

Coastal Health Problem Statement

Contact (including external, ingestion, and inhalation) with nearshore water of the Great Lakes can pose a risk to human health. This results in the need to close beaches, restrict drinking water consumption, issue fish consumption advisories and mechanically remove toxic algae. Much of the cause¹ is due to pollution that enters and accumulates in the Great Lakes as a result of combined sewer overflows (CSO), sanitary sewer overflows (SSO), shedding from bathers, illegal and malfunctioning private sewage treatment systems (e.g. septic and aerobic systems), storm water runoff, agricultural runoff, animal deposition, marine boat pollution, industrial runoff, urban landscape runoff, and the release of pollutants from contaminated sediments. Inconsistent compliance with sewage treatment and control, lack of wastewater and stormwater enforcement, and aging and overloaded wastewater treatment and collection infrastructure also contribute to the risk of adverse health effects.

¹ Coastal Health is affected by the overall health of the natural ecosystem addressed in the Great Lakes Collaboration Habitat/Species strategy chapter. Coastal Health is also affected by the legacy of industrial pollution addressed in the Persistent Bioaccumulative Toxics Reduction and Areas of Concern Restoration Sediments strategy chapter.

Coastal Health Desired State

**(Numbered for discussion purposes, not in order of priority.
Organized by Coastal Health chapter category)**

Overarching Goal:

By 2010 contact with nearshore waters will not pose a risk to human health.

Wet Weather Impacts: CSO (Margaret Wooster)

1. All CSO communities in the Great Lakes Basin should achieve full compliance with the CWA National CSO Policy as soon as possible by fully implementing a legally enforceable schedule contained in an NPDES permit or other enforceable document with appropriate penalties for any noncompliance. For any CSO community not able to fully comply by 2008, their full CSO control program must be included in a court-supervised document with significant penalties for any non-compliance.
2. Congress should allocate to the State Revolving Fund for the eight Great Lakes States the amount of \$1.5 Billion for use in correcting CSOs for eligible communities in the Great Lakes Basin. (The \$1.5 Billion is a place holder for now. We may want to ask for more or less based upon some research with the States.)
3. All CSO communities in the Great Lakes Basin should develop and fully implement a storm water control program by 2008 to prevent the introduction of such stormwater into the sewerage collection system.
4. The industrial pretreatment program should be reviewed and updated by 2007 for all communities having CSOs and SSOs in order to significantly reduce the discharge of toxics.
5. The respective State agencies should review the CSO, SSO and industrial pretreatment programs (IPP) for all appropriate communities followed by issuing appropriate updated NPDES permits or, as appropriate, issue the necessary administrative or judicial enforcement action to ensure that communities are implementing aggressive programs to correct CSO, SSO and IPP problems. Congress should allocate \$10 million to the Great Lakes States to implement this review and upgrading of permits and for conducting

subsequent enforcement actions. (The \$10 million is a place holder for now. We may want to ask for more or less based upon some research with the States.)

6. The EPA Great Lakes Strategy called for all CSO permits in the Great Lakes to be consistent with national policy by 2005.

Wet Weather Impacts: SSO (Margaret Wooster)

1. EPA immediately promulgate provisions of the SSO rule consistent w/the 5-year FACA report.

Wet Weather Impacts: Private Sewer Treatment Systems (?)

1. Establish, staff and provide resources for testing and enforcement programs for private sewer treatment system (e.g. septic and aerobic) in order to eliminate illegal discharge from septic systems by 2010 so that failure of these systems do not cause beach closures. (See NPS Chapter for further detail)

Wet Weather Impacts: Stormwater (NPS Strategy Team)

1. By 20__ achieve a (%X) reduction in **bacterial and chemical** contamination of Great Lakes near shore water resulting from **stormwater** discharge through the development, implementation and maintenance of municipal best management practices (BMP) (i.e. wetland areas, retention basins, redirection. (i.e. disconnect of downspouts into rain barrels, native landscaping to decrease fertilizer and pesticide use on lawns) and public education (i.e. impact of pet and household wastes on ecosystem) and others referenced in the PA NPDES Storm water program http://cfpub.epa.gov/npdes/home.cfm?program_id=6 (See NPS Section Altered Flow Regimes especially Urbanization objective and Action Items)
2. By 2010 achieve a X% net increase in Great Lakes coastal **wetlands** that are protected or have been restored in order to help protect human health in coastal near shore waters. (see NPS Section Altered Flow Regimes protect wetlands action).
3. By 2010 achieve a 90 to 95% reduction in bacterial and chemical contamination of Great Lakes near shore water and their tributaries resulting from the establishment of **urban landscape runoff** control measure requirements. See NPS Section Altered Flow Regimes, Urbanization objective and Action Items)
4. By 2010 achieve an 90 to 95% reduction in bacterial and chemical contamination of Great Lakes near shore water resulting from **agricultural runoff** through the development, implementation and maintenance of best management practices (BMP) established by the U.S. E.P.A. in coordination with the enforcement agency, the U.S. Dept. of Agriculture. (See NPS section for further details). (See NPS Section Altered Flow Regions especially Agriculture/Forestry objective, as well as Contaminants action item 7)
5. EPA GLS called for Phase II stormwater permits to be in place by March 2003.

