

BLACK RIVER REMEDIAL ACTION PLAN



Working to restore and protect the environmental resources of the Black River watershed through a collaborative and science-based approach that improves the ecological, economic, and community health of all of its present and future inhabitants.

*Our River,
Our
Responsibility.*

Annual Report 2012

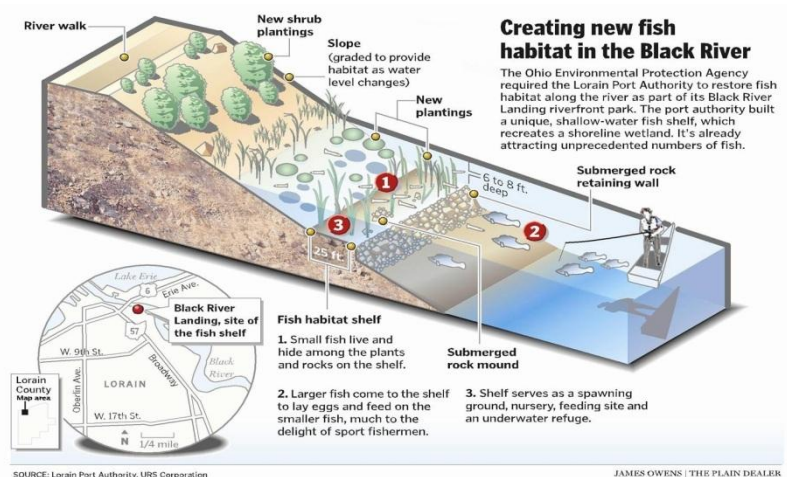
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Key Terms and Acronyms

As major restoration efforts are beginning in the Area of Concern (AOC), scientific terms and acronyms will be used that may be unfamiliar. This will help you decipher some of the language used within this Annual Report.

- **AOC:** Area of Concern: *a geographic area that has experienced environmental degradation*
- **Benthos or Benthic Macroinvertebrates:** *Benthic macroinvertebrates (or Benthos) are insect larvae, mollusks, worms, and crayfish that live on the bottoms of streams and rivers. They are important bellwethers for environmental degradation as they spend all or part of their lives in the water and are on the first rung of the food chain for the ecosystem.*
- **BUI:** Beneficial Use Impairment: *a change in the chemical, physical, or biological integrity of the AOC*
- **Fish Habitat Shelf:** *A man-made shallow water shelf designed for fish habitat, spawning, and refuge (a schematic is provided to the right)*
- **GLRI:** Great Lakes Restoration Initiative: *The new federal funding authority designed to restore the Great Lakes*



Message to our Stakeholders

Purpose

The purpose of this Annual Report is to inform the watershed community of the progress made by the Black River Remedial Action Plan (RAP) in its efforts to restore impairments to beneficial uses in the Black River Watershed Area of Concern (AOC). The Annual Report provides background information on many of the projects undertaken by the RAP and its members.

If you would like more information on any of the topics covered in this Annual Report, or would like to join the effort to restore the Black River, please contact any of the RAP Coordinating Committee members listed at the end of this report, or go to www.blackriverrap.com.

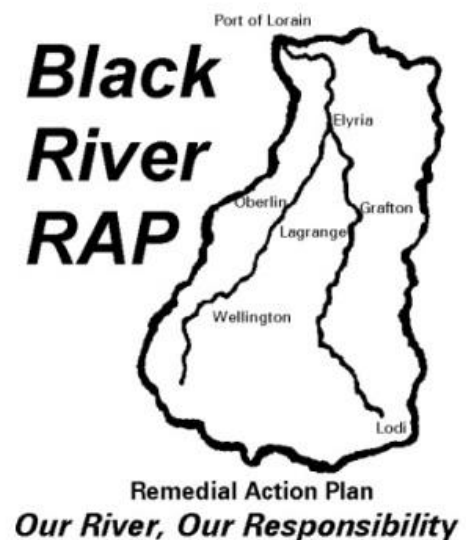
Message from the Chair - Special Thank You to Ken Pearce

(By: Jill Lis, R.S., Chair, Black River RAP Coordinating Committee)

This Annual Report historically has included a “Message from the Chair” of the Black River RAP. In my new role as Director of Environmental Health of the Lorain County General Health District, I have also taken on the role of Chair of the Black River RAP. I recently transitioned into these roles in May 2013, which explains the lag time in putting this 2012 Annual Report together. It is only fitting that my message serves as a “Thank You” to my predecessor, Ken Pearce, who retired from the Lorain County General Health District in August 2012.

