Draft Natural Resource Restoration Plan
&
Environmental Assessment
for the
Nease Chemical Assessment Area

5 March 2015

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TRUSTEES:	State of Ohio acting through the Ohio Environmental Protection Agency and U.S. Department of the Interior acting through the U.S. Fish and Wildlife Service
LEGAL AUTHORITY:	Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) (as amended), 42 U.S.C. § 9601, *et seq*. Federal Water Pollution Control Act (Clean Water Act) (as amended), 33 U.S.C. § 1251, *et seq*. Natural Resource Damage Assessments (NRDA), 43 C.F.R. Part 11 National Environmental Policy Act (NEPA) of 1970 (as amended), 42 U.S.C. § 4321, *et seq*.
RESPONSIBLE FEDERAL AGENCIES:	Region 3, U.S. Fish and Wildlife Service, Lead Agency
RESPONSIBLE STATE AGENCIES:	Ohio Environmental Protection Agency, Lead Administrative Trustee Ohio Department of Natural Resources
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TABLE OF CONTENTS

SECTION 1

INTRODUCTION AND SUMMARY

This Draft Restoration Plan and Environmental Assessment (RP/EA) has been prepared by the State and Federal natural resource Trustees to address natural resources injured and ecological services lost due to releases of hazardous substances from the former Nease Chemical facility near Salem, Ohio.

The Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. § 9601, *et seq*. [CERCLA, or more commonly known as the federal "Superfund" law], and the Federal Water Pollution Control Act, 33 U.S.C. § 1251, *et seq*. [more commonly known as the Clean Water Act or (CWA)] authorize States, Indian Tribes, and certain Federal agencies that have authority to manage or control natural resources, to act as "Trustees" on behalf of the public, to restore, rehabilitate, replace, and/or acquire natural resources equivalent to those injured by hazardous substance releases. The Department of the Interior's Natural Resource Damage Assessments (NRDA) regulations are set forth in 43 C.F.R Part 11.

The State of Ohio, acting through the Ohio Environmental Protection Agency (Ohio EPA) and the United States Department of the Interior (DOI or the Department), acting through the United States Fish and Wildlife Service (USFWS) (collectively referred to as the Trustees) have worked together, in a cooperative process, to determine what is necessary to address natural resource injuries caused by releases of hazardous substances including, but not limited to: mirex, chlordecone (kepone), hexachlorocyclopentadiene, chlorinated ethenes, and chlorinated benzenes from the former Nease Chemical facility.

The Trustees are in settlement negotiations with the Potentially Responsible Party (PRP) in which the PRP would implement various projects to compensate the public for injuries to natural resources due to releases of hazardous substances from the former Nease Chemical facility. Therefore, the purpose of this Draft RP/EA is to present the Trustees' Preferred Alternative to accomplish the goal of restoring, rehabilitating, replacing and/or acquiring the equivalent of those natural resources injured, and the services those resources provide. Public comments are being sought on this Draft RP/EA and will be considered and incorporated in the Final RP/EA as appropriate.

Public Comment Period: March 5, 2015 to April 17, 2015. The Trustees will accept written comments on the Draft RP/EA during the public comment period. Comments may be sent to: Sheila Abraham, Ohio EPA, Northeast District Office, 2110 East Aurora Road, Twinsburg, OH or sheila.abraham@epa.ohio.gov **OR** Deborah Millsap, U.S. FWS., 4625 Morse Road, Suite 104, Columbus, OH 43230 or deborah_millsap@fws.gov.

Public Meeting: The Trustees will hold a public meeting to explain the Draft RP/EA. Oral and written comments will be accepted at this meeting, which will be held on April 9, 2015 at 6 p.m. at Salem Public Library (Quaker Room), 821 E. State Street, Salem, Ohio 44460.

Additional Information: Available from Ohio EPA's Northeast District Office, located at 2110 East Aurora Road, Twinsburg, Ohio (contact: Sheila Abraham at (330) 963-1290 or at sheila.abraham@epa.ohio.gov).

SECTION 2

PURPOSE AND NEED FOR RESTORATION

2.1 The Nease Chemical Facility – Summary of Release History

The former Nease Chemical facility is located in Columbiana County, Ohio, approximately 2.5 miles northwest of the town of Salem. The Nease Chemical site[1] (Site) includes the former Nease Chemical facility (approximately 44 acres); portions of the adjoining former Crane-Deming facility (approximately 35 acres), Feeder Creek, and portions of Middle Fork Little Beaver Creek (MFLBC). Environmental media have been contaminated by hazardous substances including, but not necessarily limited to, chlorinated benzene compounds, chlorinated ethenes, mirex, photomirex, and kepone, as well as other synthetic pesticides. Contamination from the former Nease Chemical facility traveled via Feeder Creek, a tributary draining the former facility areas, and possibly other routes, contaminating environmental media, including, but not limited to, soil, ground water, surface water, sediments, flood plain/wetland areas, as well as biota in MFLBC in Columbiana and Mahoning Counties, Ohio. Site-related contamination has been detected in almost 35 river miles (RM) of MFLBC, from RM 36.7, where Feeder Creek enters MFLBC, downstream to RM 1.9.

2.2 Natural Resource Injuries

Natural resources or resources means land, fish, wildlife, biota, air, water, ground water, drinking water supplies, and other such resources belonging to, managed by, held in trust by, appertaining to, or otherwise controlled by the United States, any State, or local government. These natural resources have been categorized into the following five groups: surface water resources, ground water resources, air resources, geologic resources, and biological resources. Injuries occurred or likely occurred to surface water resources (including bed, bottom and bank sediments), and the following biological resources, including their supporting ecosystems: fish, migratory birds, fish eating birds, wading birds, aquatic organisms and fish eating mammals. Based on Trustee estimates, approximately 280 acres of aquatic habitat have been contaminated by hazardous substances. Injured habitats include, but are not limited to, forested, submergent, and emergent wetlands, as well as surface waters and bottom sediments of the MFLBC.

Toxic contaminants have wide ranging effects on aquatic and terrestrial life. Acute (short term) effects may include the death of birds, fish and other animals, and death or low growth

[1] The United States Environmental Protection Agency (U.S. EPA) placed the Nease Chemical site (Site) on the National Priorities List for clean-up in 1983 and remedial activities are currently underway at the Site.

rate in plants. Chronic (long term) effects on aquatic life may include shortened lifespan, reproductive problems, lower fertility, and changes in appearance or behavior. Many site-related hazardous substances are categorized as persistent bioaccumulative toxics. They degrade very slowly in the environment, accumulate in living things, and bioaccumulate as they move up the food chain. General information on potential effects of the hazardous substances detected can be found in the Agency for Toxic Substances and Disease Registry (ATSDR) fact sheets (www.atsdr.cdc.gov) and the U.S. EPA ECOTOX database (www.epa.gov/ecotox).

In addition to the injuries to surface water, and biological resources noted above, injuries to ground water have been identified and evaluated. Based on Trustee estimates, over 400 million gallons of ground water may be injured over time as the result of releases of hazardous substances from the former Nease Chemical facility.

