

Draft Restoration Plan and Environmental Assessment for the Duck and Otter Creeks Natural Resource Damage Assessment in Oregon, OH

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Ohio Ecological
Services Field Office

EXECUTIVE SUMMARY

The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended, (42 U.S.C. § 9601 *et seq.*) and the CERCLA Natural Resource Damage Assessment (NRDA) implementing regulations (43 C.F.R. Part 11) authorize federal and state agencies, as well as Indian tribes, to act as trustees of natural resources on behalf of the public. When hazardous substances are released into the environment and harm the public's natural resources, these trustees conduct assessments to determine the extent of injury, recover monetary and other damages from the Potentially Responsible Parties (PRPs), and use these recovered damages to plan and implement restoration actions that will compensate the public for the loss of natural resources and the services they would have provided but for the hazardous substance releases.

Decades of refining and manufacturing activity and improper waste disposal practices have resulted in releases of hazardous substances to Duck and Otter Creeks, a part of the Maumee River watershed. The natural resource trustee for Duck and Otter Creeks is the U.S. Department of the Interior (DOI), acting through the U.S. Fish and Wildlife Service (USFWS) ("Trustee"). The Trustee has been collecting, analyzing, and evaluating natural resources for years, beginning with issuance of a Pre-assessment Screen in August 2009. While continuing its assessment, the Trustee was made aware of a potential restoration project that would benefit a suite of potentially injured resources in the watershed. The project was being proposed through a collaborative process of federal, state, and local partners, and slated to begin implementation in 2024. Using the existing information from its ongoing assessment work, the Trustee prepared this Draft Restoration Plan and Environmental Assessment (Draft RP/EA) to identify and evaluate this and other restoration projects in the vicinity of Duck and Otter Creeks that are expected to restore, replace, rehabilitate and/or acquire the equivalent of natural resources and their services that have been injured by releases of hazardous substances. In this Draft RP/EA, four alternatives will be presented and evaluated using CERCLA NRDA evaluation factors (43 CFR 11.82(d)). During this process, Settling PRPs, including the Ohio Refining Company LLC, Chevron U.S.A., Inc., Energy Transfer (R&M), LLC (Sunoco), Pilkington North America, Inc., and Chemtrade Logistics, Inc., expressed interest in proportionally funding the proposed restoration project in exchange for a release of their respective liability on the Duck and Otter Creeks Site.

Through the CERCLA Natural Resource Damage Assessment and Restoration (NRDAR) process, the USFWS negotiated a cash settlement that is proposed to fund a portion of the Delaware/Clark Island Complex Restoration Project (Preferred Alternative) in the amount of \$ 6,322,670.00. The Trustee determined the funding of the Preferred Alternative would offset the injuries to natural resources caused by releases of hazardous substances as to the Settling PRPs. However, the damage assessment process that is identifying and quantifying injuries and losses to natural resources continues despite this settlement with the Settling PRPs. The Trustee is soliciting public comments on this Draft RP/EA and will address any public comments received in the Final RP/EA.

TABLE OF CONTENTS

EXECUTIVE SUMMARY	2
TABLE OF CONTENTS.....	3
LIST OF FIGURES	4
LIST OF TABLES.....	4
ABBREVIATIONS AND ACRONYMS LIST.....	5
1 Introduction.....	6
1.1 Purpose and Need for Restoration.....	6
1.2 NRDA Authority and Process	7
1.3 Compliance with Other Authorities	7
1.3.1 Compliance with NEPA.....	8
1.4 Public Participation	8
1.5 Administrative Record	9
1.6 Summary of Proposed NRDAR Settlement.....	9
1.7 Duck and Otter Creeks Site Overview	10
1.7.1 Site History and Remedial Activities.....	12
2 Injury Assessment.....	13
2.1 Contaminants of Concern.....	13
2.2 Assessment Area	13
2.3 Pathways.....	16
2.4 Summary of Injury Assessment	16
2.4.1 Injury Determination.....	17
3 Proposed Restoration Alternatives.....	18
3.1 Restoration Goals	18
3.2 Restoration Evaluation Criteria.....	18
3.3 Restoration Alternatives Considered.....	19
3.3.1 Alternative A: No Action/Natural Recovery	19
3.3.2 Alternative B: Delaware/Clark Island Complex Restoration Project (Preferred Alternative)	19
3.3.3 Alternative C: Connected Wetland and Fish Passage at Camp Sabroske.....	24
3.3.4 Alternative D: Corbutt Island Project	26
4 Conclusion	29
5 References	30

LIST OF FIGURES

Figure 1. Geographic Extent of Duck and Otter Creeks and the five Corresponding Lettered Exposure Areas.

Figure 2. Example pathways and exposure routes for Duck and Otter Creeks.

Figure 3. Map of the Delaware/Clark Island Complex Restoration Project Area in relation to Duck and Otter Creeks.

Figure 2. Map of the Delaware/Clark Island Complex Restoration Project Area.

Figure 5. Two renderings comparing the recently documented conditions (as of 2020) of the Delaware/Horseshoe and Clark Islands, to the expected mature conditions post-implementation of the project.

Figure 6. Map of Camp Sabroske location in relation to Ottawa National Wildlife Refuge Approved Acquisition Boundaries.

Figure 7. Aerial image of Corbutt Island habitat types located in Maumee River.

LIST OF TABLES

Table 1. The Geographic Scope of the Assessment Area.

Table 2. Summary of Alternatives Evaluation.

ABBREVIATIONS AND ACRONYMS LIST

AOC	Area of Concern
AR	Administrative Record
BGEPA	Bald and Golden Eagle Protection Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CE	Categorical Exclusion
CEQ	Council on Environmental Quality
CD	Consent Decree
CFR	Code of Federal Regulations
COC	Contaminant of Concern
Creeks	Duck and Otter Creeks
CWA	Clean Water Act
DDT	Dichlorodiphenyltrichloroethane
DOI	Department of the Interior
EIS	Environmental Impact Statement
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
GLLA	Great Lakes Legacy Act
GLNPO	Great Lakes National Program Office
HELP	Huron-Erie Lake Plains
LRW	Limited Resource Water
MBTA	Migratory Bird Treaty Act
MWH	Modified Warm Water Habitat
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NPL	National Priorities List
NRDAR	Natural Resource Damage Assessment and Restoration
NWP	Nationwide Permit
OAC	Ohio Administrative Code
OEPA	Ohio Environmental Protection Agency
PAH	Polycyclic Aromatic Hydrocarbons
PCB	Polychlorinated Biphenyls
PRP	Potentially Responsible Party
RM	River Mile
RP/EA	Restoration Plan and Environmental Assessment
Settling PRPs	Ohio Refining Company, LLC, Chevron U.S.A., Inc., Pilkington North America, Inc., and Chemtrade Logistics, Inc.
Site	Duck and Otter Creeks Site
USACE	U.S. Army Corps of Engineers
USC	U.S. Code
USFWS	U.S. Fish and Wildlife Service (Trustee)

1 Introduction

This Draft Restoration Plan and Environmental Assessment (Draft RP/EA) was developed by the U.S. Fish and Wildlife Service (USFWS), on behalf of the U.S. Department of the Interior (DOI)¹ acting as natural resource trustee (Trustee). This Draft RP/EA was prepared in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Section 111(i) and its implementing regulations, 43 C.F.R. § 11.93, with the goal of informing the public as to the types and scale of restoration to be undertaken to compensate for injuries to natural resources and ecological services lost due to releases of hazardous substances.

In this Draft RP/EA, the Trustee describes the purpose and need for action, identifies potential restoration alternatives, summarizes the affected environment, and describes the potential environmental consequences of proposed restoration activities. The Trustee is soliciting comments on this Draft RP/EA and will address comments in preparing a Final RP/EA where the Trustee will identify the Selected Restoration Alternative(s).

1.1 Purpose and Need for Restoration

In 2009, the Trustee completed a Pre-assessment Screen and Determination finding that the assessment of injuries to natural resources in Duck and Otter Creeks was appropriate (42 U.S.C. § 9601 *et seq.* and 43 C.F.R. Part 11). Subsequently, a Notice of Intent to Perform an Assessment was sent to Potentially Responsible Parties (PRPs) on May 21, 2010, and January 5, 2011, inviting them to cooperate with the Trustee in the assessment process.

