

and would phase out the use of existing mixing zones for BCCs in the Great Lakes Basin over 10 years. Governors in Illinois, Indiana, Michigan, Minnesota and Wisconsin have already eliminated mixing zones for BCCs in the Great Lakes. The EPA proposal would eliminate mixing zones in the states of New York, Ohio, and Pennsylvania. Information on the proposed rule is available on the Internet at:

www.epa.gov/ost/GLI

SEPs/Injunctive Relief

A Supplemental Environmental Project (SEP) is a project, not strictly necessary for compliance, that a violator agrees to undertake as part of a settlement to better the environment. Injunctive relief requires the violator to cease the environmentally injurious behavior. EPA can use SEPs and injunctive relief to correct problems and to improve the environment. Between FY 1997 and 1999, Great Lakes Basin SEPs have yielded \$90.2 million in environmental protection (pollution reduction, pollution prevention, etc.) while injunctive relief has yielded almost \$476 million during the same period. Appendix I addresses this subject in more detail.

Natural Resource Damage Assessments (NRDAs)

The U.S. is pursuing cleanup and restoration of natural resources at sites impacted by contaminants through NRDAs. The major goals of NRDAs are to eliminate or reduce the impact of persistent contaminants on natural resources, restore the services and benefits provided to the public by natural resources, and collect monetary damages for injuries to natural resources. NRDAs are being conducted or have been completed in Northwest Indiana; Saginaw River, Michigan; and the Fox River, Wisconsin.

Saginaw River and Bay NRDA

As a result of a June 1999 Consent Decree, the natural resource damages settlement will fund the removal of 345,000 cubic yards of PCB-contaminated sediments from the Saginaw River, Michigan AOC, provide for land acquisition for

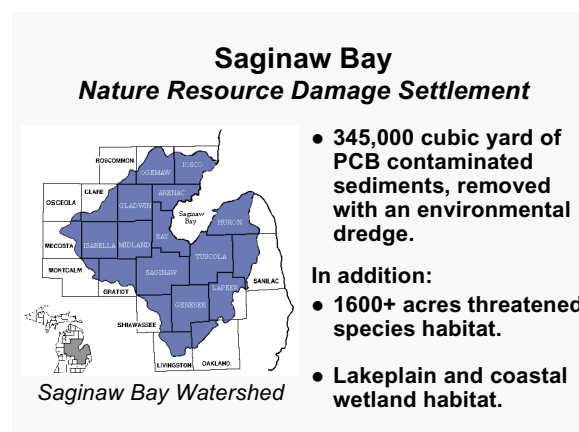


Figure 32. The Saginaw Bay NRDA will lead to on-the-ground environmental improvements.

habitat enhancement and restoration, and establish a restoration account for restoring, studying, and monitoring the Saginaw River and Bay watershed. At the Saginaw River and Bay AOC, the Corps' existing CDF will be used for the management of contaminated sediments removed as part of a environmental remediation settlement with industry.

Grand Calumet NRDA

In 1996, a NRDA Pre-Assessment Screen was signed for the Grand Calumet area in Northwest Indiana. The Trustees, which include IDEM, Indiana DNR, FWS, and the National Park Service (NPS), determined that damage to natural resources occurred in the area due to releases of hazardous substances and oil and have, to date, identified 16 PRPs. The final assessment plan, which will serve as the guiding document for all damage assessment activities, was completed in October 1997, with implementation beginning immediately thereafter.

Fox River NRDA

The FWS, acting on behalf of the Federal and Tribal natural resource trustees, has undertaken one of the largest and most complex NRDAs in the U.S. This assessment now forms the nucleus of a joint trustee-EPA-State-Tribal effort to understand, remediate, and restore the Lower Fox River, Green Bay, and Lake Michigan, particularly as related to Fox River PCBs. The assessment



is based on the goals and information developed by the Lake Michigan LaMP and will lead to reductions of PCB loadings to the Great Lakes, as well as significant restoration of the Fox River and Green Bay environment. In November 1999, as part of the assessment process, the FWS estimated that over \$100 million in public damages caused by lost fishing opportunities were incurred due to the impacts of fish consumption advisories for PCBs in the Fox River and Green Bay areas.

