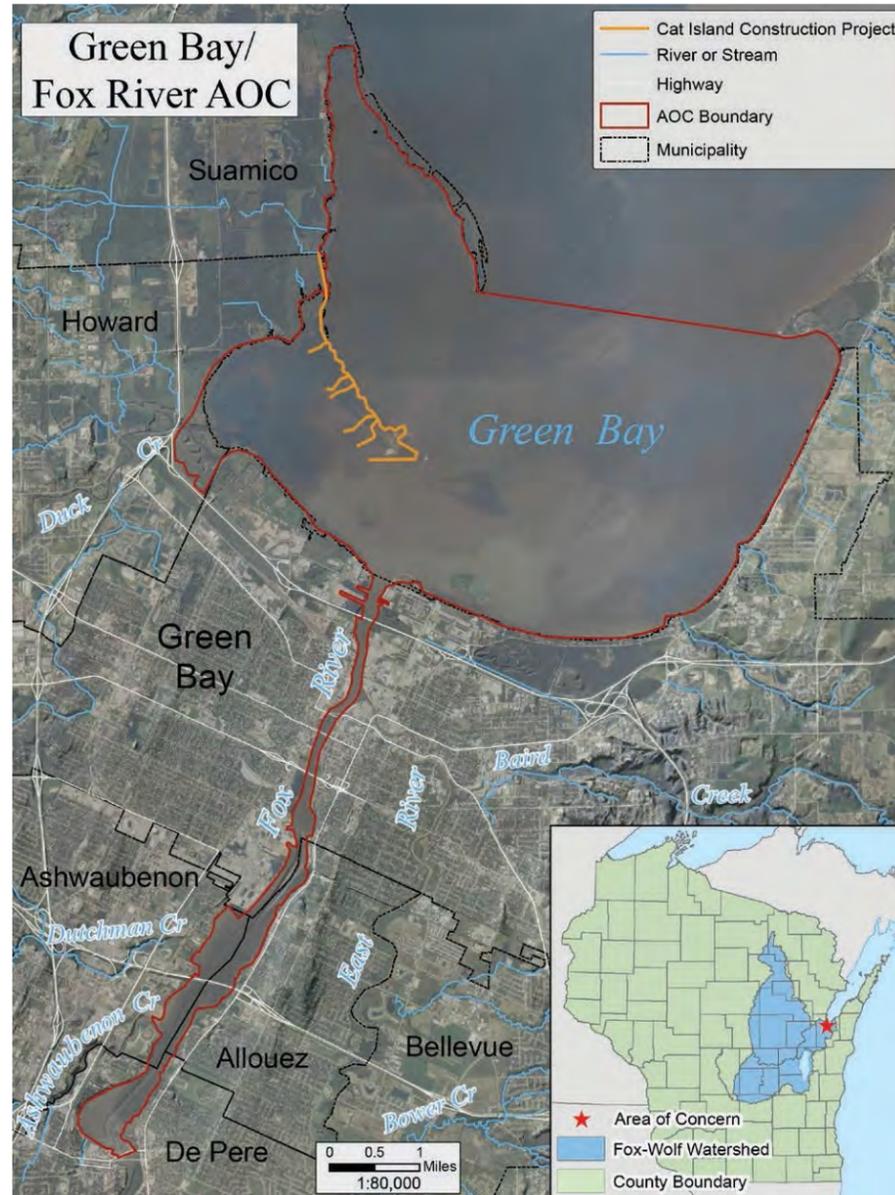


# Lower Green Bay and Fox River Area of Concern

Reaching our targets will lead us to our goal of delisting the AOC, which means the ecological benefits of Lower Green Bay and Fox River have been restored to an acceptable level. We will achieve this when public uses are no longer impaired by legacy contamination, and native plants and wildlife are sustainably restored. 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.

To learn more about Lower Green Bay and Fox River AOC projects and progress visit <http://dnr.wi.gov>, search "Green Bay AOC." For more details, refer to the Area of Concern Remedial Action Plan Updates.