2.3 Authority and Legal Requirements

This Draft RP/EA has been prepared jointly by Ohio EPA and the USFWS. Each of these Agencies is a designated natural resources Trustee under Section 107(f) of CERCLA, 42 U.S.C. § 9607(f), Section 311 of the CWA, 33 U.S.C. § 1321, and other applicable law, including Subpart G of the National Contingency Plan (NCP), 40 C.F.R. §§ 300.600-300.615. As a Trustee, each Agency is authorized to act on behalf of the public to assess natural resource injuries and recover damages for injuries to natural resources and losses of natural resource services attributed to releases of hazardous substances. The Federal Authorized Official is the DOI official delegated the authority to act on behalf of the Secretary of the U.S. DOI to conduct a natural resource damage assessment and restoration. The Authorized Official is the Region 3 Regional Director for the U.S. FWS, and represents the interests of the Department, including all affected Bureaus**.** In accordance with 42 U.S.C. § 9607(f)(2)(B), the Director of Ohio EPA has been designated the natural resource Trustee by the Governor of Ohio, pursuant to letter dated June 30, 2011.

The purpose of the RP/EA is to consider alternative actions to restore, rehabilitate, replace, and/or acquire the equivalent of natural resources injured and natural resource services lost as a result of releases of hazardous substances from the former Nease Chemical facility, pursuant to applicable State and Federal laws and regulations. This document will also serve as the Restoration Plan (RP) for implementing the selected Alternative as required under the NRDA regulations.

Any restoration of natural resources under the CERCLA and CWA must comply with the National Environmental Policy Act (NEPA), as amended (42 U.S. C. §4321, et seq.), the Council on Environmental Quality regulations (40 CFR parts 1500-1508) and DOI's

implementing NEPA regulations at 40 C.F.R. Part 6. In compliance with NEPA and its regulations, this Draft Environmental Assessment (EA) summarizes the current environmental setting, describes the purpose and need for action, identifies alternative actions, assesses their applicability and environmental consequences, and summarizes opportunities for public participation in the decision making process. For the actions proposed in this Draft EA, the appropriate context for considering potential significance of the actions is local, as opposed to national or worldwide.

The Alternative selected in the RP must be consistent with statutory mandates and regulatory procedures that specify that recovered damages are used to undertake feasible, safe, and cost-effective projects that address injured natural resources, consider actual and anticipated conditions, have a reasonable likelihood of success, and are consistent with applicable laws and policies.

2.4 Overview of Damage Determination

DOI has adopted regulations under CERCLA and the CWA establishing procedures for assessing natural resource damages. The NRDA regulations are codified at 43 C.F.R. Part 11. As defined in the NRDA regulations, injury is an adverse biological, chemical, or physical effect on natural resources, such as death, decreased population or lost services (*e.g.,* fishing or hunting opportunities, ecosystem functions). Damages are the estimated value of the injured resources from the time injury began until the resources and services they provide are restored. The objective of the NRDA process is to compensate the public through environmental restoration for injuries to natural resources that have been caused by releases of hazardous substances into the environment. Under Section 107(f)(1) of CERCLA, damage settlements can only be used to restore, rehabilitate, replace, and/or acquire the equivalent of trust resources injured, destroyed, or lost as a result of the release of hazardous substances**.**

Accordingly, this Draft RP/EA has been developed to evaluate and, ultimately, select restoration projects designed to compensate the public for damages that occurred to natural resources in the Assessment Area. This Draft RP/EA is being developed prior to final resolution of damage claims. The RP/EA is not intended to completely quantify the extent of restoration needed. The scale of restoration activity that will be undertaken as a result of this document will depend upon the funds, property, and services made available through resolution of natural resource damage claims. Implementation of selected restoration projects will occur over a period of time, dependent upon the project type.

The NRDA regulations provide that restoration plans should consider ten factors when evaluating and selecting projects to restore or replace injured natural resources. The following factors will be used to select an Alternative and to compare projects within an Alternative. (See 43 C.F.R. § 11.82.)

1. Technical feasibility.
2. The relationship of the expected costs of the Alternative to the expected benefits.
3. Cost-effectiveness.
4. The results of actual or planned response actions.
5. The potential for additional injury resulting from the proposed actions.
6. The natural recovery period.
7. Ability of the resources to recover with or without alternative actions.
8. Potential effects of the action on human health and safety.
9. Consistency with relevant Federal, State, and Tribal policies.
10. Compliance with applicable Federal, State, and Tribal laws.

As discussed, the selected Alternative must achieve the restoration goals to restore, rehabilitate, replace and/or acquire the equivalent of those natural resources injured by the discharge or release of hazardous substances from the former Nease Chemical facility**.**

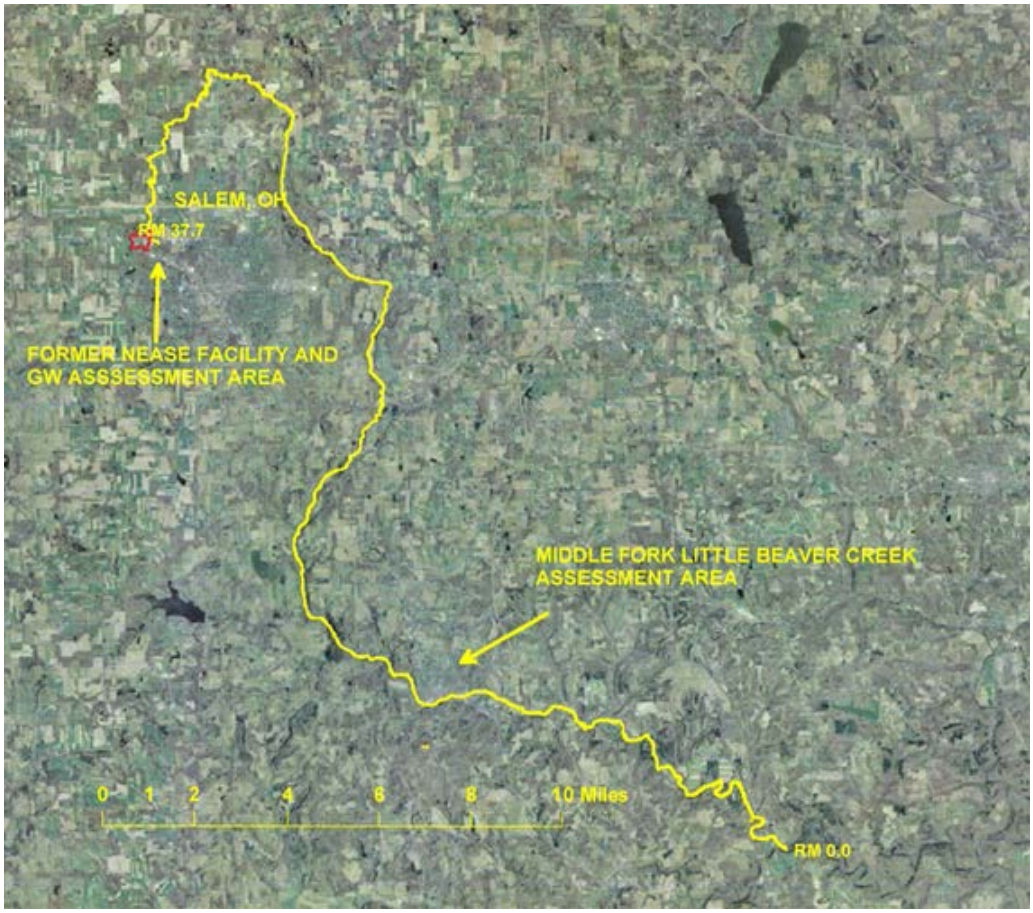
Based on the recommendations of the Trustees and input from the public, the Authorized Officials will select one of the Alternatives and will determine, based on the facts and recommendations contained herein, and public comment, whether this EA is adequate to support a Finding of No Significant Impact, or whether an Environmental Impact Statement is required.