Ken, on behalf of the Black River RAP, thank you for all of your hard work and devotion to the Black River RAP and its stakeholders. You were instrumental in the creation of the RAP Coordinating Committee, numerous RAP recognitions, and helped secure significant grant funding to aid in restoration efforts. As you mentioned in the 2011 Annual Report, I too trust that the Black River will continue to improve and that the RAP Committee will continue to be able to showcase its successes. Thank you, Ken, and best of luck to you in your retirement!

In moving forward, continued collaboration with our stakeholders is crucial in our pursuit to complete the restoration within the Black River Area of Concern. We must continue to guide this work in conjunction with the endorsed Black River Watershed Action Plan, in addition to the Black River Habitat Restoration Plan, Elyria’s Greenway and Trails Master Plan, and the Total Maximum Daily Load Plan. Strong partnerships will allow for continued funding opportunities to implement these plans and make an impact in the Black River.



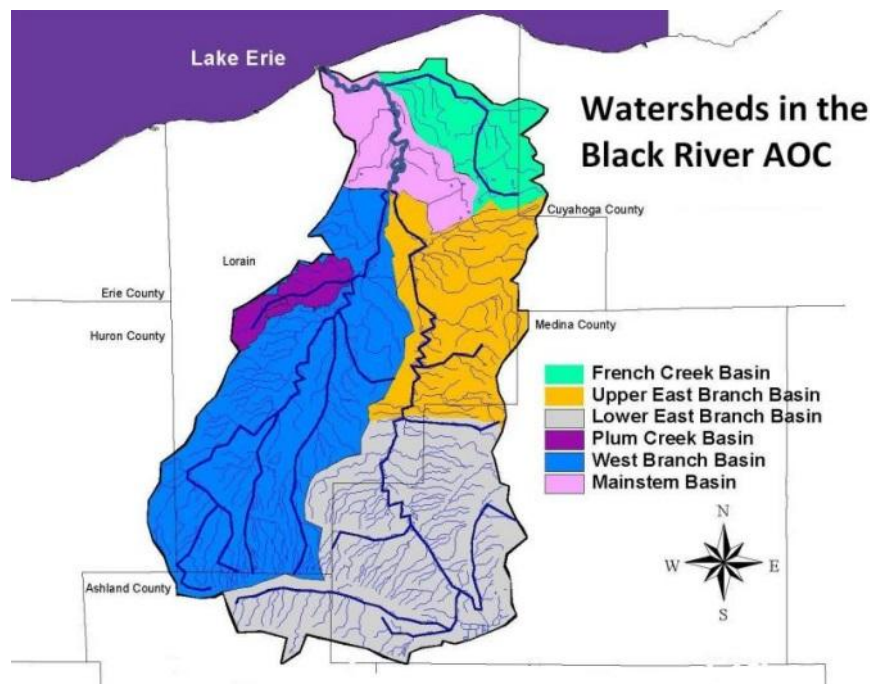
Beneficial Use Impairments

The Great Lakes Water Quality Agreement, as amended, calls for a Remedial Action Plan (RAP) to be developed to restore and protect any of 14 beneficial uses in an Area of Concern (AOC). A beneficial use impairment (BUI) means a change in the chemical, physical, or biological integrity of the AOC, sufficient to cause any of the following:

1. **Restrictions on fish and wildlife consumption** (Impaired for fish consumption criteria only)
2. Tainting of fish and wildlife populations
3. **Degradation of fish or wildlife populations** (Impaired for fish population criteria only)
4. Fish tumors or other deformities
5. Bird or animal deformities or reproduction problems
6. **Degradation of benthos** (Not impaired in the East Branch sub-watershed)
7. **Restrictions on dredging activities**
8. Eutrophication or undesirable algae
9. Restrictions of drinking water consumption or taste and odor problems
10. **Beach closings (recreational use)**
11. **Degradation of aesthetics**
12. Added costs to agriculture or industry
13. Degradation of phytoplankton or zooplankton populations
14. **Loss of fish and wildlife habitat**

Bold: Impaired in the Black River AOC

Underlined: Impaired, but in Recovery Phase



Lower Black River Restoration Progress

As of December 2012, the City of Lorain had secured seven grants to complete ecological restoration activities within the Black River AOC, and the City was able to wrap up several of these grant projects, including a \$6.3 million American Recovery and Reinvestment Act (ARRA) Project, a \$1.6 million National Oceanic and Atmospheric Administration (NOAA) Phase I Project, a \$340,000 U.S. Fish and Wildlife Service Project, and a \$100,000 Supplemental Environmental Project funded by Ohio EPA in 2011. Partners assisting the City with the grant projects include the Lorain Port Authority, Lorain County Metro Parks, Lorain Growth Corporation, and other Lorain County agencies.

