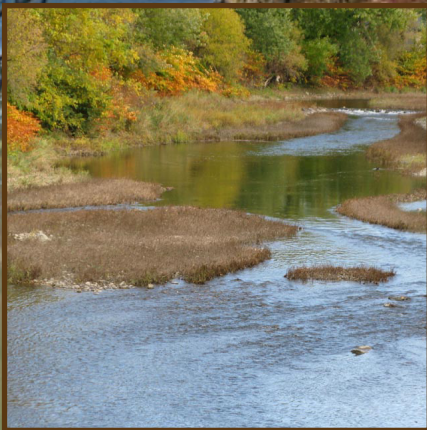


# Buffalo River Ecological Restoration Master Plan (ERMP)

JULY 2011



Prepared for:



**U.S. ENVIRONMENTAL PROTECTION AGENCY**  
Great Lakes National Program Office

Prepared by:



  
Buffalo River  
Ecological Restoration Master Plan

# **Buffalo River Ecological Restoration Master Plan (ERMP)**

**GSA Contract No. GS-10F-0061N  
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**July 2011**

**Prepared for:**  
**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**  
**Great Lakes National Program Office**  
77 West Jackson  
Chicago, IL 60604

**Prepared by:**  
**ECOLOGY AND ENVIRONMENT, INC.**  
368 Pleasant View Drive  
Lancaster, New York 14086

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# List of Abbreviations and Acronyms

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AOC	Area of Concern
BOA	Brownfield Opportunity Area
BUI	beneficial use impairment
CSO	combined sewer overflow
DELTs	deformities, eroded fins, lesions, and tumors
EPA	United States Environmental Protection Agency
EV	emerged aquatic vegetation
FEMA	Federal Emergency Management Agency
FS	Feasibility Study
GIS	geographic information system
GLLA	Great Lakes Legacy Act
GLNPO	Great Lakes National Program Office
GLRI	Great Lakes Restoration Initiative
IBI	Index of Biotic Integrity
IJC	International Joint Commission
ISCMP	invasive species control and management plan
LDB	left descending bank
LUNKERS	Little Underwater Neighborhood Keepers Encompassing Rheotactic Salmonids
MSA	Metropolitan Statistical Area
NHP	Natural Heritage Program
NRCS	Natural Resource Conservation Service
NWI	National Wetland Inventory
NYS	New York State
NYSDEC	New York State Department of Environmental Conservation
NYSDOT	New York State Department of Transportation
OPRHP	New York State Office of Parks, Recreation, and Historic Preservation
PCB	polychlorinated biphenyl

## List of Abbreviations and Acronyms (cont.)

PRISM	Partnership for Regional Invasive Species Management
RAC	remedial action committee
RAP	Restoration Action Plan
RDB	right descending bank
RIBS	Rotating Basin Studies
SAV	submerged aquatic vegetation
SFHA	Special Flood Hazard Area
SSO	sanitary sewer overflow
T&E	threatened and endangered
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service

# Executive Summary

This Buffalo River Ecological Restoration Master Plan (ERMP) provides a framework for ecological restoration in the Buffalo River and the recovery of the Buffalo River and the Area of Concern (AOC). It has been primarily developed from the information gained from regional stakeholders regarding their recommendations on the potential suitability of sites for habitat restoration within the study area. It is a stakeholder driven, collaborative effort to develop well defined steps for the future ecological restoration of the river.

## ES.1 History and Status of the Buffalo River

The Buffalo River has been central to the development of the city of Buffalo and western New York and has played a historic role in the settling and development of the Great Lakes states, first as terminus of the Erie Canal and later as a hub of trade and industry.

In the 1950s shipping began to bypass the city and the steel industry began its decline. The legacy of ecological damage from heavy industrial use of the area remains to a significant degree, which has resulted in the loss of fish and wildlife habitat as well as degraded water quality.

The river was identified in 1987 by the United States Environmental Protection Agency (EPA) and the International Joint Commission (IJC) on the Great Lakes as one of 43 AOCs where beneficial uses are impaired. Under the Great Lakes Water Quality Agreement (GLWQA), this designation required the development of a [Remedial Action Plan \(RAP\)](#). The original goal of the RAP, completed in 1989, was to restore the chemical, physical, and biological integrity of the Buffalo River ecosystem in accordance with the [GLWQA](#).

Nine of the fourteen designated beneficial uses of the Buffalo River AOC are listed as impaired. Three of the beneficial use impairments (BUIs) currently listed for the Buffalo River are habitat-related:

- Degradation of benthos;
- Degradation of fish and wildlife populations; and
- Loss of fish and wildlife habitat.

## **ES.2 Restoring the Buffalo River**

The EPA's Great Lakes National Program Office (GLNPO) has funded development of the Ecological Restoration Master Plan (ERMP). The purpose of the ERMP is to identify sites that have both ecological restoration potential and community support. Ecological restoration at these sites would improve fish and wildlife habitat. This would, in turn, contribute to delisting the habitat-related BUIs.