Under CERCLA, the parties responsible for releases of hazardous substances shall be invited to participate in a cooperative NRDA process (43 C.F.R. § 11.32(a)(2)). Although the final authority regarding determinations of injury and restoration rests solely with the Trustee, cooperative assessments can be beneficial to the public by reducing duplication of effort, expediting the assessment, and implementing restoration earlier than might otherwise be the case. All PRPs declined to participate in the assessment of natural resource injuries. The Trustee completed a Final Assessment Plan on August 6, 2010 (USFWS 2010).

The need for restoration actions arises from the statutory requirement to use recovered Natural Resource Damage Assessment and Restoration (NRDAR) damages to restore, replace, or acquire the equivalent of natural resources injured by releases of hazardous substances (42 U.S.C. §9607(f)(1)). The purpose of this Draft RP/EA is to identify and analyze the reasonable range of alternatives that the Trustee has developed to address natural resource injuries. The proposed action is needed to restore natural resources and services lost to the public as a result of the releases of hazardous substances into Duck and Otter Creeks and to compensate the public for the loss of services pending restoration.

This document also serves as an Environmental Assessment pursuant to the National Environmental Policy Act (NEPA) and its implementing regulations (40 C.F.R. Part 1500 and 43

¹ The designation of natural resource trustees is explained in CERCLA, 42 USC 9607(f), and the National Contingency Plan, 40 CFR subpart G.

C.F.R. Part 46). NEPA compliance is discussed in detail in section 1.3.1. Finally, this Draft RP/EA provides the opportunity for the public to provide comment.

1.2 NRDA Authority and Process

This Draft RP/EA was prepared pursuant to the authority of DOI, represented by the USFWS, acting in its capacity as a natural resource trustee under Section 107(f) of CERCLA; as amended, 42 U.S.C. § 9607(f); Oil Pollution Act, 33 U.S.C. § 2702 (b)(2); Subpart G of the National Oil and Hazardous Substances Contingency Plan (40 C.F.R. § 300.600); and the CERCLA NRDA regulations (43 C.F.R. Part 11)². The NRDA process allows a natural resource trustee to pursue claims against a potentially responsible party for damages based on injuries to natural resources and their associated services in order to compensate the public for the loss of natural resources and their services. The goal of this process is to implement actions to restore, replace, or rehabilitate the natural resources that were injured or lost as a result of the release of a hazardous substance, or to acquire the equivalent resources or the services they provide. The scope of DOI's Trusteeship is for natural resources, and their supporting ecosystems, belonging to, managed by, held in trust by, appertaining to, or otherwise controlled by DOI, such as migratory birds and endangered species (40 C.F.R. § 300.600).

1.3 Compliance with Other Authorities

Other legal requirements may apply to NRDA planning or implementation. These may include:

- Endangered Species Act (ESA) (16 U.S.C. §§ 1531 et seq.),
- National Historic Preservation Act (NHPA) (16 U.S.C. §§ 470 et seq.),
- Federal Water Pollution Control Act (Clean Water Act, 33 U.S.C. §§ 1251 et seq.),
- Fish and Wildlife Coordination Act (16 U.S.C. §§ 661 et seq.),
- Migratory Bird Treaty Act (MBTA) (16 U.S.C. §§ 703-712), and
- Bald and Golden Eagle Protection Act (BGEPA) (16 U.S.C. §§ 668-668c).

The Trustee will ensure compliance with authorities, consultations, and permitting applicable to the selected restoration alternatives prior to implementation.

In addition to compliance with these statutes and regulations, the Trustee will consider relevant environmental or economic programs or plans that are ongoing or planned in or near the affected environment, and they will ensure that restoration projects neither impede nor duplicate such programs or plans. By coordinating restoration projects identified in this Draft RP/EA with other relevant restoration programs and plans, the

² For natural resource damages resulting from a discharge or release of a mixture of oil and hazardous substances, trustees must use 43 C.F.R. Part 11.15 C.F.R. § 990.20(c).

Trustee will enhance the overall effort to restore and improve the environment and resources affected by the releases of hazardous substances.

1.3.1 Compliance with NEPA

Actions undertaken by the Trustee to restore natural resources or services under CERCLA, and other federal laws are subject to the National Environmental Policy Act (NEPA), 42 U.S.C. §§ 4321 et seq., and the regulations guiding its implementation at 40 C.F.R. Parts 1500 – 1508. NEPA requires federal agencies to consider the potential environmental impacts of proposed federal actions. Under NEPA, federal agencies must consider the environmental effects of their actions, including impacts on social, cultural, and economic resources, as well as natural resources. An agency's NEPA evaluation may take the form of a Categorical Exclusion, an Environmental Assessment (EA), or an Environmental Impact Statement (EIS). A Categorical Exclusion (CE) is a category of actions that an agency has determined do not individually or cumulatively have a significant effect on the human environment (40 C.F.R. § 1508.4) and the action does not meet any of the extraordinary circumstances in Section 43 C.F.R. § 46.215. If the action does meet any of the extraordinary circumstances, further analysis and environmental documents must be prepared for the action. When determining whether a CE applies for a proposed activity, a federal agency must ensure that the proposed action fits within the category of actions described in the categorical exclusion.

In accordance with NEPA and its implementing regulations, this Draft RP/EA summarizes the affected environment; describes the purpose and need for restoration actions; identifies a reasonable range of alternatives; assesses the environmental consequences of the restoration alternatives, where necessary, including cumulative impacts; and summarizes the opportunity the Trustee will provide for public participation in the decision-making process. After conducting the NEPA analysis, the Trustee may conclude that the impacts associated with the restoration actions identified herein do not meet the threshold requiring an EIS.

1.4 Public Participation

Public participation and review is an integral part of the restoration planning process and is specifically required in the CERCLA NRDA regulations (e.g., 43 C.F.R. §11.81(d)(2)). In addition, NEPA and its implementing regulations require that federal agencies fully consider the environmental impacts of their proposed decisions and that such information is made available to the public.

The Trustee will review and consider all public comments and input on the Draft RP/EA received during the public comment period prior to publishing the Final RP/EA. The Trustee will prepare a responsiveness summary to the comments that will be included as an appendix in the Final RP/EA. Based on the public's comments, or other information, the Trustee may amend the Draft RP/EA if significant changes are made to the type, scope, or impact of the projects. In the event of a significant modification to the Draft RP/EA, the Trustee will provide the public with an opportunity to comment on that particular amendment. The public comment period will be from January 9, 2024 to February 8, 2024.

An electronic version of the Draft RP/EA is available online at:

<https://www.fws.gov/media/draft-restoration-plan-and-environmental-assessment-duck-and-otter-creeks-natural-resource>

To submit a comment, request a hard copy of the Draft RP/EA, or for additional information, Contact Amber Bellamy of the USFWS (contact information below).

The Natural Resource Trustee will accept written comments on the Draft RP/EA during the public comment period. Comments may be mailed or emailed to Amber Bellamy (address below). If emailing, please include “Draft RP/EA Duck and Otter Creeks NRDAR” in the subject line.

Amber Bellamy, U.S. FWS
4625 Morse Road, Suite 104,
Columbus, OH 43230
amber_bellamy@fws.gov

1.5 Administrative Record

Pursuant to 43 C.F.R. § 11.91(c), the Trustee maintains a publicly available Administrative Record (AR) for the Duck and Otter Creeks NRDAR, including restoration planning activities. The AR is located at the following website:

<https://www.fws.gov/library/collections/duck-and-otter-creeks-natural-resource-damage-assessment-and-restoration>

1.6 Summary of Proposed NRDAR Settlement

The Trustee has reached a proposed settlement with five PRPs, the Ohio Refining Company, LLC, Chevron U.S.A., Inc., Energy Transfer (R&M), LLC (Sunoco), Pilkington North America, Inc., and Chemtrade Logistics, Inc. (collectively the “Settling PRPs”), at the Duck and Otter Creeks Site (the “Site”). The proposed settlement resolves liability for the five Settling PRPs at the Site, while the United States continues to seek resolution with the remaining PRPs for damages to natural resources at the Site. The proposed settlement includes a cash payment by each of the Settling PRPs to fund a portion of a restoration-based project in the Maumee River watershed. Should the proposed restoration project be approved in the Final RP/EA, the Trustee will have received \$ 6,322,670.00 to restore, replace, rehabilitate and/or acquire the equivalent of injured natural resources in the watershed. This Draft RP/EA is limited to the discussion of the five Settling PRPs.

The proposed Consent Decrees (CDs) have memorialized the proposed settlement. The five CDs will be noticed for public review and comment for a thirty-day (30) period, which will run concurrently with the public notice and comment period on the Draft RP/EA. The proposed CDs provide that under CERCLA, the Oil Pollution Act (for the three oil companies), and the Clean Water Act (CWA), the Trustee will release the Settling PRPs from natural resource liability related to their ownership and operations at their respective facilities. In exchange, the Settling PRPs will be responsible for funding a portion of the proposed restoration project. The settlement is contingent on the court’s entry of the CDs between the Trustee and Settling PRPs.