Overall, 2012 grant projects resulted in the following on-the-ground restoration achievements:

- One million cubic yards of steel slag removed from the floodplain
- 23 acres of floodplain restored
- 11 acres of upland riparian area restored
- 3,640 linear feet of fish habitat shelves constructed
- 3,200 linear feet of bank restoration completed
- 62 acres of riparian area preserved
- 3 acres of invasive *Phragmites australis* removed
- Removal of an abandoned bioremediation system and contaminated soils

In conjunction with the City's restoration projects, monitoring of habitat and fish and macroinvertebrate communities was conducted before and after project construction to track success of the projects and evaluate progress made with respect to beneficial use impairments. In 2012, post-construction data was collected and processed for several of the restoration areas along the river. This data will help to inform and guide future restoration efforts in the Lower Black River watershed.



Before and After:

Floodplain Restoration (ARRA Grant)



Before and After:

Bank Restoration (NOAA Grant)

2012 Wellington Gas Leak

On January 12, 2012 in Wellington, Ohio, a pipeline owned by Sunoco Pipeline, L.P. (SPL) failed, and approximately 81,900 gallons (1,950 barrels) of gasoline were released to the surface and subsurface areas. The failure occurred near the Wellington Township maintenance garage, located at 105 Maple Street. Gasoline flowed north and east into a natural swale and then entered White Ditch, and it also flowed into a lower lying agricultural area to the north. Due to the ground being unfrozen, some of the gasoline was absorbed by the soil, which reduced migration.



Vacuuming of raw product at Peck Wadsworth Road dam (Courtesy of Wellington Fire Dept.)

First responders constructed a dam in White Ditch near Peck-Wadsworth Road to prevent gasoline from entering the Black River, and three underflow dams were installed by SPL. The dams stopped the flow and allowed for the recovery of gasoline. Pooled gasoline was vacuumed, and pumps and sparging systems were used to aerate the water within the ditch as means of remediation. Evacuation of impacted soils began on January 15, and within a week, approximately 8,000 cubic yards of soil were removed from the release point, areas near White Ditch, and the lower lying field.

SPL, Ohio EPA, U.S. EPA, and Hull & Associates, Inc. created a remediation work plan for White Ditch, and the plan was approved by both the Ohio EPA and U.S. EPA in July 2012. The plan outlined sediment removal and monitored natural attenuation (MNA) activities to be completed at the site, and seven areas of concern were identified in White Ditch from Maple Street to Peck-Wadsworth Road. MNA evaluation and sampling activities were completed at the site from June 18-21, 2013 in accordance with the approved work plan. Sediment removal in areas identified as needing excavation was completed between August 13 and September 5, 2012.

The objectives of the remediation efforts were to ensure that residual hydrocarbons in the sediment did not produce an oily sheen on the water in White Ditch and prevent future impact to water quality. Visual observation and chemical analysis were two methods used to evaluate the capacity for sediments to produce an oily sheen, and evaluation began in February 2012 and will carry through 2013. Sediment sampling was deemed complete in December 2012 after all sample results were below the action levels outlined in the work plan.



Aeration of White Ditch



White Ditch Restoration



After Restoration, June 2012

(Courtesy of Wellington Fire Department and Ohio EPA. Location: White Ditch at Peck Wadsworth Road)

The Black River Area of Concern: Are we getting any closer to delisting?

Our Black River was designated a Great Lakes Area of Concern (AOC) in 1989. This designation placed the Black River into a category as one of the 43 most degraded water systems in the Great Lakes. To catch a glimpse of how bad things were in the Black River, please see the video, [The Black River, a future as dark as its name?](#).