Superfund Cleanups

ST. LAWRENCE RIVER-MASSENA AOC SUPERFUND CLEANUPS

In New York State at the St. Lawrence River-Massena AOC, cleanup activities at three large industrial sites (ALCOA, General Motors, and Reynolds Metals), are in the process of remediating hundreds of thousands of cubic yards of PCB-contaminated waste. Remediation involves excavation, dredging, and in-place strategies at both land-based and in-river sites. At ALCOA, over 1 million cubic yards of hazardous waste will eventually be remediated; at General Motors and Reynolds Metals these figures approach 500,000 and 250,000 cubic yards, respectively. Contaminated sediment removal has taken place at General Motors and ALCOA involving approximately 15,000 and 3,500 cubic yards respectively. Reynolds Metals is planning to dredge over 50,000 cubic yards of contaminated sediments during the summer of 2000. General Motors and ALCOA are also expected to conduct further dredging. Considerable progress has been made with the land-based remediation at both the ALCOA and Reynolds Metals sites. ALCOA has completed 12 of the 14 sites addressed by enforcement orders and two of four additional identified sites are complete. Reynolds Metals has essentially completed land-based remediation except for activities linked to the river work planned for 2000.

MANISTIQUE RIVER AND HARBOR AOC SEDIMENT CLEANUP

The Manistique River flows through Michigan's central Upper Peninsula, and discharges into Lake Michigan at Manistique. The AOC is the last 1.7 miles of the river, including the harbor. Beneficial use impairments (BUIs) resulted from PCBs, oils, and heavy metals identified as contaminants in the 1970s. In addition, large quantities of undecomposed sawdust remain in harbor and river sediments from the white pine lumbering era of more than 100 years ago, along with the relatively sterile sandy sediment that eroded from river banks as a result of log drives. Some beneficial uses in the AOC continue to be impaired because of historical pollution, especially PCB contamination of sediments.

In 1996, EPA proposed that it had developed innovative dredging and treatment technologies that could be used in an environmentally sound dredging project that could remove PCB contamination from the AOC. There was mutual support for the effort among the community, the potentially responsible parties (PRPs), and EPA. Under the agreement, PRPs will provide funding for the dredging project equal to what it would cost to cap the harbor and maintain it for 30 years (estimated to be \$6 million). EPA will provide additional funding to supplement the PRPs' contribution, if needed, to complete the cleanup. The PRPs also are providing in-kind services to support implementation of the remedy. To date, over 111,000 cubic yards of contaminated sediments containing over 2,700 pounds of PCBs have been removed for treatment and disposal. EPA anticipates that all the Superfund dredging of contaminated sediments in the harbor will be completed by Winter 2001. Most of the BUIs should be restored, and the process for delisting the AOC may then begin.



The pace of Superfund site cleanups in the Great Lakes and throughout the nation has greatly increased. More Superfund sites have been cleaned up in the past 3 years than in all of the prior years of the program combined. As of March 31, 1999, of the 270 Superfund sites placed on the NPL list in EPA Region 5 (a large percentage of which are located in the Great Lakes watershed), cleanup construction has been completed at 156 sites. This means long-term response actions are in place. Many of these sites have been completely remediated. It is projected that the majority of the remaining sites will have reached this stage by FY 2003.

Other Actions

- > In April 1999, EPA Region 5 and the Indiana DEQ settled a law suit with the Hammond Sanitary District for \$36 million. The money will be used to help clean up the heavily polluted west branch of the Grand Calumet River. This settlement arose from claims that the Hammond Sanitary District, the City of Hammond, and the City of Munster were responsible for 19,000 violations of the Clean Water Act through the discharge of untreated and improperly treated sewage into the west branch of the Grand Calumet River over the past decade. As part of the terms of the settlement, the Hammond Sanitary District agreed to pay \$225,000 in penalties, split equally between the U.S. and the State, contribute \$2.1 million to the existing Grand Calumet Restoration Fund, and spend \$34 million on environmental improvements to its system including \$22 million on construction projects to eliminate illegal discharges and \$12 million on sludge lagoon closure. This settlement, including river cleanup projects, follows several other settlements reached with companies along the Grand Calumet River. Notably, it follows a 1995 settlement with major industrial dischargers that established the

Grand Calumet River Fund to pay for the dredging and disposal of contaminated sediments in the river.

- > The City of Erie, Pennsylvania has entered into a Consent Decree with PADEP to spend an estimated \$90 million to upgrade and double the capacity of the publicly-owned treatment works, construct an overflow retention facility, and eliminate the remaining combined sewer overflows (CSOs) in the City's system. EPA Region III awarded \$13 million in March 1999 to partially fund this project. When this work is complete, the City of Erie will be the first major city on Lake Erie to eliminate all CSO discharges.

INNOVATIVE PARTNERSHIPS

Partners to the U.S. Great Lakes Program have long recognized the need to create new and innovative solutions to the problems affecting the Basin and that new ideas are needed among all sectors of society to achieve the goals of the Program. The following activities present highlights of this approach.