Copies of the proposed CDs are available during the public notice and comment period here: www.justice.gov/enrd/consent-decrees.

After the close of the public comment period on the Draft RP/EA, the Trustee will review and consider all public input and comments prior to publishing the Final RP/EA and selecting the alternative. The Trustee will prepare a responsiveness summary to the comments that will be included in the Final RP/EA. If appropriate, after public comment, the U.S. Department of Justice will file a motion requesting the U.S. District Court to approve the CDs. Once the Court approves the settlement, the Trustee will transfer the funding to support the proposed restoration project on the Maumee River.

The draft CDs provide for the following restoration-based funding amount of \$6,322,670.00 to be paid by the respective companies as follows:

Ohio Refining Company, LLC will pay \$1,750,000.00.

Chevron U.S.A., Inc. will pay \$2,056,250.00.

Energy Transfer (R&M), LLC (Sunoco) will pay \$1,750,000.00.

Pilkington North America, Inc will pay \$678,920.00.

Chemtrade Logistics, Inc., will pay \$87,500.00.

Upon receipt, the NRDAR Fund Manager will transfer the monies to the Ohio Department of Natural Resources to fund a portion of the Preferred Alternative.

1.7 Duck and Otter Creeks Site Overview

Duck and Otter Creeks (collectively the “Creeks”) are two adjacent creeks in the larger urbanized Maumee River watershed in Northwestern Ohio. The Creeks lie just east of the Maumee River, and both flow into Maumee Bay on Lake Erie. Duck Creek begins at Collins Park in the City of Toledo, Ohio. It flows in a north to northeasterly direction for approximately four miles before entering the Maumee River near its mouth on Lake Erie. Otter Creek lies to the east of and roughly parallels Duck Creek, entering Lake Erie to the east of the mouth of the Maumee River. Otter Creek is approximately seven miles long. Both Creeks lie within the Huron/Erie Lake Plains (HELP) ecoregion. Ohio Environmental Protection Agency (OEPA) assigns an aquatic life habitat usage designation to every water body in the state, based on the water body's ability to support aquatic organisms. Duck Creek is designated as warmwater habitat (WWH; OAC. § 3745-1-11). Otter Creek, from its mouth up to river mile (RM) 7.0, is designated as modified warmwater habitat (MWH), while RM 7.0 to the headwaters is designated as limited resource water (LRW; OAC § 3745-1-23). A limited resource water designation reflects a stream with a low degree of biological integrity. Further, the lower 1.9 miles of Duck Creek (exposure areas A and B) and 2.0 miles of Otter Creek (exposure area A) are classified by OEPA as lacustraries³ (OEPA 2014, Figure 1).

³ Lacustraries are defined as the transition zone where a river or stream flowing into a freshwater lake is affected by the lake. The zone begins where lentic conditions (i.e., those still-water conditions typical of a lake) in the river or stream begin within the channel and ends where the lake begins at the channel mouth.

Both Duck and Otter Creeks have a history of channelization, and the presence of industrialization along their shores means their surface water conditions are typical of urban creeks. Both Creeks are receiving waters for stormwater and industrial effluents, which have the potential to affect surface water quality. However, both Creeks have riparian buffer vegetation of varying widths along their channels, and adjacent wetlands within their floodplains.

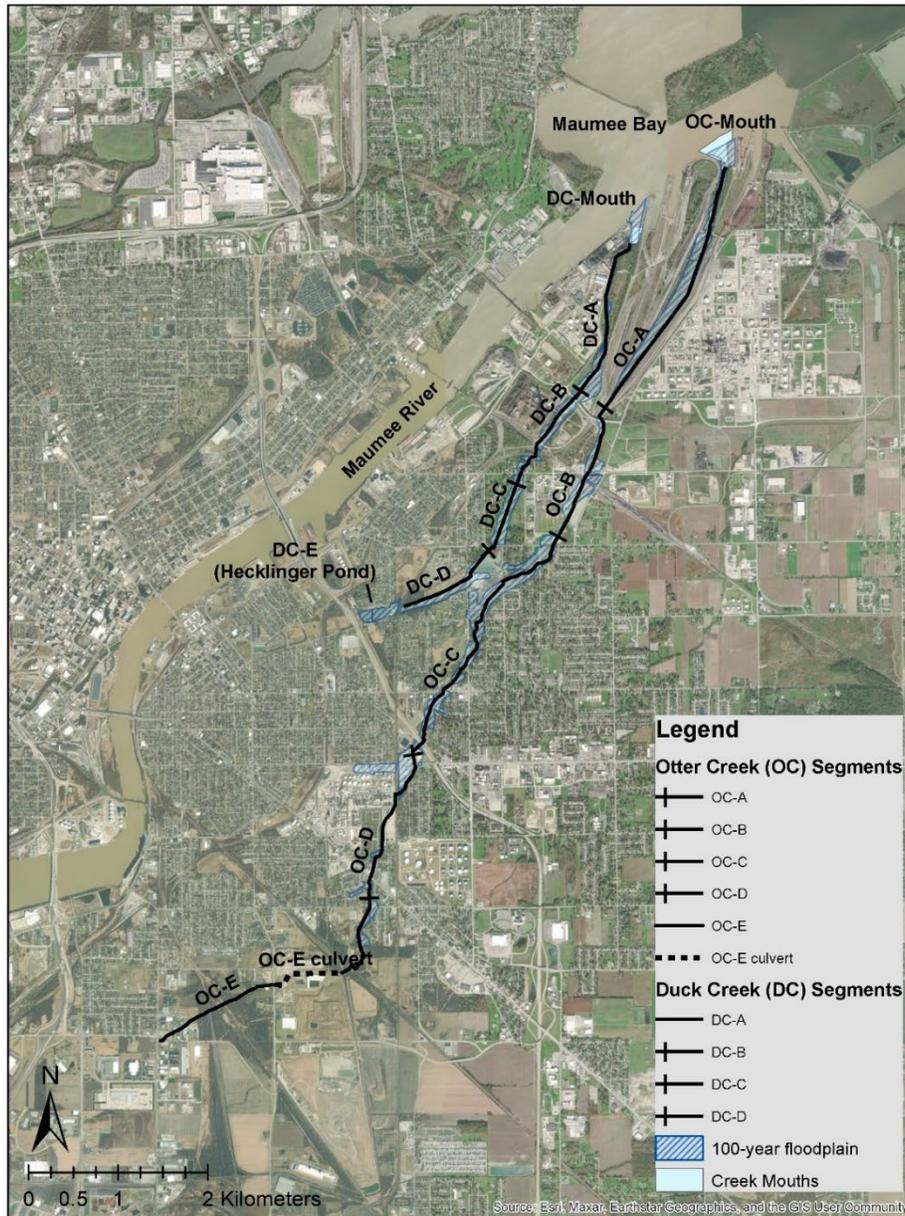


Figure 1. Geographic Extent of Duck and Otter Creeks and the five Corresponding Lettered Exposure Areas. Note: DC-E is not along the linear creek extent but instead corresponds to Hecklinger Pond.

The assessment area includes the riparian and associated aquatic habitats within the sub-watersheds of Duck and Otter Creeks, and the delta areas of these two creeks within Maumee Bay; and potentially includes biological resources that migrate significant distances away from the immediate vicinity of the Creeks, as well as upland areas within the sub-watersheds. The

Duck and Otter Creeks sub-watersheds reside in an area historically known as the Great Black Swamp. They have flat topographies and have experienced historical habitat modification, with the lower reaches of both Creeks traversing the industrialized southwestern shore of Lake Erie.