SECTION 3

ASSESSMENT AREA AND SUMMARY OF INJURED RESOURCES

The Assessment Area means the former Nease Property, portions of the Former Crane-Deming Property, the underlying ground water aquifers, Feeder Creek, portions of MFLBC, and supporting ecosystems, where natural resources have been affected directly or indirectly by the release of hazardous substances from the former Nease Chemical facility. The Assessment Area serves as the geographic basis for the injury assessment, and is generally depicted on Figure 1. Within the Assessment Area, the Trustees have focused injury and damage determinations on ground water, surface water (aquatic habitat) and biological resources to scale restoration projects.

Figure 1: Nease Assessment Area



Ground and surface water resources in the Assessment Area are important for providing potable water and have other intrinsic values worth protecting and restoring. In addition, ground water resources often have connections to, and provide services and support to, wetland and aquatic habitats and biological resources. The terrestrial, wetland, and aquatic habitats of the MFLBC watershed support a wide diversity of birds, fish, and mammals, including rare, threatened, and endangered species. The health of the ecosystem and the quality of its habitats are vital to the invertebrates, plants, fish, and wildlife of the area. Public uses of these resources also depend on the health and quality of the watershed.

For a detailed discussion of the physical characteristics and biological environment of the Assessment Area, including the habitat and wildlife as well as the listed, proposed and candidate species in the area, see Appendix A.

SECTION 4

RESTORATION ALTERNATIVES

4.1 Alternative A: No Action

The No Action Alternative, required by NEPA, consists of expected conditions under current programs pursued outside the NRDA process. It is the baseline against which other actions can be compared. If this Alternative were implemented, the Trustees would not initiate specific actions to restore injured natural resources or compensate the public for ongoing natural resource injuries caused by releases of hazardous substances into the environment. Existing environmental degradation not directly related to hazardous substance releases would continue to occur (land development, shoreline hardening, etc.), and perhaps worsen under Alternative A. The State and Federal agencies would continue to manage, conserve, and protect the natural resources as outlined in current programs and regulations and within current budget constraints. The public would not be compensated for injuries to natural resources. The No Action Alternative provides no significant positive benefits to the local community.

4.2 Alternative B: Natural Resource Based Restoration in the MFLBC and/or Little Beaver Creek Watersheds (Preferred Alternative)

Alternative B involves projects that would restore and replace injured and lost natural resources, while concurrently providing enhanced ecosystem services to compensate for injuries caused by releases of hazardous substances. Projects within this Alternative could be implemented anywhere in the State of Ohio with a preference for projects in the watersheds of MFLBC and/or Little Beaver Creek. Alternative B projects are focused on maintaining the important linkages between the physical, chemical, and biological properties of the overall ecosystem and the services it provides. These category of projects and/or their restoration goals include the following: (1) enhancement and preservation of riparian, wetland, and upland habitat providing benefits to avian species and fisheries; (2) enhancement, preservation and reestablishment of wetlands; (3) improvement of aquatic habitat; and, (4) providing clean recharge to ground water aquifers and potable use surface water. Each of these categories of projects is expected to improve and enhance the ecosystem to benefit injured natural resources. Concomitantly, these projects would benefit the public by enhancing outdoor recreational opportunities. These goals would be accomplished through the acquisition, preservation, and restoration of contiguous tracts of valuable habitat where feasible, some of which could be made available to the public for recreational use. This holistic approach supports the goal of restoring, replacing and rehabilitating injured resources, and enhancing outdoor recreational activities.

The Trustees anticipate that priorities for all restoration project categories under Alternative B will be influenced primarily by the following key factors:

1) Relationship to injuries (restoration opportunities that address services and values similar to those lost due to the release of hazardous substances are preferred).
2) Quality of restoration opportunities (projects with substantial ecological opportunities are preferred).
3) Ecological function/hydraulic connectivity (areas in the MFLBC and/or Little Beaver Creek watersheds are preferred).
4) Cost and cost-effectiveness (projects with lower cost per restored or replaced services or values are preferred).

Prior to the selection and implementation of any site-specific actions, the Trustees will review the specific projects to determine if they comply with all applicable requirements: NEPA, Historic Preservation Act, Endangered Species Act, etc.

4.2.1 Wetland, Flood Plain, Riparian and Associated Upland Habitat Preservation, Reestablishment or Enhancement Projects

Restoration projects under this Alternative B would concentrate on preserving and enhancing areas which provide ecological services similar to those lost in the MFLBC. Protection and restoration of wetlands and associated riparian habitat and ecologically associated uplands would foster and promote increased spawning and nursery habitats for fish, as well as nesting and foraging opportunities for a wide variety of birds and other wildlife. Such projects will enhance clean recharge water to local aquifers and reduce erosion and resultant sediment and pesticide loading to MFLBC and/or Little Beaver Creek. Restoration projects described in Alternative B would provide ecological functions similar to, but not necessarily the same as, those injured by hazardous substances.

Wetland, flood plain, riparian, and ecologically associated upland protection and enhancement would help replace habitats that have been impaired or destroyed in the MFLBC watershed. The Trustee's wetland, flood plain, riparian, and upland habitat reestablishment and enhancement strategy would include active restoration projects, such as improving existing flood plain, establishing and/or preserving wetlands, establishing interconnections between surface water and wetlands**,** and removing invasive plant species. Techniques such as acquiring environmental easements and/or covenants, fencing cattle out of riparian corridors, restoring natural stream geomorphology, and reestablishing wetland and flood plain plants and other native vegetation would be utilized, as appropriate. The Trustees intend to target restoration of wetland, riparian, and upland habitats located within flood plains, and adjacent to existing valuable natural areas. Wetland, flood plain, riparian, and ecologically associated upland

reestablishment and enhancement projects that will improve water quality in MFLBC and/or Little Beaver Creek (including reducing loadings of suspended sediments, nutrients, and pesticides) and provide habitat for biological resources are preferred.

4.2.1.1 ***Acquisition/Protection of Natural Areas***

Alternative B recognizes the significance of preserving the riparian, wetland, flood plain and upland habitat of the MFLBC and/or Little Beaver Creek watershed. To achieve this goal, efforts will be focused on identifying, acquiring and preserving parcels of land with the following attributes: (1) areas with agricultural, commercial and/or residential development pressure; (2) contiguous parcels; (3) areas of exceptional stream, riparian and floodplain habitat; and (4) high quality wetlands. These areas or "natural areas" are those parcels of land that significantly contribute to the ecological qualities of the MFLBC and/or Little Beaver Creek watersheds. Once those natural areas are preserved and protected, lost and injured resources and public recreational activities are likely to improve.

Specific areas for preservation will be selected based upon the following criteria: (1) the ecological value of the habitat and ground water recharge potential; (2) the ability to improve the habitat; (3) the ability to preserve the habitat; (4) the geographical and ecological diversity of the parcel; (5) local and regional development plans; (6) the ability to find willing landowners; and, (7) citizens' concerns and comments. Preservation of properties would be achieved through acquisition from willing land owners of Environmental Covenants, Conservation Easements and/or General Warranty Deeds. Those properties that could be preserved in perpetuity will be considered a higher priority than those with a fixed duration. Land acquired will be conveyed to individual State, Federal or local governmental agencies, land trusts, or non-governmental conservation organizations following specific procedures and standards for each entity.

While the primary purpose of the preservation and enhancement is to protect and preserve fish and wildlife habitats, and ground water recharge, portions of the acquired properties may be available to the public for passive and/or active recreational opportunities (*e.g.*, fishing, wildlife viewing, hiking or hunting).