Lower Green Bay & Fox River—part of the largest fresh surface water resource in the world—the Great Lakes ecosystem



Wisconsin Department of Natural Resources Office of Great Waters

Brochure developed by the UW-Extension Regional Natural Resources Program and the Wisconsin Department of Natural Resources, Office of Great Waters. Graphic design by Jeffrey J. Strobel, UW-Extension Environmental Resources Center.



# Lower Green Bay and Fox River Area of Concern

## BENEFICIAL USE IMPAIRMENT RESTORATION REPORT

Fall 2018

### 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.



Dave Turidiano

Christopher Rand



Annette Pellegrin



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

See the progress report inside →

The Bolt Company



DNR

# Lower Green Bay and Fox River AOC – Restoration Status Update

Fall 2018

## 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. After 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.

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



Sampling for organisms in the riverbed.

### 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 and wildlife

#### NEXT STEPS:

- Complete removal of sediments containing polychlorinated biphenyls (PCBs) and other toxins which contaminate fish & wildlife (2019).
- Continue long-term monitoring to assess fish & wildlife consumption advisories following PCB cleanup (2020 and onward).



### Fish and wildlife populations are degraded

#### NEXT STEPS:

- Complete cleanup of riverbed sediments containing harmful PCBs (2019).
- Use assessment tools developed by UW-Green Bay to identify and prioritize projects that will improve fish and wildlife populations (2020).
- Implement selected projects (2024).



### There are increased rates of fish tumors and deformities

#### NEXT STEPS:

- Remove primary source of tumor-causing contaminants by completing cleanup of PCBs in 2019 and manufactured gas plant (MGP) site in 2020.
- Conduct fish tumor assessment following cleanup projects (2021 and onward).



### There is increased potential for bird and animal deformities and reproductive problems

#### NEXT STEPS:

- Complete cleanup of riverbed sediments containing PCBs in 2019 and MGP site in 2020, which are known to cause deformities and reproduction problems.
- Repeat assessments of wildlife, and evaluate data to determine status of impairment (2023).



### Communities of sediment-dwelling organisms are degraded

#### NEXT STEPS:

- Complete cleanup of polluted riverbed sediments (2020).
- Develop comprehensive monitoring plan to determine the health of sediment-dwelling organisms (2021).



### Fish do not taste good

#### NEXT STEPS:

- Compile available information from angler surveys, wastewater permits, and historical documents to develop a proposal for stakeholder review to remove this impairment (2018).
- Develop a formal BUI removal package (2019).



### Waterbody not recommended as a drinking water source

#### NEXT STEPS:

- Evaluate toxin data from harmful algae bloom study to assess the status of this impairment and determine next steps (2019).



### Dredging activities for commerce or navigation are restricted

#### NEXT STEPS:

- Complete cleanup of sediments containing PCBs in the Lower Fox River and river mouth to Green Bay (2019).
- Complete cleanup of sediment polluted with polycyclic aromatic hydrocarbons (PAHs) and heavy metals at former manufactured gas plant site (2020).



### Excessive nutrients cause undesirable algae

#### NEXT STEPS:

- Continue to work with technical groups and stakeholders to identify the necessary management actions to address nutrient loading and undesirable algae in the AOC (2019).
- Complete the assessment of harmful blue-green algae blooms in the AOC (2021).



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

#### NEXT STEPS:

- Continue to assess recreational use risk in the AOC (2021).
- Complete the assessment of harmful blue-green algae blooms in the AOC (2021).
- Develop a strategy for continuous monitoring of harmful algal blooms in the lower Bay (2022).



### Appearance of river and waterfront needs improvement

#### NEXT STEPS:

- Continue aesthetics monitoring volunteer data collection (2018).
- Evaluate all data to determine the status of this BUI and next steps (2019).



### Communities of small organisms living in the water are degraded

#### NEXT STEPS:

- Evaluate results of the harmful algae blooms study to determine health of the community of small organisms in the AOC (2018).
- Identify the necessary management actions to address AOC-related nutrient and sediment impacts to plankton health (2019).



### Loss of fish and wildlife habitat

#### NEXT STEPS:

- Use habitat assessment tools developed by UW-Green Bay to select the highest priority habitat restoration projects in collaboration with the Technical Team (2020).
- Implement selected habitat restoration projects (2024).



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