

Lower Green Bay & Fox River Area of Concern

Reaching our targets will lead us to our goal of delisting the AOC, which means the ecological benefits of the Lower Green Bay and Fox River have been restored to an acceptable level. We will know we have achieved this when public uses are no longer impaired by legacy contamination and native plants and wildlife are sustainably protected. As toxic sediment is removed and habitat restoration continues, the river is becoming a more and more valuable resource for recreation and the local economy.



The Cat Island chain framework was completed in 2013. Clean dredged material will be beneficially re-used as fill for the next 20-30 years.



Restoration and protection of Northern Pike spawning habitat is a priority along the west shore of southern Green Bay.

Arrowhead and kingfisher illustrations by Cindie Brunner

Lower Green Bay & Fox River Area of Concern

BENEFICIAL USE IMPAIRMENT RESTORATION REPORT

Summer 2015

Lower Green Bay and the Fox River below the De Pere Dam were designated an Area of Concern (AOC) in the 1980s because contaminated river sediment impaired public benefits such as fish consumption, healthy fisheries, shipping channels and wildlife habitat.



The Wisconsin Department of Natural Resources (WDNR) and citizen groups identified 13 Beneficial Use Impairments (BUIs) to target here for improving the river.

See progress report inside



Cleanup crews share the river with fishermen.

Bay Beach.

Lower Green Bay & Fox River – 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>

Regional Natural Resources Program

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Lower Green Bay & Fox River AOC – Restoration Status Update

Summer 2015

Tackling AOC problems, known as Beneficial Use Impairments in the Area of Concern program, requires several steps. We must understand the causes and define the extent of the impairments 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.



Researcher samples for organisms found in the riverbed.

This update shows the current status (Summer 2015) of the removal process for 13 impairments of the Lower Green Bay and Fox River AOC – *complete*, *underway*, or *not started* – and the next steps. Dates in parentheses indicate the anticipated project completion.

BUI Removal Phases:

- MA MONITOR & ASSESS:** define the problem, gather data and review literature, consult with experts.
- 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:** after actions have been taken, monitor to determine if target has been met.
- RM FORMAL BUI REMOVAL:** targets have been met, BUI removal documentation is being prepared or reviewed, or has been submitted.

Status of Each Phase:



There are health concerns with eating fish & wildlife

NEXT STEPS:

- Complete a multi-year study to determine if there are still concerns with eating waterfowl.
- Complete removal of riverbed sediments containing polychlorinated biphenyls (PCBs) which contaminate fish and wildlife (through 2017).
- Conduct long-term monitoring to assess fish consumption advisories following PCB cleanup (2018 and after).



Fish do not taste good

NEXT STEPS:

- Use results from 2013-2014 angler survey to determine specific and measurable targets for removing BUI.
- Ensure a diverse perspective of fish taste is surveyed.



Fish & wildlife populations are degraded

NEXT STEPS:

- Assess current impairment status by monitoring fish and wildlife populations including mink, otter and muskrat (through 2016).
- Work with local interested parties to create final delisting targets (through 2016).
- Complete cleanup of riverbed sediments containing harmful PCBs (through 2017).



There is increased potential for fish tumors & deformities

NEXT STEPS:

- Remove primary source of tumor-causing contaminants by completing cleanup of former gas plant site.
- Conduct fish tumor assessment following cleanup projects (2018 and after).



There is increased potential for bird & animal deformities & reproductive problems

NEXT STEPS:

- Work with local interested parties and experts to determine metrics, identify species and develop sampling strategies for data collection (2015).
- Complete cleanup of riverbed sediments containing PCBs, which are known to cause deformities and reproduction problems (through 2017).



Communities of sediment-dwelling organisms are degraded

NEXT STEPS:

- Use information from United States Geological Survey (USGS) study of sediment-dwelling organisms to assess current status of impairment (2015).
- Survey mayfly survival following 2014 UW-Milwaukee re-establishment project (2015).
- Complete cleanup of polluted riverbed sediments (through 2017).



Dredging activities for commerce or navigation are restricted

NEXT STEPS:

- Complete cleanup of riverbed sediments containing PCBs in the Lower Fox River (through 2017).
- Complete cleanup of sediment polluted with polycyclic aromatic hydrocarbons (PAHs) and heavy metals at former gas plant site.



Excessive nutrients cause undesirable algae

NEXT STEPS:

- Develop a plan to meet reduction goals for undesirable nutrients and sediment (Total Maximum Daily Load or TMDL planning).
- Identify the necessary management actions to address eutrophication for the AOC.



Waterbody is not recommended as a drinking water source

NEXT STEPS:

- Work with local interested parties and technical experts to determine what information is needed to measure impairment.
- Collect any necessary data and evaluate current status of impairment.



Water contact through beach use or other recreation is limited

NEXT STEPS:

- Analyze data from Bay Beach, Long Tail Point and Communiiversity Park to determine if targets are being met.
- Determine whether additional data is needed.
- Assess the feasibility of restoring Bay Beach as a public beach.



Appearance of river & waterfront needs improvement

NEXT STEPS:

- Continue and expand volunteer aesthetics monitoring to assess the current status of the impairment.
- Determine necessary management actions based on monitoring results.



Communities of small organisms living in the water are degraded

NEXT STEPS:

- Assess results of USGS plankton study to determine health of small organisms in the water (2015).
- Identify the necessary management actions to address AOC-related nutrient and sediment impacts to plankton health (2016 and after).



Loss of fish & wildlife habitat

NEXT STEPS:

- Complete AOC-wide plan for assessing and restoring fish and wildlife habitat (through 2016).
- Continue Cat Island Chain and Point au Sable restoration to protect shoreline habitat.
- Complete design of Fox River fish habitat restoration in De Pere.



Monitor and Assess (MA)

Develop AOC Projects (DP)

Implement Projects (IP)

Verify Results (VR)

Formal BUI Removal (RM)



BUI REMOVED

← RETURN TO PROCESS STEPS IF TARGETS NOT REACHED