4.2.1.2 ***Reestablishment/ Enhancement of Natural Areas***

Restoration projects under Alternative B may include the replanting and reestablishment of native species on properties acquired through Environmental Covenants, Conservation Easements and/or General Warranty Deeds. Reestablishment efforts will focus on restoring natural areas that are currently in a somewhat degraded natural condition. Native species will be reestablished once non-native species have been removed, eradicated and/or controlled.

The removal of non-native species and planting of native species will enhance ecosystem function and, as a result, enhance the ecosystem services provided to the natural resources and the public.

4.2.1.3 ***Dam Removal***

Lisbon Dam and similar low head dams throughout the State of Ohio are significant obstacles to movement and colonization by both fish and invertebrate species. As a result, they limit the ability of rivers and streams, including MFLBC, to reach full attainment of water quality standards. Removal of such obstacles results in significant improvements in water quality and ecological habitat both above and below the dams. In addition, fish and invertebrate species gain access to new riparian and wetland habitats, which results in greater numbers of fish and invertebrate species and individuals. The Trustees therefore will seek to remove the Lisbon, or similar low head dams elsewhere in MFLBC and/or Little Beaver Creek watershed. Local communities will be consulted prior to dam removals.

4.2.2 *Protection of Local Potable (Drinking) Water Resources*

Alternative B recognizes the importance of protecting surface and ground water resources in the MFLBC and/or Little Beaver Creek area to help restore natural resources that have been injured by releases from the former Nease facility. To achieve this goal, Alternative B will focus on protecting potable (drinking) water source area(s) for local communities through appropriate mechanisms (*e.g.*, conservation easements and/or environmental covenants). Initial surface water and ground water resource protection efforts will be targeted to source water assessment and protection (SWAP) areas that have already been identified in the MFLBC and/or Little Beaver Creek areas, to help protect sources of potable water from contamination. Other areas such as local well fields and surface water reservoirs (outside identified SWAP areas) will be considered for protection if such projects are appropriate. See: http://www.epa.state.oh.us/ddagw/swap.aspx for additional information on SWAPs.

4.3 Alternative C: Natural Resource Based Restoration Outside the MFLBC and/or the Little Beaver Creek Watershed

Alternative C involves projects of the type described in Alternative B, above. However, those projects would be implemented in the State of Ohio outside the MFLBC and/or Little Beaver Creek watersheds. Projects outside of the MFLBC and/or Little Beaver Creek watersheds would provide services similar to those in Alternative B, but may benefit species other than those injured by hazardous substance releases in the Assessment Area.

4.4 Alternatives B and C: Criteria and Priorities for Restoration Project Categories

4.4.1 *Technical Feasibility*

Projects that use reliable, proven methods are preferred to those that rely on experimental or untested methods. Other factors that can affect project success, such as validity of assumptions inherent to the project approach, will also be considered by the Trustees.

Lands with known or suspected hazardous substances or hazardous waste will not be considered by the Trustees. Additionally, lands with easements, rights of entry, interests, or other encumbrances that may conflict with the restoration goals described herein will not be typically considered by the Trustees.

4.4.2 *Benefit Scope*

Restoration projects that provide a broad scope of measurable ecological and ground water benefits to a wide range of geographic areas and numerous fish or wildlife populations are favored over those that are focused on a limited set of benefits to a limited area or population. Restoration projects benefiting fish and wildlife species and populations of the type known, or believed to have been injured in the Assessment Area will be favored over those benefitting other species or populations. Restoration projects with a high ratio of expected ecological and ground water benefits to expected cost are preferred. Projects that provide natural resource services through protection and/or enhancement of the natural resources providing those services are preferred over projects designed solely to provide services. Projects that benefit more than one injured natural resource are expected to be given priority. Wherever possible, natural habitat functions which are self-sustaining and essential to maintain the habitat will be restored, enhanced and/or protected. If projects provide equal benefits, at equal costs, those closest to the injuries with minimal operation and maintenance activities will be preferred.

4.4.3 *Quantifiable Benefits*

Projects expected to provide quantifiable benefits and likely to achieve success will have a higher priority than projects that do not. Restoration projects should include an evaluation of success and a monitoring component if required to determine the effectiveness of restoration actions in providing the public with similar services and values to those lost because of releases of hazardous substances into the environment. Success and completion of the projects will be determined by completion of tasks outlined in accordance with applicable timeframes set forth in an enforceable document.

4.4.4 *Implementation Injuries*

Preference will be given to projects that avoid or minimize additional natural resource injury or environmental degradation. The Trustees will require that requisite permits are obtained and comply with applicable regulations. All projects selected for implementation will be expected to comply with applicable and relevant laws, policies and regulations. To assure that Federally- and State-listed threatened or endangered species will not be adversely affected, or proposed species are not jeopardized, the Trustees will require that the guidelines outlined in Appendix B are followed during implementation of NRD restoration activities.

4.4.5 *Other Project Support*

Preference is expected to be given to projects or aspects of Trustee approved projects that are not already being implemented or have insufficient funding under other programs. Although the Trustees may use restoration planning efforts completed by other programs, preference is given to projects that would not otherwise be implemented without NRD restoration funds.

4.4.6 *Voluntary Land Acquisition/Easements*

Preservation of habitats through acquisition of land, Environmental Covenants, or Conservation Easements will only be from willing sellers or participants. Landowners are, and will be, under no pressure or obligation to sell, or put a Conservation Easement or Environmental Covenant on their land. Neighbors adjacent to land purchased for preservation under this RP will retain all of their current rights to their land. The acquiring entities are required to pay fair market value for land purchased. Fair market value would be determined through established appraisal procedures.

4.4.7 *Tribal Cultural Resources*

The preservation or restoration of specific areas or resources that have appreciable cultural value to Indian tribes are important to the Trustees. A search of the Native American Consultant Database maintained by the National Park Service identified no Indian tribes with relevant interest in the restoration area.

4.5 Preferred Alternative

The Trustees have recommended Alternative B as the Preferred Alternative. Natural resource based restoration outside the MFLBC and/or Little Beaver Creek watersheds (Alternative C) may provide services similar to those within the MFLBC and/or Little Beaver Creek watersheds. However, such projects would not necessarily benefit the same ground water resources or species assemblages that were injured in the Assessment Area. The final decision on the selected Alternative will be made by the State and Federal Authorized Officials based on recommendations from the Trustees' staff and input from the public.

4.6 Summary of Alternative Actions

Table 1: Comparison of Alternatives A, B & C

Actions	**Alternative A** No Action	**Alternative B** Natural Resource Based Restoration in the MFLBC/Little Beaver Creek Watershed (Preferred Action)	**Alternative C** Natural Resource Based Restoration outside the MFLBC/Little Beaver Creek Watershed
Restore, rehabilitate, replace and/or acquire the equivalent of natural resources injured from the release of hazardous substances into the environment and services those resources provide	No	Yes	Partial. Species assemblages and ground water resources would not necessarily be the same as those injured.
Rehabilitate wetlands, flood plains, riparian and associated upland habitat	No	Yes	Partial. Habitat rehabilitated may be different from that affected by hazardous substance release.
Improve aquatic habitat and riparian habitat	No	Yes	Partial. Habitat improved may be different from that affected by hazardous substance release.
Provide for enhancement of abundance and diversity of self-sustaining fish populations	No	Yes	Partial. Species assemblages could be different from those injured.
Preservation of wetlands, flood plain, riparian and associated upland habitat	No	Yes	Yes
Improve outdoor recreational opportunities/enhance public awareness	No	Yes	Yes
Protection of potable (surface and ground) water resources	No	Yes.	Partial. Water resources protected may be different from those injured.

