

WATERSHED PROGRESS: Rouge River Watershed Michigan

'Historically, we could point to industries and municipalities as the major contributors. Now we recognize that as individuals we must change our behavior if water quality standards are to be achieved...The citizens of Southeast Michigan deserve a river which is safe and clean for our children and our future."

- Jim Murray, Director, Wayne County Department of the Environment Since 1991, the U.S. EPA has been promoting the watershed approach as a mechanism to achieve the next generation of water protection. The focus on watersheds, or water drainage areas, as the place provides people living there a meaningful context in which to identify problems and solutions. Below is a description of the Rouge River Watershed where the watershed approach is making a difference.

The system:

The Rouge Watershed comprises 467 square miles, including parts of 3 counties, 48 municipalities and 1.5 million people. The River itself is 127 miles long, has four main branches, and many tributaries. Located in southeastern Michigan, the watershed contains the most densely populated and urbanized land area in the state, including major portions of Detroit. The river empties into the Detroit River which connects Lakes St. Clair and Erie. Much of the river is surrounded by parkland, making it highly accessible to the public.

The State designated uses for the Rouge River are: water contact recreation; warm water fishery; industrial and agricultural water supply;

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commercial and recreational navigation (e.g., canoeing); and general aesthetic. In many parts of the river, these designated uses are not being met in dry or wet conditions. The International Joint Commission in the Great Lakes designated the Rouge River as one of the Areas of Concern due to its highly polluted condition. There are fish consumption advisories in place and the county health department has prohibited total body contact.

Many who could remember swimming and fishing in the river as children were deeply concerned that the river would never again be usable as a recreational resource. Under the leadership of the state, local citizens pulled together to develop a remedial action plan to define the problem facing the watershed and to identify causes and solutions.

The stresses:

Because the Rouge River Watershed is the drainage system for a heavily urbanized, industrialized area, one would expect discharges from industrial and wastewater treatment plants to be the major stresses to the system. These, however, have been effectively controlled under the State's wastewater permits system. The main remaining stressor to the system comes from what is called "wet weather pollution".

Despite the improvements in industrial and municipal wastewater treatment, watershed residents will be unable to freely enjoy the river without the threat of disease-causing organisms as long as raw sewage spills from combined sewer overflows and bacteria from leaking septic systems is still discharged into the river.

The sources:

The remedial action plan identified significant pollutant sources and the Rouge River Project (see below description) has subsequently conducted sampling programs to better define all of the pollutant sources to the river. Initial sampling and modeling has shown that controlling combined sewer overflows is only the first step in restoring the Rouge River. Other pollutant sources are stormwater, unpermitted discharges, failing septic systems, leaching dumps and possibly air deposition. Sampling in the headwater areas indicates that many sites failed water quality standards for coliform bacteria, indicating that raw and/or semi-treated sewage is entering the river. These high bacteria levels are above the combined sewer areas, and the sources of the bacteria have not been confirmed.

Potential sources include failing septic fields and illegal connections of sanitary pipes to storm sewers.

The strategy:

Cleaning up the Rouge River is a multistep process that must be a team effort. A remedial action plan was developed by the Michigan Department of Natural Resources (MDNR), now called the Michigan Department of Environmental Quality (DEQ), in partnership with communities, citizens, businesses, industries, and local governments.



Construction of the Dearborn Heights Retention Basin

Wayne County is spearheading the plan's implementation via the Rouge River National Wet Weather Demonstration Project (Rouge Project) with funding by EPA and local communities. The Rouge Project oversees the 17 combined sewer overflow abatement projects under construction (11 retention treatment basins and 6 sewer separation projects - see above photo). These control technologies will then be evaluated to help quantify their effect on the quality of the river so as to suggest the most appropriate combined sewer overflow (CSO) method. Because CSO control will not eliminate all pollution to the river, the Rouge Project is assessing and implementing non point source controls as well and pollution prevention programs for watershed residents and businesses. Success will be shared with other urban watersheds.

Another key aspect of the Rouge Project is to get information into the hands of the community so they can make informed decisions and obtain meaningful information on the portion of the watershed in which they live. In 1994, the Rouge Project developed a windows-based application of a Geographic Information System (GIS) to allow users to access, browse, and query sampling data sets from their personal computers. This tool is expected to be particularly useful to local officials who make land-use decisions.

Measures of Success:

Success is achieved only if the citizens can once again use the river. Toward this end, a goal has been set for one third of the combined sewer overflows (CSO) to be separated and treated by

1997. Signed permits are in place to control the remaining CSO by 2005. Before continuing the massive CSO construction effort, a key objective is to find the most effective combination of solutions (combined sewer overflow and non point source controls) that will result in the most significant water quality improvements.

Watershed studies, thanks to the grassroots organization Friends of the Rouge, are in place in 100 schools, many of which are linked by computers. In addition, predictive models have



"By working cooperatively, the communities in Southeast Michigan can finally expect to enjoy the many uses an urban river can provide."

- U.S. Representative John Conyers (D-MI)

been developed for pollutant loadings and remediation efforts have been prioritized. Finally, a stretch of river has been opened for canoeing, with more scheduled to open in 1996.

For more information, contact the Rouge River Project at (313) 961-0700.

EPA's Role

EPA, along with the Michigan Department of Environmental Quality, Wayne County Department of Environment, Rouge Remedial Action Plan Advisory Council, and others are members of the Rouge River Project Policy and Steering Committees. In addition, EPA awarded \$288 million to Wayne County for the Rouge River National Wet Weather Demonstration Project. For more information on EPA's involvement, contact EPA Region 5 at (312) 353-2147.

Nationally, EPA has been reorienting its programs and developing tools to facilitate the watershed approach since 1991. For more information on the watershed approach, please contact the EPA at Office of Wetlands, Oceans and Watersheds, 401 M Street, S.W. 4501F, Washington, DC 20460 (Attention: Watershed Outreach coordinator) or visit us on the world wide web at URL:http://www.epa.gov/OWOW.