1.7.1 Site History and Remedial Activities

Decades of industrial activity in the vicinity of Duck and Otter Creeks have resulted in releases of hazardous substances into the watershed. Diamond Oil Company was the first industrial facility to open in the Otter Creek area in 1895; that facility grew into the 270-acre Crystal Oil Company (Fassett 1961; as cited in Boback 2010), now owned by Sunoco. Standard Oil Company opened what is now a 586-acre facility in 1919, which was later known as the BP-Husky Toledo Refinery and was recently renamed Ohio Refining Company, LLC. Paragon Refining Company began producing oil products on a 228-acre facility near Duck Creek in 1888, which was bought by Gulf in 1939. The refinery was closed in 1981 and refinery process equipment was decommissioned in 1984, before Gulf and Chevron merged in 1985. Over time, oil-related and other industries, manufacturing facilities, and several landfills were subsequently established in the area. Libbey-Owens Ford (now Pilkington North America, Inc.), a glass manufacturing plant, the Toledo Wastewater Treatment Plant, EnviroSAFE Services of Ohio, Inc., the Buckeye Partners L.P. pipeline, the CSX loading docks (for coal transportation), Chemtrade Logistics, Inc. (formerly known as Marsulex), and two commercial and residential landfills were sited near the Creeks, as were approximately sixteen formerly uncontrolled hazardous waste landfills. This industrialization, multiple oil spills, and uncontrolled releases from the hazardous waste landfills have all contributed to contamination of the Creeks.

The Creeks have not been designated as National Priorities List (NPL) sites by the United States Environmental Protection Agency (EPA), nor have the releases that are suspected of injuring natural resources been the subject of, or described in, a proposal for an NPL listing. However, a portion of Otter Creek was recently remediated through a public/private partnership pursuant to the Great Lakes Legacy Act (GLLA). The goal of GLLA is to accelerate contaminated sediment removal in Great Lakes Areas of Concern (AOCs) and in 2008 it was revised to include habitat restoration. However, habitat restoration does not always occur, and restoration efforts may be limited in spatial extent and not fully replace natural resources that were injured due to releases of hazardous substances. Despite the industrialized nature of the watersheds, substantial wetland complexes remain present along the creek.

Hazardous substances released in the Creeks include polychlorinated biphenyls (PCBs), polycyclic aromatic hydrocarbons (PAHs), metals, and organic pesticides. Released hazardous substances injured resources including surface water, sediment, biota, and benthic and other in-stream habitats. In July 2020, a GLLA Project Agreement amendment was signed for sediment remediation between EPA Great Lakes National Program Office (GLNPO) and three industrial partners: BP Husky Refining, LLC (BP) and BP Remediation Management Services Company; Chevron Environmental Management Company; Evergreen Resources Management Operations (Evergreen or Sunoco) (collectively referred to as the Otter Group) to remediate Otter Creek. The remedial action for Otter Creek began on September 30, 2020. The remediation removed 50,400 cubic yards of contaminated sediment via hydraulic dredging from the lower 1.7 miles of Otter Creek and its confluence with Maumee Bay. The voluntary public/private partnership was

funded by EPA and the Otter Group. Demobilization of the remedial site was complete on September 4, 2021.

While remedial actions have been completed at Otter Creek, these actions alone have not restored or compensated for lost natural resource injuries that occurred due to the release of hazardous substances from the Site. The Trustee's injury quantification focuses on natural resources within the channels of Duck and Otter Creeks, including biological resources that may move in and out of the Creek channels.

2 Injury Assessment

The goal of the injury assessment is to determine the nature and extent of injuries to natural resources to quantify the resulting ecological service losses and provide a basis for determining the needed scale and types of restoration actions.

Injury has occurred when a natural resource's viability or function is impaired such that the type and/or magnitude of services provided by that natural resource is reduced as a result of contamination (43 C.F.R. § 11.14 (v)). Determination of injury requires documentation that: (1) there is a viable pathway for the released hazardous substance from the point of release to a point at which natural resources are exposed to the released hazardous substance, and (2) injury of exposed natural resources (e.g., surface water, sediment, soil, ground water, biota) has occurred as defined in 43 C.F.R. § 11.62.

2.1 *Contaminants of Concern*

Hazardous substances found within the assessment area that are pervasive and persistent in the environment, and for which both media concentration and effect (i.e., toxicity) data are readily available include a suite of organic (e.g., pesticides, petroleum derivatives, synthetic carbon-based chemicals) and inorganic (e.g., metals) contaminants. Specifically, contaminants of concern (COCs) include those hazardous substances identified in the Ecological Risk Assessment as presenting potential risk to aquatic receptors (Tetra Tech 2008). These include PCBs; PAHs; metals including arsenic, barium, cadmium, chromium, mercury, lead, selenium, and zinc; and the pesticide dichlorodiphenyltrichloroethane (DDT) and its metabolites.

Site-specific toxicological information for all COCs was used for injury assessment when available, with the assumption that toxicity is additive (i.e., no synergistic or antagonistic effects) when contaminant mixtures are present. Toxicity tests using sediment from the assessment area are a direct measure of the toxicity of the contaminant mixture, implicitly accounting for all relevant environmental parameters. However, toxicity testing is less frequently used than measuring chemical concentration data. Toxicological thresholds to which contaminant concentration data may be compared, however, seldom account for the toxicity of mixtures.

2.2 *Assessment Area*

The assessment area is defined as the channel and mouth of both creeks including from Duck Creek RM 3.0 to the confluence of the Maumee River and Otter Creek RM 7.0 to the confluence of Maumee Bay in the Assessment Plan (Figure 1). Duck and Otter Creeks were then further

divided into five exposure areas and the Creek mouth, for a total of twelve areas (Table 1). The divisions were based on “(1) the varying exposure potential and conditions along both Duck and Otter Creeks, (2) the distribution of medium-specific sampling locations, and (3) the distribution of medium-specific chemical concentrations along both creeks (Tetra Tech 2005).”

Table 2. The Geographic Scope of the Assessment Area. DC= Duck Creek, OC= Otter Creek.

EXPOSURE AREA	BOUNDARIES	AQUATIC ACREAGE	WETLANDS ACREAGE ¹	BASIS ²
DUCK CREEK				
DC-E	Hecklinger Pond	9.5	8.5	Only portion of Duck and Otter Creeks where fishing is assumed to occur.
DC-D	Hecklinger Pond to Consaul Street	2.5	8.5	Portion of Duck Creek that is located closest to residential areas.
DC-C	Consaul Street to York Street	1.1	0	Location of Collins Golf Course; Creek is accessible, but exposure is assumed to be limited due to on-going recreational activities (golf) and public safety concerns.
DC-B	York Street to CSX Rail Crossing	4.1	17.3	Creek passes through commercial and industrial properties; residential area immediately south and west of York Street
DC-A	CSX Rail Crossing to Maumee River	3.0	37.6	Creek passes through commercial and industrial properties – most isolated portion of Creek.
DC mouth ³	Mouth of Duck Creek	4.2	--	
OTTER CREEK				
OC-E ⁴	South (upstream) end of Creek to Brown Road	1.8	4.4	Creek passes through area with limited development and minimal residents.
OC-D	Brown Road to Navarre Avenue	2.5	0.9	Creek passes between east and west portions of Sun Oil Company property; residential presence increases on east side of Creek north of Pickle Road.
OC-C	Navarre Avenue to Corduroy Road	4.1	3.4	Creek passes through largely residential area.
OC-B	Corduroy Road to Millard Avenue bridge	3.1	23.0	Creek passes through area with multiple industrial and waste disposal facilities and operations.
OC-A	Millard Avenue bridge to Lake Erie	9.0	56.0	Creek passes through heavily industrial area with limited access potential due to elevated security.
OC mouth ³	Mouth of Otter Creek	16.2	--	

Notes:

1. Includes all wetlands as defined by the Ohio Wetlands Inventory that lie within 2 m of the thalwegs of Duck Creek, Otter Creek, or Hecklinger Pond, as approximated based on the polyline in GIS.
2. Adapted from Tetra Tech 2005.
3. Creek mouths are bounded by the furthest extent of sediment sampling locations and Creek banks as visible in satellite imagery.
4. OC-E acreage excludes culverted portions of the reach.

2.3 Pathways

Pursuant to 43 C.F.R. § 11.14 (dd), a pathway is defined as: “The route or medium through which... a hazardous substance is or was transported from the source of the discharge or release to the injured resource.” Releases of hazardous substances and subsequent natural resource exposure has occurred in Duck and Otter Creeks at least since the early-1900s and is expected to continue into the future. Injury to ecological resources has likely occurred since that time and will similarly continue. COCs have been released in the vicinity of Duck and Otter Creeks from refineries and other industrial complexes, including landfills, due to refining, manufacturing activity, and improper waste disposal practices (Figure 2).