SECTION 5

ENVIRONMENTAL CONSEQUENCES OF PROPOSED RESTORATION ACTIVITIES

5.1 Alternative A: No Action

5.1.1 *Habitat Benefits*

Under Alternative A, no habitat would be restored, enhanced, or preserved beyond what the Trustees are currently doing within mandates, policies and restricted budgets. Loss of habitat due to development and other sources of environmental degradation not related to hazardous substance releases are expected to continue to occur. The public would not be compensated for injuries to natural resources from the releases of hazardous substances into the environment.

5.1.2 *Biological Benefits*

Fish and wildlife injured by releases of hazardous substances into the environment would not be restored, rehabilitated, replaced and/or the equivalent acquired. Populations of fish and wildlife species that rely on wetlands for spawning and nurseries would not increase sufficiently to compensate for past losses**.**

5.1.3 *Listed, Proposed, and Candidate Species*

Negative adverse effects to listed species would not be reduced under this Alternative.

5.1.4 *Potable (Drinking) Water Resources*

As no action would be taken, potable (ground and surface) water resources would not be afforded additional protection beyond what is already afforded by other existing programs.

5.1.5 *Cultural Resources*

As no action would be taken, cultural resources would not be adversely affected beyond what would occur under other existing programs and development.

5.1.6 *Environmental Justice*

Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* (59 Federal Register 7629 (1994)), directs Federal agencies to incorporate environmental justice in their decision making process. Federal agencies are directed to identify and address as appropriate, any disproportionately high and

adverse environmental effects of their programs, policies and activities on minority or low-income populations.

Under the No Action Alternative, wildlife viewing and environmental education opportunities would not improve through enhancement projects. While affluent individuals can afford travel and pay for alternatives, low-income individuals are less capable of doing so.

5.1.7 *Socioeconomic Effects*

This Alternative would not result in any positive direct or indirect effects on the local economy. This Alternative would not result in additional lands that could provide increased recreational opportunities and related economic development in the area.

5.1.8 *Cumulative Effects*

If this Alternative was implemented, the cumulative effects would be adverse to the environment. The exclusive reliance on regulations and policies does not necessarily provide for long term preservation of valuable wetland and upland habitats. The watershed of the MFLBC includes many different habitats, such as flood plain forests, dry upland forests and wetlands (emergent, submergent and forested). Degradation to these and other resources would continue due to historical and on-going development. No fishery resource enhancement projects would be implemented under the No Action Alternative, thus further harming the fishery. The loss and degradation of riparian wetlands could contribute to instability of the fish community. The continued loss of habitat could also adversely affect migratory birds that use the area for resting grounds, and nesting area for those species that remain for the nesting season.

5.2 Alternative B: Natural Resource Based Restoration in the MFLBC and/or Little Beaver Creek Watershed (Preferred Alternative)

5.2.1 *Habitat Benefits*

Preserving, restoring or enhancing riparian, wetland, flood plain, and upland habitats along MFLBC and/or Little Beaver Creek will improve ecological functions that are essential for many fish and wildlife species. In addition, habitat restoration and preservation will improve public use and enjoyment of these resources. Benefits of aquatic and riparian improvements or enhancement would include improved water quality, reduced nutrient, sediment, and pesticide loadings, restored habitat for fish and wildlife species, and increased ecological productivity. Improving the quality of vegetation and habitat for fish and birds would provide similar, though not identical, ecological functions as those injured by hazardous substances.

These and other long-term benefits outweigh any adverse effects associated with specific habitat restoration or enhancement methods.

Under Alternative B, there would be minimal short-term disruptions to habitat due to the manipulation of soil required to complete wetland and aquatic habitat restoration and enhancement projects. Minor amounts of carbon monoxide or other air pollutants associated with heavy machinery may be temporarily associated with the proposed restoration activities during the construction phase. Construction activities would have no long term air quality impacts on the restoration area or surrounding environment. There may be a temporary increase in water turbidity during removal of the dam. It is anticipated that removal of the dam would have no long term negative water quality effects.

5.2.2 *Biological Benefits*

The restoration alternatives would benefit many different species of fish and wildlife found in the area. Preservation, reestablishment and enhancement of wetland, flood plain, riparian, associated upland, and aquatic habitats would benefit such species as waterfowl, rails, terns, songbirds, osprey, mink and beaver. Fishery resource enhancement projects would benefit species such as black redhorse, rock bass, and smallmouth bass leading to the development of a balanced, healthy fish community. Through the habitat quality improvement projects there would be an increase in shallow waters and beds of submergent and emergent vegetation providing habitat for migrating waterfowl and feeding areas for shorebirds, waterbirds, and many species of fish found in the area. There would be minimal negative effects to biological resources from human disturbance in relation to use of preserved areas and natural resource based public use projects.

5.2.3 *Listed, Proposed, and Candidate Species*

Federal and State-listed or endangered species would receive further protection and aid in the recovery of the species if this Alternative was implemented. Wetland, flood plain, riparian, associated upland, and aquatic habitat preservation would most likely benefit the entire range of federal and state listed and endangered species. Protective measures (Appendix B) would be taken during implementation of any projects. Adherence to the restrictions should provide for no adverse effects on the listed species.

5.2.4 *Potable (Drinking) Water Resources*

Potable (drinking) ground water and surface water resources would receive additional protection through appropriate mechanisms (*e.g.*, conservation easements and/or environmental covenants) if this Alternative was implemented. Currently, some local communities in the MFLBC and/or Little Beaver Creek area have identified source water areas

that would benefit from protection. Placing protection on such areas may involve public entities and/or private landowners and transactions would only be completed with willing land owners who would accept fair market value. There would be little or no impact on the market price. There would be minimal effects on the local economy and tax base because the areas identified for protection are currently undeveloped.

5.2.5 *Cultural Resources*

Projects covered under this document such as removing low head dams, stabilizing stream banks, and acquiring wetlands have the potential to affect properties meeting the criteria for the Natural Register of Historic Places and other cultural resources. The Trustees are in the process of determining specific areas for restorations and land acquisition. When these project areas have been determined, and prior to making final decisions about these projects, the Field Supervisor, Columbus Ecological Field Office of the USFWS, will initiate consultation with the Ohio State Historic Preservation Officer and, with the assistance of the USFWS Regional Historic Preservation Officer, will complete the Section 106 (54 U.S.C. §306108) process as described in 36 Code of Federal Regulations Part 800.

5.2.6 *Environmental Justice*

Wetland, flood plain, riparian, and upland preservation would involve transactions with willing landowners. No minority or low-income populations would be displaced or negatively affected in any way. While the primary purpose of the restoration of this land is for fish and wildlife, portions of the acquired properties may be used by the public for natural resource based recreational and educational activities, such as fishing, hunting, and/or wildlife viewing.

5.2.7 *Socioeconomic Effects*

The overall quality of life for the surrounding communities would improve with the restoration of the area. Protection of wetlands, riparian, flood plains, and uplands would provide wildlife viewing, fishing and hunting opportunities, and help create positive economic impacts on the local economy. Aquatic habitat improvements or enhancements would provide more opportunities for public enjoyment of natural resources.

Land acquisition procedures would involve transactions with willing sellers who would be paid fair market value. There would be little or no changes on the market price or on landowners in the area who choose not to sell. There would be minimal effects on the local economy and tax base because the areas identified for preservation are currently undeveloped.

Aesthetic values could temporarily be reduced during the construction phase due to the presence of construction equipment and vehicles, as well as due to the construction process.

There would be a minor increase in noise levels associated with construction in the immediate project area due to vehicle and construction equipment. These effects are anticipated to be minimal, short term, and limited to active periods of construction. There are no long term noise level increases associated with this project.

