



The Meramec River and Big River Navigate Collaboration to Clean Up Legacy Pollutants

The Meramec River and Big River Restoration Project, near St. Louis, MO is one of 19 designated locations for the nation's Urban Waters Federal Partnership (UWFP). This partnership works to reconnect urban communities, particularly those that are economically distressed, with their local waterways. The U.S. Environmental Protection Agency (EPA) and the U.S. Army Corps of Engineers (USACE) are the federal co-lead agencies for the Meramec River and Big River location. Additionally, nonprofit organizations, including the Nature Conservancy, the Missouri Coalition for the Environment, and the Open Space Council, have played a pivotal role. Strong support from the state government and community groups has shaped the project, ensuring it will have vast environmental, economic, and social benefits.

ABOVE: Volunteers participate in Operation Clean Stream, removing tires from the Big River. *Credit: Tracy Haag, Missouri Department of Natural Resources*

This UWFP project is located south of St. Louis, MO. The Meramec River is one of the longest free flowing rivers in Missouri and contains nationally significant ecological resources. The Meramec is known for its recreational use and flows for over 220 miles before emptying into the Mississippi River. The Big River is a tributary of the Meramec River and shares its ecological and recreational value.

Formerly a booming lead-producing region, towns located in the Meramec and Big River watersheds hold over 200 years of lead mining pollution. High levels of heavy metals, including lead, in sediment have entered the Big River. Wildlife, especially mussel and fish populations, has also been affected by the high lead concentrations in the sediment, and fish consumption advisories have been in place on the Big River since 1981.

Bringing Together Partners

Seeking to address lead contamination and habitat degradation, EPA and USACE serve as members of the Big River Task Force, a group of various state and federal governmental organizations. Their work aims to facilitate the cleanup of highly toxic sites along the rivers, restore natural habitat, and address pollution in the Big River.

A Watershed Management Plan with a Holistic Approach

In July 2012, a watershed management plan was completed for the Lower Meramec Watershed, which identified ways to improve the watershed. This collaborative effort built on community partnerships and resulted in specific recommendations to improve water quality for the Lower Meramec. These recommendations included: 1) riparian habitat restoration, 2) public education, and 3) further technical analysis to identify strategies to reduce pollutant loading. The East-West Gateway Council of Governments will provide an update to the Lower Meramec Watershed plan, which is scheduled to be



ABOVE: The Big River can be accessed through Washington State Park.
Credit: Tracy Haag, Missouri Department of Natural Resources

complete in 2017. Additionally, the Missouri Department of Natural Resources (DNR) and The Nature Conservancy have plans to complete a broader Watershed Management Plan for the entire Meramec Basin in the near future.

Improving Flood Preparedness and Response

The Meramec River has been a source of flood damage for many years. Flooding can lead to a variety of hazards, including infrastructure damage, erosion and crop loss, and disruption of critical services. To minimize damage, emergency management teams need information to prepare for and manage these events, however, localities tend to lack information both during and after floods.

To address this, the United States Geological Survey (USGS) Missouri Water Science Center (MOWSC) is currently developing online *flood inundation mapping tools (FIMS)* for portions of the lower Meramec River. The Meramec River floodplain is well suited for flood inundation mapping because of the ample availability of data at streamflow gages. The USGS FIM Program will help communities protect lives and property by providing tools and information to help understand local flood risks, and make cost-effective decisions on flood preparedness, response, and recovery. Mapping has begun for four reaches along the Lower Meramec River and is scheduled to be completed by the summer of 2018.

Connecting Youth to the Outdoors

To reverse the growing disconnect between youth and the outdoors, the Gateway Region YMCA, the Department of the Interior, and other St. Louis partners are encouraging youth to explore the natural world around them. To do this, they are working with schools in the Meramec Watershed. Their work seeks to advance *Let's Move! Outside*, an initiative aiming to connect youth and families with nature and public lands in their community. This initiative will include environmental education events and activities, including *Canoemobile*, in the Meramec Watershed. Through these efforts, youth and families in the St. Louis area will learn new skills, engage with others, and connect with their great outdoors through service projects, recreation, and environmental education.

Increasing Community Access to Meramec River

The City of Sunset Hills, a community within St. Louis, is partnering with Missouri American Water and Open Space Council to create a Meramec River access point to increase community access to the river. This project involves removing the remnants of an old boat ramp built in the 1950s that has deteriorated and blocked river access, and creating a walking path from Minnie Ha Ha Park to the river. This project will increase access to the Meramec River from the Minnie Ha Ha Park, benefiting more than one million park visitors each year.

Measuring Success

To date, the Meramec and Big River location has completed a variety of projects, including:

- Restoring 500 miles of the lower tributaries within the Meramec River through Operation Clean Stream,
- Removing 107,000 cubic yards of lead contaminated residential soil surrounding 360 homes in 2016,
- Removing and replacing lead-contaminated residential soil surrounding 2,997 homes since clean-up began, and
- Stabilizing 2,392 acres of mine waste piles, containing more than 10 million cubic yards of contaminated material.