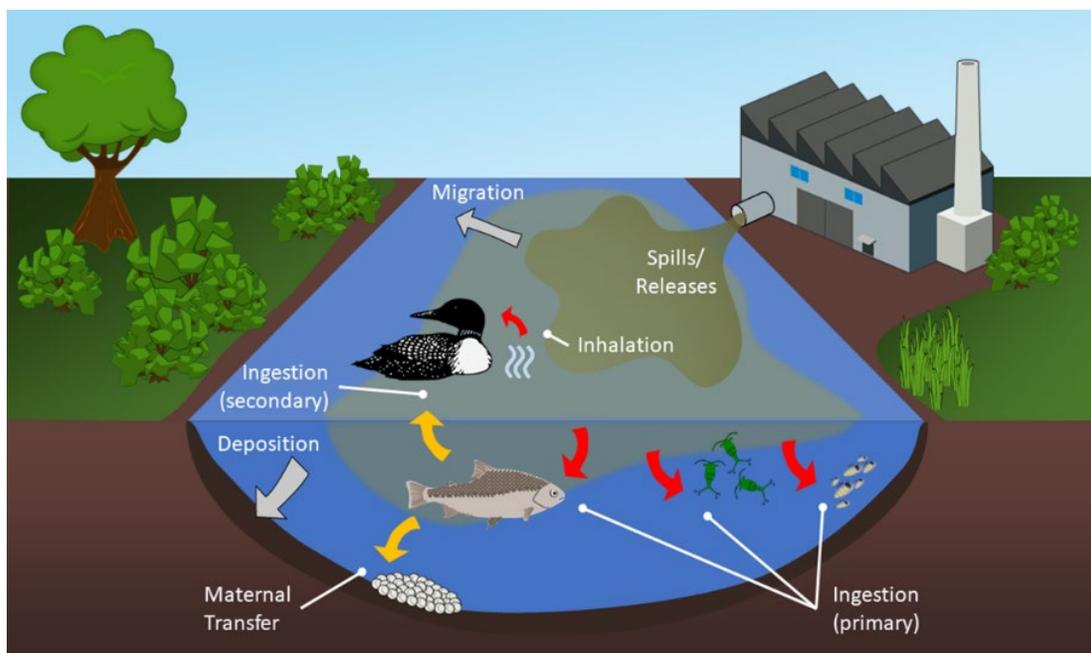


Figure 2. Example pathways and exposure routes for Duck and Otter Creeks.

2.4 Summary of Injury Assessment

The Duck and Otter Creeks NRDA focused on injuries to surface water, sediment, and biological resources to determine the nature and extent of injuries to natural resources and the services⁴ they provide.

In its injury determination phase, the Trustee evaluated natural resource injuries based upon the regulatory definitions provided below.

1. Surface Water Resources

- Concentrations and duration of hazardous substances sufficient to have caused injury to ground water, air, geologic, or biological resources, when exposed to surface water [43 C.F.R. § 11.62(b)(1)(v)].

⁴ Services means the physical and biological functions performed by the resource including the human uses of those functions. These services are the result of the physical, chemical, or biological quality of the resource.

2. Sediment Resources

- Concentrations and duration of hazardous substances sufficient to cause injury to biological resources, ground water, or surface water resources that are exposed to sediments [43 C.F.R. § 11.62(b)(1)(v); 11.62(e)(11)].

3. Biological Resources

- Concentrations of a hazardous substances sufficient to cause the biological resource or its offspring to have undergone at least one of the following changes in viability: death, disease, behavioral abnormalities, cancer, physiological malfunctions (including malfunctions in reproduction), or physical deformations [43 C.F.R. § 11.62(f)(1)(i)].

2.4.1 Injury Determination

The Trustee reviewed site-specific injury studies as well as other existing information, including remedial investigation data, ecological risk assessments, and scientific literature to determine if injury to natural resources has occurred. Each of the natural resources exposed to and potentially injured by the release of hazardous substances, includes surface water, sediment, and the organisms that utilize the riverine habitats (e.g., fish and benthic invertebrates).

Injured natural resources within the assessment area sustained losses in ecological services due to contamination. A reduction in the ability of an injured resource to provide these services (such as food for a higher trophic level), as compared to the baseline level of services or that which existed but for the contamination, is considered a service loss. Site-specific contaminant concentrations exceeded water quality criterion and sediment quality guidelines, indicating injury has occurred to surface water and sediment resources (SulTRAC 2007; Maumee RAP 2006; [Great Lakes Environmental Database \(GLENDa\)](#)). Field surveys of benthic invertebrates and fish in Duck and Otter Creeks found significant mortality and presence of physical anomalies compared to region-specific criteria, indicating injury has occurred to biological resources (Cardno ENTRIX 2012; USFWS 2010; OEPA 2015; [Great Lakes Environmental Database \(GLENDa\)](#)).

Based on information from these sources and with an understanding of the function of the terrestrial and aquatic ecosystems in Duck and Otter Creeks, the Trustee determined the injury and expected magnitude and severity of effects of the hazardous substances released from the Site on natural resources. Since sediment and fish resources are considered representative of the creek ecosystem and encompass multiple lines of evidence, quantified losses are considered applicable to the aquatic habitat. Losses are calculated on a habitat basis, therefore injuries to Trustee resources that rely on the aquatic habitat and other species groups are qualitatively incorporated. In addition, it is expected that restoration projects implemented to compensate for injuries to the creek system will benefit all species groups associated with that habitat.

3 Proposed Restoration Alternatives

3.1 *Restoration Goals*

Based on the nature of the natural resource injuries and losses, the restoration goals listed below were identified by the Trustee and guided development of this plan.

1. To offset lost ecological services due to hazardous substance contamination.
2. To enhance or restore degraded riverine habitat within the Maumee River watershed.
3. To create habitat within the Maumee River watershed.

3.2 *Restoration Evaluation Criteria*

The Trustee considered several restoration alternatives to compensate for lost natural resources and associated services and evaluated each alternative against the project selection criteria described in this section.

The CERCLA NRDA regulations provide ten factors to consider when evaluating restoration alternatives (43 C.F.R. § 11.82(d)).

1. **Technical Feasibility:** Technology and management practices are well known, and each element of the alternative has a reasonable chance of successful completion in an acceptable period of time. 40 C.F.R. §.11.14 (qq).
2. **Cost Benefit Comparison:** The relationship between the expected benefits of the alternative versus the costs; the full range of costs and benefits should be considered, in terms of recovery of the resource and public use.
3. **Cost Effectiveness:** When two or more activities provide the same or a similar level of benefits, the least costly activity providing that level of benefits will be selected. 40 C.F.R. § 11.14(j).
4. **Results of Any Actual or Planned Response Actions:** The contribution of any action to clean up the site will be considered in the identification and evaluation of restoration alternatives.
5. **Potential for Additional Injury:** Whether a restoration alternative may cause further harm to injured natural resources or other resources including short-term, long-term, and indirect impacts. Alternatives that avoid or minimize adverse impacts to the environment and natural resources are preferred.
6. **Natural Recovery Period:** Consideration of the time required for injured resources to recover if no action is taken.
7. **Ability of Resources to Recover With or Without Restoration:** Whether the resource would be able to recover on its own versus the ability to recover associated with the preferred restoration alternative(s). Projects that restore, rehabilitate, replace, or acquire the equivalent of the same type of resources and services injured by the contamination are preferred to projects that benefit different resources or services.
8. **Adverse Effects to Public Health and Safety:** Whether an alternative would pose unacceptable risks to public health and safety.
9. **Consistency with relevant federal, state, and tribal policies.**
10. **Compliance with applicable federal, state, and tribal laws.**

3.3 *Restoration Alternatives Considered*

To compensate the public for injuries to natural resources and associated lost services resulting from releases, the Trustee is required to develop alternatives for the restoration, rehabilitation, replacement, and/or acquisition of the equivalent of the natural resources and the services those resources provide (43 C.F.R. §11.82 (a)). The following subsections present a description and evaluation of restoration alternatives identified and developed by the Trustee consistent with the restoration criteria discussed in Section 3.2.

3.3.1 Alternative A: No Action/Natural Recovery

Pursuant to CERCLA and NEPA, the Trustee considered a No Action Alternative. Under this alternative, the Trustee would rely on natural recovery and would take no direct action to compensate the public for interim lost natural resource services. Under the No Action Alternative, some aquatic habitat resources within the Duck and Otter Creeks may recover naturally. However, the Trustee would do no additional work to compensate the public for injured natural resources. It is anticipated that this natural recovery would take decades.

The Trustee found that the No Action Alternative would not satisfy the Restoration Evaluation Criteria under CERCLA (Table 2). This Alternative would not compensate for injured resources, and technically feasible and cost-effective restoration approaches are available to compensate for these losses. Therefore, the No Action Alternative is not a selected restoration alternative when evaluated against the Restoration Evaluation Criteria.