5.2.8 *Cumulative Benefits*

Cumulative benefits from habitat restoration or enhancement implemented under Alternative B would positively affect the region as a whole. Despite the existence of laws and regulations designed to minimize wetland and aquatic habitat losses and degradation, threats to wetlands and aquatic habitat from indirect sources, cumulative small scale damage, or surrounding land use changes still exist. Partnering with various State and Federal programs (EPA's Section 319 Clean Water Act State Grants etc.) that already contribute to improving the health of the ecosystems and watersheds could aid in restoring more habitats and increasing fish and wildlife populations.

Migratory birds would benefit from this Alternative because there would be more undisturbed areas for spring and fall migration resting and feeding stopovers, as well as nesting habitat for other bird species. This Alternative would contribute to the stabilization of fish communities by implementing appropriate fishery resource projects, such as restoring fish spawning and nursery habitats.

5.3 Alternative C: Natural Resource Based Restoration outside the MFLBC and/or Little Beaver Creek Watershed

5.3.1 *Habitat Benefits*

Under this Alternative, there would be improvement of habitats for fish and wildlife. However, those improvements would accrue to species and populations different from those injured in the Assessment Area. Habitat losses within the MFLBC and/or Little Beaver Creek watershed would likely continue.

5.3.2 *Biological Benefits*

Under this Alternative, biological productivity would potentially be increased. However, the increases would involve species and populations which may be different from those injured.

5.3.3 *Listed, Proposed, and Candidate Species*

Listed, proposed, or candidate species in MFLBC and/or Little Beaver Creek watershed may or may not benefit.

5.3.4 *Potable (Drinking) Water Resources*

Under this Alternative, additional protection would be afforded for potable (drinking) water resources. However, the additional protection would include ground water and surface water resources outside the injured area.

5.3.5 *Cultural Resources*

Projects covered under this document have the potential to affect properties meeting the criteria for the Natural Register of Historic Places and other cultural resources. The specific project locations have not been determined. When these project areas have been determined, and prior to making final decisions about these projects, the Field Supervisor, Columbus Ecological Field Office of the USFWS, will initiate consultation with the Ohio State Historic Preservation Officer and, with the assistance of the USFWS Regional Historic Preservation Officer, will complete the Section 106 (54 U.S.C. §306108) process as described in 36 Code of Federal Regulations Part 800.

5.3.6 *Environmental Justice*

Land acquisitions and other activities would involve transactions with willing landowners. No minority or low-income populations would be displaced or negatively affected in any way. Provision of fishing piers and other structures could improve access for lower income individuals. Moreover, any such environmental justice impacts could extend outside the injured area.

5.3.7 *Socioeconomic Effects*

The overall quality of life for the surrounding communities would improve with the restoration of the area. Augmentation of human use related services would help create positive economic benefits to the local economy. Moreover, the benefits could accrue to natural resources outside the injured area.

5.3.8 *Cumulative Benefits*

Cumulative benefits under this Alternative would positively affect the areas and possibly the regions where habitat restoration or enhancement would be implemented. However, the benefits would accrue to natural resources outside the injured area.

5.4 Summary of Environmental Consequences for Each Alternative

Table 2: Comparison of Alternative A, B & C Environmental Consequences

Attributes	**Alternative A** No Action	**Alternative B** Natural Resource Based Restoration in the MFLBC/Little Beaver Creek Watershed (Preferred Alternative)	**Alternative C** Natural Resource based Restoration outside the MFLBC/Little Beaver Creek Watershed
Wetlands	Expected continued net loss of habitat	Increase of wetland habitat	Potential increase of wetland habitat
Uplands associated with wetlands	Expected continued net loss of habitat	Increase of upland habitat associated with wetlands	Potential increase of upland habitat associated with wetlands
Aquatic and near-shore habitat	Expected continued degradation and loss of habitat	Increase of aquatic habitat	Potential increase of aquatic habitat
Fish resources	Expected populations would remain unbalanced for a greater length of time	Expected increase diversity of fish community and populations	Expected increase diversity of fish community and populations. Communities and population would be different from those injured
Wildlife resources	Expected continued harm and decrease of numbers	Expected increase in populations	Expected increase in populations. Populations would differ from those injured.
Listed threatened or endangered species	Expected negative impacts would continue	Expected to provide further recovery of species in the area	May or may not assist recovery of species in the Assessment Area
Potable (drinking) water resources	Expected negative impacts would continue	Expected to provide protection of potable (ground and surface) water resources	Expected to provide protection of potable (ground and surface) water resources but may not be in MFLBC/ Little Beaver Creek
Cultural resources	N/A	Adverse impacts are possible	Adverse impacts are possible
Surface water	Expected to remain degraded due to sediment and nutrient loading and historic pollution in sediment	Temporary water turbidity during construction. Expected increase in surface water quality	Temporary water turbidity during construction. Expected increase in surface water quality, but may not be in MFLBC/Little Beaver Creek

Environmental justice issues	No opportunities for increased quality of life	Expected increased quality of life in the MFLBC/Little Beaver Creek area	Possible increased quality of life, but not necessarily in the MFLBC/Little Beaver Creek area
Socioeconomic issues	Expected local economy would remain the same or decrease due to continued injury without restoration	Short term aesthetic and noise affects during construction. Local economy could potentially increase due to restoration	Short term aesthetic and noise affects during construction. Local economy could potentially increase due to restoration
Recreational use Environmental education and resource enjoyment	No enhancement or increase of low impact recreational opportunities or environmental education	Increase opportunities for wildlife/bird viewing, fishing, as well as enhancement of understanding of the ecosystem	Increase opportunities for wildlife/bird viewing, fishing, as well as enhancement of understanding of the ecosystem, but outside of the injured area
Cumulative effects	Potential decrease in populations of migratory birds, continued degraded fishery and continued loss of wetland and associated upland habitat in the area	Expected increased populations of migratory birds and greater diversity in fish community; some ecosystem functions restored or compensated	Expected increased populations of migratory birds and greater diversity in the fish community; ecosystem functions in the area of injury would not be addressed

SECTION 6

CONSULTATION AND COORDINATION WITH THE PUBLIC AND OTHERS

6.1 National Historic Preservation Act Compliance

The USFWS' Project Leader for Columbus Ecological Services will provide the State Historic Preservation Officers with this Final RP/EA as part of the public review and comment process.

6.2 Endangered Species Act Compliance

This draft RP/EA complies with Section 7 of the Endangered Species Act (ESA) of 1973 as amended, 16 U.S.C. § 1531, *et seq.,* and its implementing regulation (50 C.F.R. 402, Subpart A).

6.3 Public Participation

Public review of the Draft RP/EA is an integral component of the assessment and restoration planning process. Through the public review process, the Trustees will be seeking public comment on the actions proposed to restore injured natural resources or replace lost resource services. The Draft RP/EA will be available for review and comment by the public. A public meeting will be held to present the restoration actions proposed to compensate the public for injuries to those natural resources covered herein. Notice of the meeting date and time will be published in the local newspaper.

SECTION 7

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APPENDIX A

INJURED ENVIRONMENTS/RESOURCES

APPENDIX A

INJURED ENVIRONMENTS/RESOURCES

The characteristics of the injured environments and resources identified or suspected in the Assessment Area are detailed below.

1. Biological Environment

1.1 *Habitat/Vegetation*

Mahoning County and the northern half of Columbiana County are in the Glaciated Appalachian (or Allegheny) Plateau. Natural systems including forests, bogs, old fields and water bodies have survived because of the physiography of the plateau. The southern half of Columbiana County lies in the Unglaciated Allegheny (or Appalachian) Plateau. The dominant forest types in Mahoning County are oak-hickory and elm-ash-red maple. Similarly, dominant forest types in Columbiana County are northern hardwoods and oak-hickory.

