**NEXT STEPS:**

- Continue contaminated sediment cleanups.
- Use fish/wildlife population/habitat assessments to identify/prioritize habitat projects.
- Implement select fish and wildlife habitat projects.

➔ MA DR DP IP VR