3.3.2 Alternative B: Delaware/Clark Island Complex Restoration Project (Preferred Alternative)

Alluvial islands are critical habitats in riverine ecosystems and the islands in the Maumee River are at risk from erosion and loss due to increased peak discharge and flooding events, historic sand and gravel mining, and higher Lake Erie water levels over time (USACE 2022). Remnants of islands that were historically reduced in size within the watershed still remain between RM 15 and RM 7 (Hintz et al. 2020). The Delaware/Clark Island Complex Restoration Project (Delaware/Clark Island Project) will improve water quality and aquatic habitat while aiding to restore and protect Clark Island and Delaware/Horseshoe Islands. These islands are located in the Maumee River near Walbridge Park and are owned by the City of Toledo (Figures 3 and 4).

The Delaware/Clark Island Project includes the downstream portion of Delaware/Horseshoe Island and the entirety of Clark Island (Figure 5). The proposed action will restore approximately 23 acres of the original island footprint and include a rock revetment to protect the improved area from river flows, boat wakes, and ice scour. Project plans also include the establishment of an interior, protected open water area ideal for sediment deposition (Toledo 2023). Shoreline creation and enhancements will also reduce further island erosion and facilitate the island's ability to withstand higher and variable flows.

The Delaware/Clark Island Project includes the creation and restoration of island, wetland, and submerged habitat, including the creation and/or enhancement of habitat that benefits fish and macroinvertebrates, wildlife, including waterfowl and migratory birds, and aquatic, emergent,

and submergent vegetation. Plantings of native plant, shrub, and trees are also included as components of the project and are designed to enhance upland and wetland habitat locations. In addition, the restoration project will improve overall water quality through nutrient reduction and facilitating sediment deposition, which are significant concerns in the Maumee River watershed. Island habitat in the Maumee River is important for the health of fish and benthos, especially since this section of the river does not meet OEPA standards for fish habitat, fish communities, and benthic communities.

The Trustee and the Settling PRPs have reached agreement as part of the CDs to fund a portion of construction. Actual in-water work is projected to begin in 2024 and continue through Summer/Fall 2025 (Toledo 2023).

3.3.2.1 CERCLA Evaluation

Alternative B (Delaware/Clark Island Project), as planned, will increase a variety of habitat types, and is expected to improve fish and benthic communities. There is the potential that an increase in the fish diversity and community, as well as an increase in the benthic community, could occur as early as a year after completion of the restoration project. In addition, there is a consolidated effort for project funding and completion amongst federal, state, and local agencies. The Trustee considers Alternative B to be cost-effective and anticipates favorable benefit-to-cost ratios, with multiple substantial resource benefits (43 C.F.R. § 11.82(d)(2-3)).

Alternative B would result in the resolution of NRD liability for Settling PRPs and would serve the dual purpose of delisting the Maumee Area of Concern. The natural recovery at the Site is estimated to take multiple decades, and thus, restoration activities have been included as a part of the project (43 C.F.R. § 11.82(d)(6-7)). By restoring eroded portions of the islands and providing shoreline protection, due to a reduction in turbulence from the re-direction efforts of the Maumee River's main channel, the project provides climate change resiliency to the already high-risk area.

In accordance with Executive Orders 12898 and 14008, the Trustee and the U.S. Army Corps of Engineers have engaged with local communities in the planning of this restoration alternative. Due to the geographic location of the project, the same communities in Oregon/Toledo, OH that were impacted by the loss of natural resources due to impacts in Duck and Otter Creeks will benefit from the proposed restoration. This proximity to injury is reflected in the restoration goals targeting the Maumee River watershed (Section 3.1). Engineering, design, and construction planning activities for the Delaware/Clark Island Complex Restoration Project were finalized in June 2023 (Toledo 2023). These plans reflect significant stakeholder input gathered through discussions with more than 100 individuals during small meetings and public open house sessions⁵⁶⁷ (43 C.F.R. § 11.82(d)(1)(9-10)).

The potential for additional injury or adverse impacts resulting from these proposed actions is negligible (43 C.F.R. § 11.82(d)(5)). The habitat creation and restoration actions within the

⁵ <https://maumeeacoc.org/open-house-invitation-maumee-river-habitat-restoration-ideas/> (October 28, 2021 Open House).

⁶ <https://maumeeacoc.org/maumee-river-islands-sept-2022/> (September 20, 2022 Open House).

⁷ <https://maumeeacoc.org/maumee-river-islands-openhouse-march2023/> (March 14, 2023 Open House).

project would not negatively impact public health or safety; rather, protecting these natural resources would continue to provide the public with opportunities for outdoor recreation. Post-construction, paddlers are anticipated to be allowed to enter the protected open water areas of the islands but will be asked not to traverse on the rocks or upland areas of the islands (Toledo 2023) (43 C.F.R. § 11.82(d)(8)).

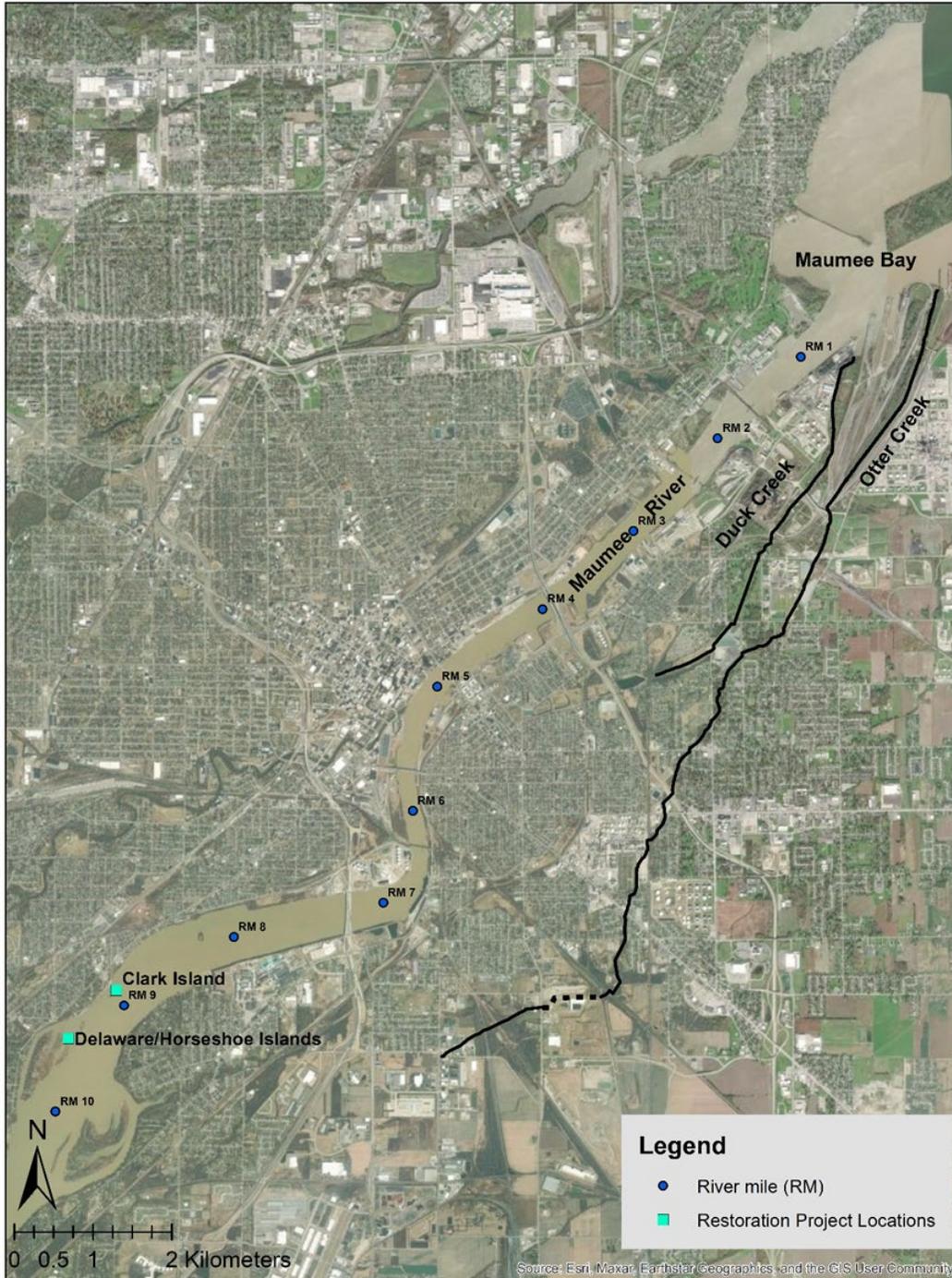


Figure 3. Map of the Delaware/Clark Island Complex Restoration Project Area in relation to Duck and Otter Creeks.