MFLBC originates upstream of the former Nease facility in Salem in Columbiana County, Ohio. The stream receives run-off from the facility via the Feeder Creek tributary system. From Salem, MFLBC flows north for about 5 miles into Mahoning County, then turns and flows eastward and then southward through Lisbon, Ohio in Columbiana County. MFLBC has a length of 40.6 river miles and an average slope of 11.8 feet per mile[2]. MFLBC eventually joins West Fork and other tributaries to form Little Beaver Creek. Little Beaver Creek flows into the Ohio River near East Liverpool, Ohio. Portions of the LBC basin (approximately 36 river miles) have been designated as a State Wild and Scenic River and a National Scenic River.

Aquatic habitat in MLFBC consists of a series of riffles and pools. Stream width ranges from approximately 4 to 8 meters above Lisbon Dam to 15 to 35 meters below the dam. Creek substrate ranges from bedrock outcrops and cobble-gravel-boulders in some areas, to sand, silt and clay in the forested and emergent wetlands. Wetland and riparian habitat in the MFLBC area include: forested wetlands, scrub/shrub wetlands, emergent wetlands, forested uplands, upland fields and agriculture/pasture, as well as developed habitat. [3]

Hydrogeologically, in the former Nease facility area, the glacial till materials are primarily composed of till, sand and minor lake clays. The primary bedrock units in this area are the Middle Kittaning Sandstone and Vanport Limestone/Putnam Hill Shale Zone. The two bedrock units are separated by the Washingtonville Shale.

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[2] Source: Total Maximum Daily Loads for the Little Beaver Creek Watershed, Ohio EPA, 2005. See: http://www.epa.state.oh.us/portals/35/tmdl/Little%20Beaver_final.pdf\

[3] Source for aquatic and riparian habitat descriptions: Nease Site April 2004 Final Endangerment Assessment

1.2 *Listed, Proposed, and Candidate Species*

The Assessment Area falls within range of the Indiana bat (*Myotis sodalis*), as well as the sheepnose (*Plethobasus cyphyus*) and snuffbox (*Epioblasma triguetra*) mussels, which are Federally-listed endangered species. An endangered species is any species that is in danger of extinction throughout all or a significant portion of its range. The Assessment Area is within the ranges of the northern long-eared bat (*Myotis septentrionalis) (*proposed listing*),*eastern massasauga rattlesnake (*Sistrurus catenatus catenatus*) (candidate species) and the eastern hellbender (*Crytpobranchus alleganiensis)* (species of concern). A proposed species is a species for which listing as endangered under the Endangered Species Act is under development; a candidate species is a species for which the USFWS has sufficient information on their biological status and threats to propose listing them as endangered or threatened under the Endangered Species Act, but for which development of a proposed listing regulation is precluded by other higher priority listing activities.

Since the **Indiana bat** (*Myotis sodalis*) was first listed as endangered in 1967, their population has declined by nearly 60%. Several factors have contributed to the decline of the Indiana bat, including the loss and degradation of suitable hibernacula, human disturbance during hibernation, pesticides, and the loss and degradation of forested habitat, particularly stands of large, mature trees. Fragmentation of forest habitat may also contribute to declines. Most recently white-nose syndrome (WNS), a novel fungal pathogen, has caused serious declines in the Indiana bat population in the northeastern U.S. WNS has also been documented in Ohio and declines of Indiana bats during winter censuses have been noted, but the full extent of the effects from WNS in Ohio are not yet known.

During winter, Indiana bats hibernate in caves and abandoned mines. Summer habitat requirements for the species are not well defined but the following are considered important:

1) Dead or live trees and snags with peeling or exfoliating bark, split tree trunk and/or branches, or cavities, which may be used as maternity roost areas.
2) Live trees (such as shagbark hickory and oaks) which have exfoliating bark.
3) Stream corridors, riparian areas, and upland woodlots which provide forage sites.

It appears that habitat exhibiting the characteristics described above may be present at the proposed project site. Should the proposed site contain trees or associated habitats exhibiting any of the characteristics listed above, we recommend that the habitat and surrounding trees be saved wherever possible. If <u>any</u> trees must be cut, they should only be cut between October 1 and March 31.

The **northern long-eared bat** (*Myotis septentrionalis*), is currently proposed for listing as federally endangered under the Endangered Species Act (ESA) (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*). See, 80 Fed. Reg. 2371 (January 16, 2015). The

USFWS has not made a final listing decision for the northern long-eared bat. No critical habitat has been proposed at this time. Recently WNS has caused serious declines in the northern long-eared bat population in the northeastern U.S. WNS has also been documented in Ohio, but the full extent of the impacts from WNS in Ohio is not yet known.

During winter, northern long-eared bats hibernate in caves and abandoned mines. Summer habitat requirements for the species are not well defined but the following are considered important:

1) Roosting habitat in dead or live trees and snags with cavities, peeling or exfoliating bark, split tree trunk and/or branches, which may be used as maternity roost areas.
2) Foraging habitat in upland and lowland woodlots and tree lined corridors.
3) Occasionally they may roost in structures like barns and sheds.

Pursuant to section 7(a)(4) of the ESA, federal action agencies are required to confer with the USFWS if their proposed action is likely to jeopardize the continued existence of the northern long-eared bat (50 CFR 402.10(a)). Nevertheless, species proposed for listing are not afforded protection under the ESA; however as soon as a listing becomes effective, the prohibition against jeopardizing its continued existence and "take" applies regardless of an action's stage of completion. If the federal agency retains any discretionary involvement or control over on-the-ground actions that may affect the species after listing, section 7 applies.

Since it appears that habitat exhibiting the characteristics described above may be present at the proposed project site, the Trustee Council recommends that trees exhibiting any of the characteristics listed above, as well as any wooded areas or tree lined corridors be saved wherever possible. If tree removal is unavoidable, we recommend that <u>any</u> tree removal occur between October 1 and March 31 to avoid impacts to northern long-eared bats.

The **sheepnose mussel** (*Plethobasus cyphyus*) is primarily known from larger streams. It typically occurs in shallow shoal habitats with moderate to swift currents over coarse sand and gravel. Habitats with sheepnose mussels may also have mud, cobble, and boulders. The sheepnose mussel occurs in swift currents of riffles and shoals over gravel and sand with occasional cobble and boulders.

The **eastern hellbender** (*Cryptobranchus a. alleganiensis*), is a salamander which conducts most of its respiration through its skin. In Ohio, most of its range is limited to the unglaciated areas of the state, where it inhabits perennial streams with large, flat rocks. Sedimentation is a major threat to this species, as sediment modifies stream habitat by increasing turbidity, increasing water temperature, and reducing the space between rocks. The eastern hellbender utilizes areas between rocks for refuge during high stream flows. In addition, these areas provide habitat for aquatic insects which provide food for immature individuals, as well as crayfish, which are an adult food

source. Another threat to the hellbender is impoundment of streams. Dams reduce flow, increase sediment deposition, and create fragmentation of stream habitat by isolating populations of aquatic organisms. Upstream of impoundments, the reduced flow creates areas of reduced dissolved oxygen which could harm hellbender eggs, adults, and prey.

Currently there is no systematic monitoring of the eastern hellbender, making it difficult to determine long-term trends in population and distribution. Recent surveys in Ohio have documented an approximately 80% decline in abundance since the 1980's and have detected very few juveniles, suggesting very limited recruitment. The USFWS is conducting a Candidate Assessment to determine if the eastern hellbender should be listed under the Endangered Species Act.