Since its designation as an AOC, much has been accomplished in the Buffalo River AOC, especially in remediating hazardous waste sites. Extensive remedial dredging work is planned to begin in the river in 2011. Habitat restoration has been conducted at Seneca Bluffs and a number of other locations, but much more needs to be done. Other steps must be taken, however, to delist habitat-related BUIs. Restoration of fish and wildlife habitat at many locations in and near the River and its tributaries is needed.

## **ES.3 A Stakeholder-Led Process**

Stakeholder participation has been an essential part of developing the plan. Stakeholders include the interested businesses, organizations, agencies, municipalities, and individuals that live and work in the Buffalo River project area. For a complete list of stakeholders, refer to Appendix C. Stakeholder input regarding the kinds of restoration needed and locations of candidate restoration sites within the project area has guided the process.

The process of developing the ERMP began with review and analysis of many previous studies and plans and on input received from stakeholders. In June 2010 a facilitated meeting of invited stakeholders from around the study area was convened. The stakeholders identified restoration opportunities as well as constraints that would need to be overcome for restoration to be implemented.

Additional focused meetings were held with stakeholders from local government and industry. Stakeholders identified more potential restoration sites. All candidate restoration sites were screened for their potential to support measures that would result in improved fish or wildlife habitat that would contribute to BUI delisting.

This document is intended to empower concerned stakeholders within the project area by identifying sites that exhibit potential for habitat, cultural, and community restoration and presenting project concepts for each of those sites. The proposed projects are specific implementable actions that would support the restoration of ecological function and contribute to the delisting of known BUIs.

In previous decades, it was generally thought that economic activity and growth was not compatible with fish and wildlife habitat and other ecological values. This is no longer universally accepted and there are a growing number of examples of economic development that incorporates the preservation, restoration, and



enhancement of natural habitats and ecological resources. Healthy economies and healthy societies depend upon healthy environments.

Today, the river still plays an important role for industries and its role in the current and future economic life of the region must be integrated into any ecological restoration plans. This ERMP has been developed to substantially enhance and add fish and wildlife habitat and strongly move habitat conditions in the direction of BUI delisting while avoiding actions that would unnecessarily hinder redevelopment of the Buffalo River and environs. Consultation with industrial and other stakeholders has enabled the proposal of projects that would benefit the environment without inhibiting redevelopment of brownfield areas or the continued uses of the river.

In Section 4 of this ERMP we propose projects on 26 sites within the focus area. The proposed projects have been developed as conceptual projects that include combinations of measures appropriate for each site. Measures proposed include invasive species control and management, structural stabilization of stream banks, aggressive planting of native vegetation, establishment of submerged aquatic vegetation and emergent shoreline vegetation, and structures in channels that would both protect stream banks by re-directing water toward the center of the channels and provide in-channel habitat.

These 26 sites include 12 sites on the Buffalo River, seven sites along Buffalo Creek, three sites along Cayuga Creek, and four sites along Cazenovia Creek. The proposed projects include a variety of restoration measures designed to:

- Create more naturalistic and stabile channels, shorelines, and stream banks;
- Create or enhance aquatic, wetland, and terrestrial vegetative communities and habitat;
- Control and manage invasive species; and
- Reduce erosion and control sedimentation.

At the first Stakeholder Consultation Meeting in June 2010, stakeholders defined the ERMP Mission Statement:

*To identify, prioritize, and facilitate opportunities to restore, protect and enhance habitat within the Buffalo River Habitat Corridor and its tributaries for a healthy and sustainable ecosystem that will benefit habitat, wildlife, corridor communities, and future generations.*

## **ES.4 Impacts**

The ERMP stakeholders are in agreement that ecological restoration and economic recovery are both critically important and that both can and must be achieved. This ERMP is a guide to action, building on past and ongoing cleanup efforts. When implemented, the ERMP will improve ecological functions in the Buffalo River and its tributaries.

Implementation of this ERMP cannot by itself produce economic recovery of the project area and the wider region. It can, however, help stimulate a renewed vitality and interest on the part of citizens to realize the ecological and economic potential that the natural resources can support. Implementing the proposed projects would have direct and indirect economic benefits. Property values are enhanced by the presence of intact natural areas and green space in communities, as demonstrated in multiple studies around the country. Improvements to the “green infrastructure” could also benefit property values of the project area. Implementing restoration throughout the project area could demonstrate the community’s commitment to a better future.

Stakeholders can use this ERMP to plan and seek resources to achieve their ecological and economic goals. The preparers of this ERMP intend for project sponsors to use the contents of the ERMP, especially the conceptual project descriptions (see Section 4.2), to apply for financial and technical assistance in order to implement their individual projects.