Figure 4. Map of the Delaware/Clark Island Complex Restoration Project Area.



Figure 5. Two renderings comparing the recently documented conditions (as of 2020) of the Delaware/Horseshoe and Clark Islands, to the expected mature conditions post-implementation of the project. Credit to: Toledo-Lucas County Port Authority, Verdantis, and C. Benick LLC.

3.3.2.2 NEPA Evaluation

In accordance with NEPA and its implementing regulations, the Trustee is proposing to incorporate by reference the U.S. Army Corps of Engineers (USACE) NEPA evaluation of the Delaware/Clark Island Complex Restoration Project which summarizes the affected environment; describes the purpose and need for restoration actions; identifies a reasonable range of alternatives; and assesses the environmental consequences of the restoration alternatives.

The USACE's evaluation of the Delaware/Clark Island Project considers compliance with each of the following laws, where applicable: Section 10 of the Rivers and Harbors Act of 1899; Sections 401, 402, and 404 of the Clean Water Act; Section 307(c) of the Coastal Zone Management Act of 1972, as amended; Section 302 of the Marine Protection, Research and Sanctuaries Act of 1972, as amended; the National Environmental Policy Act of 1969; the Fish and Wildlife Act of 1956; the Migratory Marine Game-Fish Act; the Fish and Wildlife Coordination Act, the Federal Power Act of 1920, as amended; the National Historic Preservation Act of 1966; the Interstate Land Sales Full Disclosure Act; the Endangered Species Act; the Deepwater Port Act of 1974; the Marine Mammal Protection Act of 1972; Section 7(a) of the Wild and Scenic Rivers Act; the Ocean Thermal Energy Act of 1980; the National Fishing Enhancement Act of 1984; the Magnuson-Stevens Fishery and Conservation and Management Act, the Bald and Golden Eagle Protection Act; and the Migratory Bird Treaty Act. In addition, compliance of the NWP with other Federal requirements, such as Executive Orders and Federal regulations addressing issues such as floodplains, essential fish habitat, and critical resource waters is considered ([2021 Nationwide Permit 27 – Final Decision Document](#)).

The USACE determined that the issuance of a Nationwide Permit 27 (NWP) for Aquatic Habitat Restoration, Enhancement, and Establishment Activities was appropriate for the project. An NWP 27 Permit includes “activities in waters of the United States associated with the restoration, enhancement, and establishment of tidal and non-tidal wetlands and riparian areas, the restoration and enhancement of non-tidal streams and other non-tidal open waters, and the rehabilitation or enhancement of tidal streams, tidal wetlands, and tidal open waters, provided those activities result in net increases in aquatic resource functions and services.”

The USACE determined that the NWP will not have a significant impact on the quality of the human environment and during the period the NWP is anticipated to be in effect, the activities authorized will result in only minor changes to the affected environment. For the Delaware/Clark Island Project, USACE determined that it has fulfilled its responsibilities under the applicable laws, regulations, policies, and guidance. The USACE also determined this activity, as described, complies with all terms and conditions of the Nationwide Permit (27). The USACE issued an NWP 27 for the Delaware/Clark Island Complex Restoration Project in April 2023.

3.3.2.3 Conclusion

The Trustee found that Alternative B: Delaware/Clark Island Complex Restoration Project satisfies the required Restoration Criteria (Table 2), the Trustee's restoration goals, and to be an acceptable project to compensate for Site-related natural resource injuries and losses, i.e., surface water, sediment, and biological resources. This alternative is, therefore, selected as the Preferred Alternative in this Draft RP/EA.

3.3.3 Alternative C: Connected Wetland and Fish Passage at Camp Sabroske

Alternative C: Connected Wetland and Fish Passage at Camp Sabroske is located at the confluence of the Toussaint and Packer Creeks in a portion of Camp Sabroske, a privately-owned campground and recreational area in Carroll Township, Ottawa County. Both Toussaint and Packer Creeks are tributaries of the Toussaint River and are located within the Maumee AOC. The lacustrine portion of the Toussaint River is considered impaired for benthic populations, fish populations, and fish habitat.

Camp Sabroske was historically a muskrat farm and consists of a complex of diked areas that are primarily open water habitat, with some forested and scrub/shrub wetland interspersed. The dikes are in disrepair and vegetated with woody and emergent species. There is a pump station in the southwest corner of the dike system and there are access trails on the dikes primarily used for hiking and birdwatching.

Alternative C includes the removal of sections of the internal levees, the renovation and armoring of the exterior river levee, and the installation of a pump and water control structures. This new infrastructure would connect the wetlands and Toussaint River (or Packer Creek) to restore fish passage for spawning and rearing and allow for precise management of water levels and aquatic vegetation, leading to 25 acres of restored and sustainably productive wetland habitat ([2020 Camp Sabroske Concept Plan](#)). Alternative C would include the purchase of the Camp Sabroske property, to be owned and protected in perpetuity by the Ottawa National Wildlife Refuge (Figure 6).

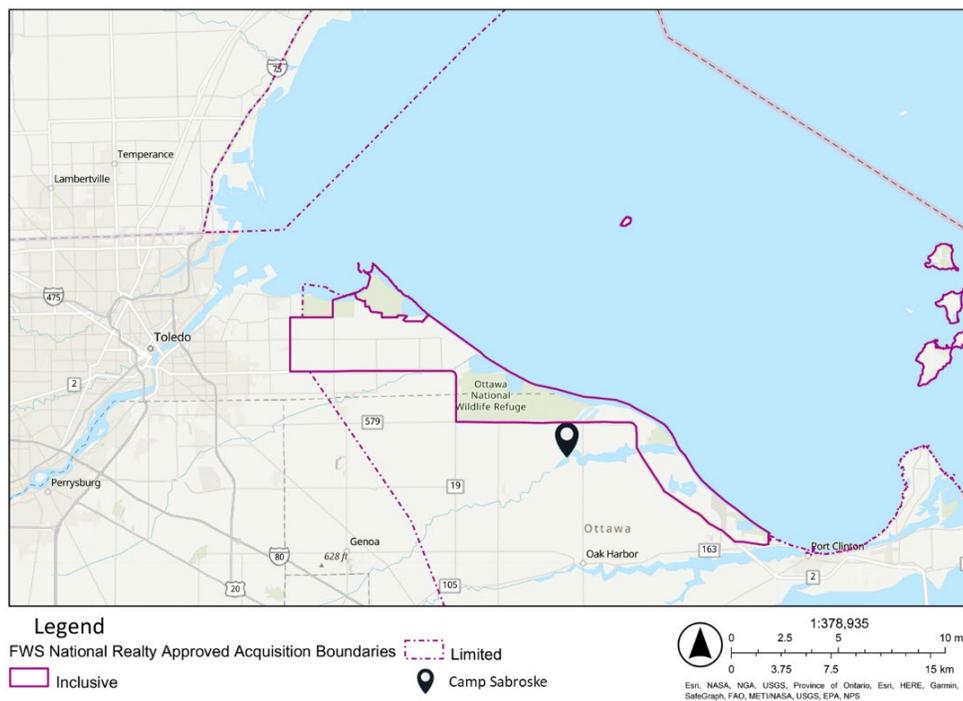


Figure 6. Map of Camp Sabroske location (black marker) in relation to the Ottawa National Wildlife Refuge Approved Acquisition Boundaries.

3.3.3.1 CERCLA Evaluation

The restoration concept design for Alternative C focuses on increasing habitat heterogeneity, improving riparian habitat, and creating habitat for fish and macroinvertebrates. Considering the planned restoration actions and the property's protection in perpetuity by the Refuge, the Trustee finds Alternative C to be technically feasible (43 C.F.R. § 11.82(d)(1)). The Trustee also considers Alternative C to be cost-effective, and anticipates favorable benefit-to-cost ratios, with multiple substantial resource benefits (43 C.F.R. § 11.82(d)(2-3)).

The potential for additional injury or adverse impacts resulting from these proposed actions is negligible (43 C.F.R. § 11.82(d)(5)). The creation and habitat restoration actions within the Connected Wetland and Fish Passage at Camp Sabroske project would not negatively impact public health or safety; rather, protecting these natural resources would continue to provide the public with opportunities for outdoor recreation. The proposed design also includes recommendations to improve access and recreation (43 C.F.R. § 11.82(d)(8)). The actions included within Alternative C are consistent and compliant with relevant federal, state, and tribal policies (43 C.F.R. § 11.82(d)(9-10)).

