

Milwaukee Estuary Area of Concern

Beneficial Use Impairments Summary

Impaired Beneficial Use (Original AOC boundaries)		Sources of Pollution or Problem				
		Toxic substances	Runoff pollution	Physical habitat alteration	Thermal discharges	Litter
2	Degradation of fish and wildlife populations	X	X	X	X	
11	Loss of fish and wildlife habitat	X	X	X	X	
5	Degradation of benthos	x	X	x	X	
6	Restrictions on dredging	X	X			
1	Restrictions on fish and wildlife consumption	X	X			
4	<i>Bird/animal deformities or reproduction problems (potentially impaired)</i>	x	x			
3	<i>Fish tumors or other deformities (potentially impaired)</i>	x	x			
8	Beach closings/recreational restrictions	X	X			
10	Degraded phytoplankton and zooplankton populations	X	X	X		
7	Eutrophication or undesirable algae		X	X	X	
9	Degraded aesthetics	x	X	x		X

- Impaired beneficial uses that apply to both the Expanded *and* Original AOC boundaries.
- Suspected impaired beneficial uses.

Source Explanations

Loading of toxic substances into AOCs was one of the primary drivers behind the AOC program. Sources of toxic substances include contaminated sediments, spills of such chemicals within the watershed, and atmospheric deposition.

Runoff pollution includes loading of sediment, nutrient, and/or bacteria as a result of nonpoint, or diffuse, sources of pollution and includes urban stormwater runoff. Sewer overflows are also a source of sediment, nutrients, and bacteria into the AOC and are included in this category. Additionally, noncontact cooling water is a significant source of phosphorus, a nutrient, into the waters of the AOC.

Dams, drop structures, concrete-lined channels, and poorly-sized culverts and stream crossings degrade aquatic habitat by impeding the fishes' ability to get to suitable spawning habitat further upstream. This category also includes shoreline alteration, such as sheet piling, that doesn't provide high-quality habitat the same way that more naturalized, meandering streambanks would.

In the time since the original RAP documents were written, there has been recognition of the importance of thermal discharges in affecting water quality, specifically dissolved oxygen levels. As water temperature increases, its ability to carry oxygen decreases. Therefore, discharges of water with elevated temperatures can have a significant negative impact on aquatic communities.

A lower case X indicates that at the time of the original RAP, these sources were not understood to be part of the source contributing to a particular impaired beneficial use, but are now considered to be a component of the impairment.