Since its establishment in 1986, the North American Waterfowl Management Plan (NAWMP) has benefited wetlands and bird species that reside in wetlands. Through the combined efforts of Federal, State, Tribal and private natural resource organizations, projects such as the acquisition and restoration of coastal habitats have allowed most targeted species of waterfowl to meet or exceed their population level objectives under the NAWMP.

Northwest Indiana environmentalists, government employees, and industrialists have formed the Grand Calumet Area Partnership to clean and revitalize the Grand Calumet River. The Partnership will take a comprehensive approach to cleanup and will allow for coordinated planning and action.

Electric utility deregulation now allows consumers to choose their electric power products and services. The Great Lakes Protection Fund, created by the Governors of the Great Lakes



States in 1989, sees this as an opportunity to encourage the public to use the health of the Great Lakes as a criterion in this selection and is offering \$2 million to fund projects that encourage consumer demand for environmentally benign sources of energy.

EPA, the Corps, the State of Ohio, and a large number of diverse public and private organizations at the Federal, State and local levels have formed the locally based Ashtabula River Partnership. The Partnership, an outgrowth of the Ashtabula River RAP process, is seeking to address and implement an ambitious, comprehensive full-scale cleanup of the contaminated sediments in the Ashtabula River and Harbor in order to restore beneficial uses. Signatories to the Partnership are strongly committed to investigating the extent of contaminated sediments, developing a plan for the dredging and disposal of river sediments, identifying resources necessary to carry out the cleanup, and generating a timeline of milestones and activities. The Partnership plans to remove and properly dispose of roughly 1.1 million cubic yards of sediments contaminated with PCBs, other chlorinated organic compounds, and heavy metals.

A landmark agreement signed in February 1997 allows 8 of Wisconsin Electric Power Company's 13 hydroelectric projects to continue operating and protects and enhances environmental and recreational natural resources on nearly 23,000 acres of public utility-owned land in northern Wisconsin and Michigan's Upper Peninsula. As non-federal hydroelectric projects are normally relicensed individually, this pioneering agreement has resulted in greatly increased efficiency and time savings for all signatories, which include the company, FWS, NPS, the States of Wisconsin and Michigan, the Michigan Hydro Relicensing Coalition, and the River Alliance of Wisconsin.

FWS continues to actively pursue efforts to restore and protect wetlands and associated upland habitats on private lands through its Partners for Wildlife program. These habitats are valuable for migratory birds, endangered species, anadromous and native fish, and for the many

functions they provide. In fiscal years 1996 and 1997, more than 275 wetland sites encompassing more than 870 acres were restored or enhanced in upper Great Lakes counties.

The State of Pennsylvania has put together a 5-year plan to address fish species habitat diversity and angler use of the Presque Isle Bay AOC. While neither 'Loss of Fish Habitat' or 'Degradation of Fish Population' are considered impairments in the AOC, the habitat enhancement projects under this plan will improve existing fisheries and result in positive steps toward restoration of the Bay.

Saginaw Bay Watershed Initiative Network (WIN)

The Saginaw Bay Watershed Initiative Network (WIN) was created to enhance the quality of life in the Saginaw Bay Watershed by creating regional networks of on-the-ground projects that demonstrate sustainability through partnerships. The partnership includes communities, conservationists, foundations, and businesses working together to balance the region's economic, environmental, and social goals.

Twelve area foundations work together as a network to support WIN projects. This Foundation Network includes the Bay Area Community Foundation, Charles J. Strosacker Foundation, Charles Stewart Mott Foundation, Consumers Energy Foundation, Harry A. and Margaret D. Towsley Foundation, Kantzler Foundation, Midland Foundation, Rollin M. Gerstacker Foundation, Saginaw Community Foundation, The Dow Chemical Company Foundation, The Herbert H. and Grace A. Dow Foundation, and The Johnson Foundation. The Foundations contribute a minimum of \$300,000 per year to support WIN projects.

For additional information regarding WIN see:

www.saginawbaywin.org



INNOVATIVE FUNDING

Clean Michigan Initiative

The State of Michigan's \$675 million Clean Michigan Bond Initiative is funding important work in the Great Lakes Basin. Areas being addressed include: brownfields and waterfront redevelopment, nonpoint source control (\$50 million commitment), pollution prevention, and contaminated sediment remediation. During FY 1999, \$143 million has been targeted for projects, include the following contaminated sediment projects:

- > Detroit River/Black Lagoon - \$400,000
- > Pine River - \$1,700,000
- > Unnamed Tributary to Wolf Creek - \$100,000
- > Muskegon Lake/Ruddiman Creek - \$1,000,000
- > White Lake–Whitehall Leather - \$1,100,000

Through the Clean Michigan Initiative, the state of Michigan has committed \$25 million to the clean up of contaminated sediment sites.