3.3.3.2 NEPA Evaluation

Alternative C would acquire and restore 25 acres of productive wetland habitat. The habitat acquisition and preservation actions included in Alternative C could be eligible for a NEPA categorical exclusion under DM part 516 Chapter 8.5 (A)(4). If Alternative C is selected as a preferred alternative, the Trustee would consider all relevant information and public input before issuing their determination if a CE is appropriate in the Final RP/EA.

3.3.3.3 Conclusion

The Trustee found that Alternative C: Connected Wetland and Fish Passage at Camp Sabroske satisfies the required Restoration Criteria (Table 2) and is considered an acceptable project to compensate for Site-related natural resource injuries and losses. However, two of the three Trustee-identified restoration goals (Section 3.1) prioritized restoration within the Maumee River watershed. The restoration actions included in Alternative C are located in the Portage River and Toussaint River watersheds; these are adjacent to the Maumee River watershed in northwestern Ohio but are spatially distinct.

In the process of evaluating restoration alternatives, the restoration actions included in Alternative C were awarded funding through the Great Lakes Restoration Initiative. Although Alternative C meets the Restoration Evaluation Criteria in this Draft RP/EA, the proposed restoration actions are not located within the Maumee River watershed. As this project has already received funding from another source, Alternative C is not considered a preferred alternative.

3.3.4 Alternative D: Corbutt Island Project

The Corbutt Island Project was presented to the Trustee by one of the Settling PRPs as a restoration alternative. The primary goal of Alternative D is to preserve and protect the natural resources Corbutt Island provides. This preservation could be accomplished by acquisition, or conservation easement. Corbutt Island is a small remnant island located in the lower Maumee River and consists of 23.7 acres of submerged aquatic and 1.4 acres of upland and lagoon habitats (Figure 7). There is the potential for additional restoration on the island, but it would require additional funding that was not proposed by the Settling PRP.



Figure 7. Aerial image of Corbutt Island habitat types located in Maumee River.

3.3.4.1 CERCLA Evaluation

The land preservation actions provided by Alternative D would be beneficial for the Maumee River watershed and the public. The land preservation actions within the Corbutt Island Project would not negatively impact public health or safety (43 C.F.R. § 11.82(d)(8)). The potential for additional injury or adverse impacts resulting from these proposed actions is negligible (43 C.F.R. § 11.82(d)(5)). The actions included within Alternative D are consistent and compliant with relevant federal, state, and tribal policies (43 C.F.R. § 11.82(d)(9-10)).

The Corbutt Island submerged aquatic habitat is comprised of loose sediments with little to no vegetation. This type of habitat would not provide a suitable environment for fish and invertebrates, and therefore would not compensate for injured resources. In addition, the Trustee has determined that significant restoration would be necessary to stabilize the island and create viable habitat. This need for additional funding would not be considered cost-effective or have a positive cost-benefit comparison (43 C.F.R. § 11.82(d)(2-3)). The recovery period to compensate for injured natural resources would be comparable to the recovery period for the No Action

alternative, as no additional restoration is included in the Corbutt Island Project (43 C.F.R. § 11.82(d)(6-7)).

Corbutt Island is partially submerged and has lost significant area to erosion. Given the predictions of climate modeling, Corbutt Island would likely be submerged over time. There is additional concern of the stability of Corbutt Island due to the adjacent property owner's dredging activity. The Trustee does not consider this to be a technically feasible restoration option (43 C.F.R. § 11.82(d)(1)).

3.3.4.1 NEPA Evaluation

Currently, it is unclear what management actions would be taken on Corbutt Island to ensure long-term protection of habitat. Land transfer and subsequent availability for recreational use on protected properties is anticipated to result in long-term, beneficial impacts to recreation.

Federally sensitive species occurring on and around the island include: Indiana Bat (*Myotis sodalis*; endangered), Northern Long-eared Bat (*Myotis septentrionalis*; endangered), Tricolored Bat (*Perimyotis subflavus*; proposed endangered), Piping Plover (*Charadrius melodus*; endangered), Red Knot (*Calidris canutus rufa*; threatened), Karner Blue Butterfly (*Lycaeides melissa samuelis*; endangered), Monarch Butterfly (*Danaus plexippus*; candidate), Rusty Patched Bumble Bee (*Bombus affinis*; endangered), and Eastern Prairie Fringed Orchid (*Platanthera leucophaea*; threatened). There are no critical habitats for these species on or around Corbutt Island. The Corbutt Island Project would have no adverse effect on federally listed, threatened, or endangered species or their designated critical habitat; species proposed for federal listing; or proposed critical habitat.

It is unknown what entity would own or hold the conservation easement of Corbutt Island. If a conservation easement were pursued, a conservation easement of the island would prohibit the use or any activity on the property that would impinge upon or interfere with preservation of the habitat located on the island in its present condition.

3.3.4.2 Conclusion

The Trustee found that Alternative D: Corbutt Island Project would not satisfy the Restoration Evaluation Criteria under CERCLA (Table 2). This Alternative would not compensate for injured natural resources, and technically feasible and cost-effective restoration approaches are available to compensate for these losses. Therefore, the Corbutt Island Project is not considered a preferred restoration alternative when evaluated against the Restoration Evaluation Criteria.

Table 2. Summary of Restoration Alternatives Evaluation.

ALTERNATIVE	DESCRIPTION	CRITERIA AND EVALUATION
A	No Action/Natural Recovery	<ol style="list-style-type: none"> 1. Technical Feasibility: Pass. 2. Cost/Benefit: Not applicable. 3. Cost Effectiveness: Not applicable. 4. Results of Response Actions: Not applicable. 5. Additional Injury: Additional interim loss would occur. 6. Recovery Period: Predicted to take decades. 7. Recovery Ability: Not applicable. 8. Public Health and Safety: Not applicable. 9. Policy Consistency: Fail. Restoration is feasible under CERCLA. 10. Regulatory Compliance: Not applicable.
B	Delaware/Clark Island Complex Restoration Project (Preferred Alternative)	<ol style="list-style-type: none"> 1. Technical Feasibility: High. 2. Cost/Benefit: High. 3. Cost Effectiveness: High. 4. Results of Response Actions: Not applicable. 5. Additional Injury: Not applicable. 6. Recovery Period: High. 7. Recovery Ability: High. 8. Public Health and Safety: Pass. 9. Policy Consistency: Pass. 10. Regulatory Compliance: Pass.
C	Connected Wetland and Fish Passage at Camp Sabroske	<ol style="list-style-type: none"> 1. Technical Feasibility: High. 2. Cost/Benefit: High. 3. Cost Effectiveness: High. 4. Results of Response Actions: Not applicable. 5. Additional Injury: Not applicable. 6. Recovery Period: High. 7. Recovery Ability: High. 8. Public Health and Safety: Pass. 9. Policy Consistency: Pass. 10. Regulatory Compliance: Pass.
D	Corbutt Island	<ol style="list-style-type: none"> 1. Technical Feasibility: Fail. 2. Cost/Benefit: Low. 3. Cost Effectiveness: Low. 4. Results of Response Actions: Not applicable. 5. Additional Injury: Not applicable. 6. Recovery Period: Predicted to take decades. 7. Recovery Ability: Not applicable. 8. Public Health and Safety: Pass. 9. Policy Consistency: Pass. 10. Regulatory Compliance: Pass.

4 Conclusion

The Duck and Otter Creeks have a decades-long hazardous substances release history of COCs that include PCBs, PAHs, metals, and organic pesticides. Through these past disposal practices, both natural resources and natural resource services have been and continue to be injured.

The goal of the NRDAR process is to plan and implement actions to restore, replace, rehabilitate, and/or acquire the equivalent of the natural resources and natural resource services that were injured or lost because of the hazardous substance release(s).

The objective of any restoration action under CERCLA is to restore or replace natural resources and the services such resources provide for the benefit of the American public. To meet that objective, the benefits of a restoration project must be associated with the natural resource injured and/or lost as a result of the hazardous substance release(s).

The preferred restoration alternative presented by the Trustee in this Draft RP/EA is Alternative B: Delaware/Clark Island Complex Restoration Project. The restoration project would create and enhance various habitats for a diverse set of fish, wildlife, and vegetation within the Maumee River watershed, as well as resolve liability for the five Settling PRPs at the Duck and Otter Creeks Site. The Trustee is soliciting public comments on this Draft RP/EA and will address any public comments received in the Final RP/EA.

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