The Black River Remedial Action Plan Coordinating Committee was formed and issued its Stage 1 Report in 1991. The Stage 1 Report identified the impairments in the AOC and the causes and sources of any impairments. The Stage 1 Report found plenty of problems and identified nine impairments:

- Restrictions on Fish Consumption
- Degradation of Fish Populations
- Fish Tumors and Other Deformities
- Degradation of Benthos
- Restrictions on Dredging Activities
- Eutrophication or Undesirable Algae
- Beach Closings (Restrictions to Recreational Contact)
- Degradation of Aesthetics
- Loss of Fish and Wildlife Habitat

It has been more than twenty years since the Black River was designated an AOC and in that time, two United States and three Canadian AOCs have delisted. Is the Black River AOC getting any closer to delisting? The answer is a resounding YES! Here is a look at past progress.

- In 2004, the Black River was the first AOC on the US side of the border to show improvement in the Great Lakes RAP process when the Fish Tumors and Other Deformities impairment was re-designated to In Recovery Phase. At the same time, the Contact Advisory in the lower Black River, in place since 1983 due to chemical contamination of river sediments, was removed by the Ohio Department of Health.
- In 2005, the Black River was the first United States AOC to delist anything when it removed the Degradation of Benthos impairment in the East Branch sub-basin, roughly 47% of the AOC.

These successes are now 8 to 9 years old, and the question that many might ask is, “What has been done lately?” That answer would be PLENTY!

- Using the RAP Committee’s 2009 [Lower Black River Ecological Master Plan](#), the City of Lorain accessed millions of federal dollars to improve conditions in the lower river. The results of the City’s efforts include:
 - The 15- mile Black River mainstem now meets the Fish Population impairment removal target. In 1982, the mainstem managed only about 50% of the target.
 - The lower 6 miles of the mainstem are now within 69% of the Fish Habitat impairment removal target, and the other 9 miles of the mainstem meet the removal target.
- The French Creek and East Branch sub-basins now meet the Fish Population impairment removal target. In 1982, these sub-basins managed only about 85% of the delisting target.
- Improvements have been seen in the West Branch sub-basin for Fish Habitat and Fish Populations, but more work is needed in this troubled area.
- A new fish tumor study in the Black River began in 2012. While tumor incidence rates are not yet known, it is expected that this impairment can be removed with the new data. External

abnormalities in lower river resident fish populations, one component of this impairment, now meet the delisting target, as opposed to 1982 when as many as one fish in every five had some external abnormality.

The Black River is approaching the delisting targets in many areas, while some areas need additional work. The Black River RAP Coordinating Committee finds encouragement in the recent improvements and will continue in its efforts to restore the Black River AOC.

Second Annual Black River Kayak-a-Thon

The 2nd Annual Black River Kayak-A-Thon was held in conjunction with the Lorain International Festival on Saturday, June 23, 2012. The event was coordinated by the City of Lorain and funded by a grant from the National Oceanic and Atmospheric Administration (NOAA) through the Great Lakes Restoration Initiative (GLRI) and the City.

Over 70 people participated in the second annual event, which featured a casual float and competitive races for kayakers and canoers. The event was a public outreach activity for the City's grant-funded Lower Black River Habitat Restoration Project, and the purpose was to showcase the restoration work that had been accomplished on the Black River. Restoration work included the removal of slag, a by-product from ore smelting, from the floodplain; creation of fish shelves; and stream bank stabilization. The Kayak-A-Thon also served to encourage water recreation activities.

For more information about future events or the Black River Kayak-a-Thon, as well as the City's Black River restoration efforts, visit www.lorainblackriver.com.

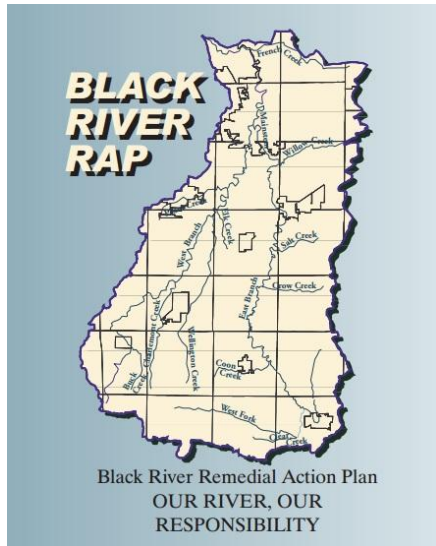


Crossing the finish line



The winning contestants!

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