Wet Weather Impacts: Treatment Plants (?)

1. By 2010/ all facilities within the Great Lakes watershed will present to EPA a **plan for wastewater treatment**.
2. The EPA Great Lakes Strategy goal is that by 2010 all Great Lakes wastewater treatment systems have adopted and are operating under long-term comprehensive management plans.

Dry Weather Impacts (e.g. wildlife, sands, algal blooms) (Julie Kinzelman and Holly Warick)

1. By 2010 achieve a 90 to 95% reduction in bacterial and chemical contamination of Great Lakes near shore water resulting from **animal deposition** by establishing deterrent habitat modification (DEFINE) rules established by the U.S. E.P.A. and enforced through the Great Lakes state's Departments of Public Health.
2. By 2010 achieve a 90 to 95% reduction in bacterial and chemical contamination of Great Lakes near shore water resulting from the establishment of standards pertaining to the care and treatment of near shore **beach sand and land areas** at all public bathing areas.
3. Reduce nutrient (phosphorus) inputs to the Great Lakes to prevent blue-green algae (*Microcystis*) blooms and minimize green algae (*Cladophora*) growth. In recent years *Cladophora* accumulation on beaches has increased dramatically across the Great Lakes to severe nuisance quantities. While this algae does not pose a direct health threat it does provide adequate growing conditions for flies and human pathogens and negatively affects bathing water quality and drinking water quality. *Microcystis* and other forms of blue-green algae, frequently bloomed in the Western Basin of Lake Erie and other warm, nutrient rich areas around the Great Lakes in the 1970s. Since the mid-1990s these blooms have returned as phosphorus concentrations have returned to 1970s levels. *Microcystis* produces the toxin, microcystin, that is toxic to humans and wildlife. In 2004, microcystin levels in Lake Erie reached a level 58 times that recommended by the WHO. Increased water clarity and nutrient recycling by zebra and quagga mussels, lower lake levels, warmer temperatures, and nutrient runoff are all implicated in the recent increase in nuisance accumulations of *Cladophora and Microcystis*. Because zebra mussels and lake levels are currently beyond our management, reducing nutrient inputs to the Great Lakes are the only mechanism to control algal blooms. (See also goal d and nonpoint strategy)

Improved Beach Management Techniques (jurisdictions of e.g. coastal communities, state, tribes, feds) (Julie Kinzelman and Holly Warick)

1. By 2010, "good water quality" (as defined by US EPA standards for bathing water quality) will be achieved 90 – 95% of available days bathing or swimming days within a given **bathing season** (US EPA Great Lakes Strategy 2010) by reducing **bacterial** contamination of Great Lakes surface water through the detection and remediation of contamination sources and the inception of basin-wide best management practices. **Change EPA's beach closing standards** (*further detail needed*).

Coastal Health end of March Framework for Alternative Approaches and Recommended Actions

2. The federal BEACH Act of 2000 requires that by April 2004, states w/ coastal recreational waters adopt the EPA recommended water quality standards for bacteria and requires EPA to update its pathogen standards by October 2005.
3. **Rapid testing techniques.**
4. Consider revision to **beach monitoring procedures.**
5. By 2010 U.S. E.P.A. to present to the Governors of the eight Great Lakes states a **wastewater enforcement plan** for review and approval.

Communication/Education (including bather shedding) (Julie Kinzelman and Holly Warick)

1. By 2006, develop and distribute educational programs that illustrate what individuals can do to minimize the risk of waterborne disease when swimming in the Great Lakes (e.g. CDC public education for swimming pools).
- 2.
3. By (2006) all public bathing beaches will be required to have informational signage posted describing the dangers to human health that shedding from bathers can have as well as ways to protect against this.

Drinking Water Quality (Jeff Reutter/Cadmus)

Parking Lot

6. By 2010 achieve a 90 to 95% reduction in bacterial and chemical contamination of Great Lakes near shore water and their tributaries resulting from **pollutants from contaminated sediments.** (See PBT/AOC section for further details)
7. By 2010 the U.S. E.P.A. to present to Congress a funding mechanism for the building and restoration of **wastewater and stormwater collection and treatment infrastructure** for all the shoremiles of the Great Lakes. CAUTION re urban sprawl - Many conservationists and land use planners believe that extending infrastructure into rural areas (such as the vineyards along the PA, OH, and NY lakeshore), in the absence of strict zoning, could spur development and contribute to urban sprawl.
8. **Marine/boat pollution**
9. **Industrial run-off**
10. By 20__ an assessment of contamination sources will be conducted using a holistic, **watershed** approach with the realization that wild and domesticated animals, agrarian practices, and “upstream” anthropogenic inputs ultimately influence the coastal health of the Great Lakes.