New York State Clean Air/Clean Water Bond Act

The Bond Act authorized \$25 million to implement priorities for the Great Lakes Basin as identified in the Lake Ontario and Lake Erie LaMPs, the Niagara River Toxics Management Plan, and the RAPs for New York's six AOCs. The highest priorities for selecting Bond Act projects are controlling persistent toxicants, cleaning up contaminated sediments, and enhancing aquatic habitat. Approximately \$23.9 million in Bond Act funding has been awarded to 27 projects that address these issues. These projects include 18 municipal wastewater improvement projects, six agricultural and non-agricultural nonpoint source abatement projects, and three aquatic habitat restoration projects.

BROWNFIELD REDEVELOPMENT

In addition to the negative impacts of sprawl, brownfields pose a direct threat to water quality through polluted runoff and groundwater

contamination. Brownfields economic development and greenspace restoration in the Great Lakes region helps protect and improve the environmental quality and livability of the entire Great Lakes ecosystem. By cleaning up brownfields along lakes and rivers, we not only restore the land, but help support beneficial water uses -- industrial, commercial and recreational -- that are inextricably linked to the adjacent land.

A brownfield is a site, or portion thereof, that has actual or perceived contamination and an active potential for redevelopment or reuse. Brownfield redevelopment can be thought of as a kind of land recycling. Often, the fears of environmental liability or uncertainties in cleanup costs keep developers and businesses from reusing old commercial and industrial properties. Instead, the tendency has been to build on greenfield sites, with no history of past contamination. This has been a highly destructive pattern, leading to the consumption of prime farmland and the departure of inner-city jobs to suburban fringe areas. Between 1981 and 1997, the binational Great Lakes region lost more than 11 million acres of its farmland, an area greater than the size of Lakes Ontario and Erie combined. Between 1992 and 1997 alone, the U.S. side of the Great Lakes Basin lost more than 650,000 acres of farmland.

| FARMLAND LOSS | | | |
|--|-----------|----|-----------|
| U.S. Great Lakes Basin (acres) '82-'97 | | | |
| IL | 55,283 | NY | 1,157,034 |
| IN | 214,084 | OH | 427,284 |
| MI | 1,071,568 | PA | 95,745 |
| MN | 133,311 | PA | 95,745 |
| Total: 4,055,223 | | | |

Table 5. Farmland Loss in the Great Lakes Basin from 1982 to 1997 (Source: 1997 Census of Agriculture, USDA - National Agricultural Statistics Service, April 1999).

This problem has also afflicted small towns and older, inner-ring suburbs, many of which are faced with the daunting task of trying to finance the cleanup and reuse of obsolete, abandoned structures. In response to this situation, EPA Region 5 made 'Promoting Sustainable Urban Development and Reuse of Brownfields' one of



its five Regional Environmental Priorities in FY 1998. Sustainable development seeks to meet the present needs of society without compromising the ability of future generations to meet their own needs. EPA's Brownfields Initiative strategies include funding pilot programs and other research efforts, clarifying liability issues, entering into partnerships, conducting outreach activities, developing job training programs, and addressing environmental justice concerns.

A number of notable activities have taken place in support of reviving Brownfields and promoting sustainable development:

- > Through the Brownfields National Partnership, the Federal government has been encouraging its partners to incorporate the principles of Smart Growth, sustainability and livability into development plans. Through these initiatives, we are showing that environmental protection and economic development can work together to benefit communities.
- > Thanks to the work begun by the Northwest Indiana Cities Brownfields Pilot, the effects of 20 years of illegal dumping have vanished from a 10-acre property. The site is now home to a new \$5 million automobile shredding facility. Prior to its inclusion in the Pilot, the piece of land was a vacant lot favored by midnight dumpers. Over the years, the accumulated garbage reached monstrous proportions. Fears of environmental contamination preventing redevelopment of the site were ultimately allayed through the combined efforts of the pilot, the State of Indiana, and EPA. Selecting sites for assessment that will lead to successful redevelopment and job creation is a continued goal of the Northwest Indiana Cities Brownfields Pilot.
- > The Grand Traverse Bay watershed is one of the fastest growing in the Great Lakes region. The USGS is working with Michigan State University on a study to develop a model that planners and policymakers can use to predict how socioeconomic factors cause changes in land use/land cover and how these changes affect water quality. A standard approach to monitor and detect water quality changes caused by changes in land use is also being developed. Because the watershed is relatively healthy now, any human-caused impact on the water quality should be easily detected, and the findings will be transferable throughout the Great Lakes region.
- > The Cleveland metro area's Regional Environmental Priorities Project (REPP) sets environmental priorities for the region and develops coalition approaches and action strategies for addressing environmental problems. The REPP concluded that many of their highly ranked problems were directly or indirectly driven by urban sprawl. It was thus decided that urban sprawl, which was not on the originally compiled working list of 16 problems, should take priority as the "umbrella issue" to be addressed during the implementation phase of the project. The REPP was recently recognized by EPA as 1 of 10 "success story" examples of community-based environmental protection at work.
- > Other EPA regional teams in the Great Lakes Basin have also begun to incorporate this issue into their work. The Southeast Michigan Team is funding a grant that is working to increase one community's involvement in local land use development and watershed protection decisions; the Northwest Indiana Team is participating in a local council on sustainable development; the Lake Michigan Team is assisting the Lake Michigan Public Forum in promoting better land use planning; the Lake Superior Team is sponsoring a land use conference promoting better nearshore development practices; and the Lake Erie Team is currently studying how to incorporate sprawl and sustainable development issues into its planning process.
- > The Southeast Michigan Council of Governments (SEMCOG) estimates that its region will grow by an estimated 426,000 persons between 1995 and 2020. However, 95 percent of this growth is likely to occur in



32 relatively rural communities that are also headwaters to several river systems, i.e., the Huron, Shiawassee, Rouge, Clinton, Grand, Belle, Black, Pine, and Raisin. SEMCOG is working with many communities who are proactively working to manage this growth. This new Headwaters Project has resulted in workshops, and the provision of data, information and maps to enable communities to make better planning decisions. Relevant topics range from impervious surfaces to greenways to appropriate zoning density. Michigan DEQ's Office of the Great Lakes is participating in this project as a supporting partner.

- > A company wanted to redevelop a parking lot into a new high rise apartment complex located at a prime location for housing and tourist attractions near Chicago's Navy Pier. After investigating the property, the developers discovered the land was contaminated with lead and volatile organic compounds (VOCs). In order to redevelop the property, the company enrolled the site in the Illinois Voluntary Cleanup Program. With help from EPA and Illinois EPA, remedial efforts were put into place, after which the groundwater was tested and met cleanup standards. Therefore, Illinois EPA issued a "no further remedial/corrective action letter." The project was completed in nine months and allowed for the construction of a forty story high rise complex, home to nearly 360 families, with at least 20 new jobs created.
- > Kessler Products manufactured extruded polyvinyl chloride (PVC) polymer products from 1964 until 1994 on 15 acres in Boardman, Ohio. Kessler Products had previously tried to sell the facility as an operating concern; however, because of soil contamination at the site, no one would buy it. The manufacturing equipment was sold and moved to another factory and the facility remained empty. The company tried to sell the property, but still no one would buy it because of the potential liability associated with the soil contamination. EPA and the State of Ohio worked to evaluate the level of

contamination. The State issued a covenant-not-to-sue under the Voluntary Action Program to Kessler Products. With these liability uncertainties resolved and the Kessler Product's commitment to bring the site into compliance with the clean-up goals of the Interim Voluntary Action, Kessler Products was able to negotiate a sale of the property.

- > Clean Water State Revolving Funds (CWSRF) can be a powerful financial instrument for cleanup to deal with non-point source contamination affecting water quality. Brownfields projects to correct or prevent water quality problems may be eligible for CWSRF funding, depending on the particular State. The list of brownfields projects that may be eligible includes site assessments, excavation and disposal of underground storage tanks, constructed wetlands, stormwater runoff, well capping, and excavation and disposal of contaminated soil. Ohio and Wisconsin have used CWSRF funds for a variety of brownfields/water quality projects.

CONCLUSION

The U.S. Great Lakes Program will continue to evolve and adapt to address ever changing challenges. We will continue to focus efforts on protecting the health of the residents of the Basin; the restoration and protection of vital habitats; and controlling the introduction and impacts of exotic species. The Program will implement a wide variety of means to address these issues. These include the Remedial Action Plan and Lakewide Management Plan processes and the State of the Lakes Ecosystem Conference (and other tools) to define research priorities, ecological needs, objectives and indicators, and appropriate remedial actions. And we will continue to pursue opportunities to work with our Canadian partners on Great Lakes issues of common concern. By successfully implementing these goals, the United States Great Lakes Program will continue to make tremendous strides towards protecting and restoring the chemical, physical and biological integrity of the Great Lakes Basin.