The **eastern massasauga rattlesnake** (*Sistrurus catenatus catenatus*) has been reduced to isolated populations. Several factors have contributed to the decline of the eastern massasauga including habitat loss and fragmentation, indiscriminate killing, collection, gene pool contamination and incompatible land use practices. Eastern massasaugas use both upland and wetland habitat and these habitats differ by season. During the winter, massasaugas hibernate in low wet areas, primarily in crayfish burrows, but may use other structures. Presence of a water table near the surface is important for a suitable hibernaculum. In the summer, massasaugas use drier, open areas that contain a mix of grasses and forbs such as goldenrods and other prairie plants that may be intermixed with trees or shrubs. Adjoining lowland and upland habitat with variable elevations between are critical for the species to travel back and forth seasonally.

The Federally-listed species discussed above are potentially present in the restoration area boundaries for both Alternative B and C.

In addition to Federally-listed, proposed and candidate species, there are State species of concern in the restoration area. Two State endangered plant species, prairie tick-foil and pale straw hedge have been identified in the area. In addition, there are nine State threatened and 14 State potentially threatened plant species. Three State endangered and three State special interest bird species have also been documented in the MFLBC corridor. A State endangered amphibian, the eastern hellbender, and a State special interest species, the wavy rayed lamp mussel (*Lampsilis fasiola*) have been documented in the MFLBC corridor.

1.3 *Other Fish and Wildlife Species*[4]

The Assessment Area is located on the Atlantic flyway (Figure 2) with numerous avian species using the area seasonally. These include, but are not limited to, the osprey *(Pandion haliaetus)*, wood duck *(Aix sponsa)*, Canada goose *(Branta canadensis)*, common merganser *(Mergus merganser)*, great blue heron *(Ardea herodias)*, mallard duck *(Anas platyrhynchus)*, mourning dove *(Zenaida macroura)*, northern harrier *(Circus cyaneus)*, sharp shinned hawk *(Accipiter striatus)*, cooper's hawk (*Accipiter cooperii*), and kingfisher *(Ceryle alcyon)*. Numerous species of migratory neotropical songbirds inhabit the area seasonally.

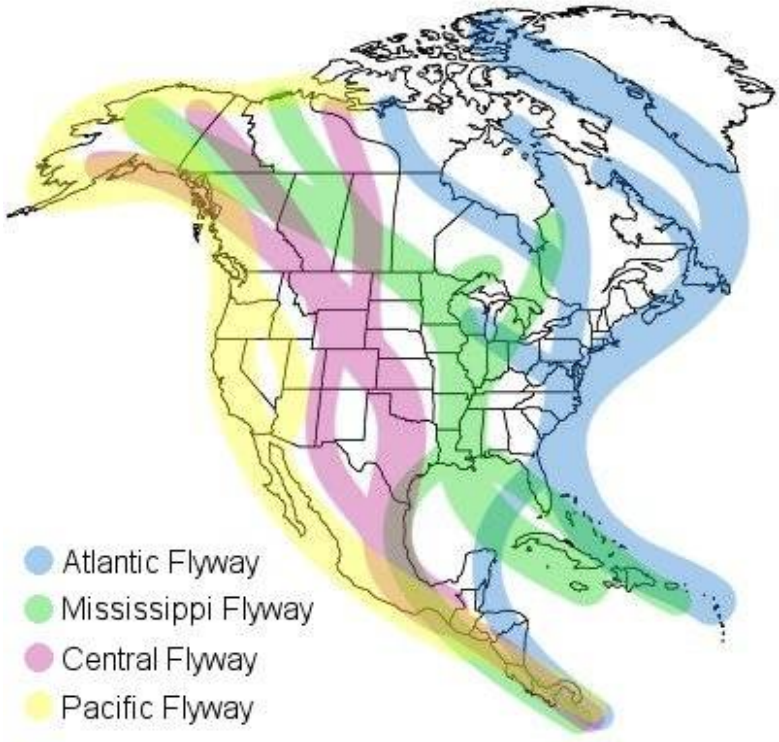
Smaller mammals observed in the area include Virginia opossum *(Didelphis virginiana)*, eastern cottontail rabbit *(Sylvilvagus floridanus)*, eastern chipmunk *(Tamias striatus)*, woodchuck *(Marmota monax)*, gray squirrel *(Sciurus carolensis)*, red fox *(Vulpes fulva)*, striped skunk *(Mephitis mephitis)*, beaver (*Castor Canadensis*), mink (*Mustela vision*), muskrat (*Ondatra zibethicus*) and raccoon *(Procyon lotor)*.

Amphibians observed in the area include the bullfrog (*Rana catesbeiana*), eastern American toad (*Bufo a. americanus*), green frog (*Rana clamitans melonata*), and spring peeper (*Pseudacris crucifer*). Reptiles observed include the common map turtle (*Graptemys geographica*), common snapping turtle (*Chelydra s. serpentina*), eastern garter snake (*Thamnophis s. sirtalis*), midland painted turtle (*Chrysemys picta marginata*), northern black racer (*Coluber c. constrictor*), northern brown snake (*Storeria d. dekayi*), northern water snake (*Nerodia s. sipedon*), and ribbon snake (*Thamnophis sauritis*).

Fish species found in MFLBC include, but are not necessarily limited to, white sucker (*Catostomus commersoni*), rainbow darter (*Etheostoma caeruleum*), Johnny darter (*Etheostoma nigrum*), green side darter *(Etheostoma blennioides)*, log perch (*Percina caprodes*), yellow perch (*Perca flavescens*), smallmouth bass (*Micropterus dolomieui*), white crappie (*Pomoxis annularis*), common carp (*Cyprinus carpio*), brown bullhead (*Ictalurus nebulosus*), freshwater drum (*Aplodinotus grunniens*), northern hogsucker *(Hypentelium nigricans)*, golden redhorse *(Moxostoma erythrurum)*, gizzard shad (*Dorosoma cepedianum*), pumpkinseed (*Lepomis gibbosus*), and stonecat madtom *(Noturus flavus).*

[4] A detailed list of all species associated with the Site is provided in the Nease site Remedial Investigation Report. See: http://www.epa.gov/region5/cleanup/nease/pdfs/remedial-invstig-report1996.pdf

Figure 2: North American Migration Flyways



2. Land Use

Land use in the area is primarily agricultural and residential, with some industrial development. The towns of Salem and Lisbon with populations[5] of 12,161 and 2,783, respectively, are the only significant urban centers in the restoration area. Although there is business and residential development along MFLBC in Salem and in Lisbon, there is still undeveloped land, including hydraulically connected wetland complexes within the MFLBC watershed.

3. Cultural Resources

Archaeological sites and other cultural resources will be identified prior to restoration and appropriate State and federal rules and regulations will be followed.

[5] Source for population(s): most recent statistics from City-Data.com

Appendix B: USFWS Intra-Service Section 7 Biological Evaluation Form

Intra-Service Section 7 Biological Evaluation Form

Region 3

Originating Person: Deborah Millsap Date Submitted: 06/27/2013

Telephone Number: 614-416-8993 ext 14

For assistance with section 7 reviews, go to Region 3's Section 7 Technical Assistance website: http://www.fws.gov/midwest/endangered/section7/s7process/

I. Service Program and Geographic Area or Station Name:

U.S. Fish and Wildlife Service, Ohio Ecological Services Field Office, Columbus, OH

II. Location: Location of the project including County, State and TSR (township, section & range):

Nease Chemical NRDA site, Columbiana and Mahoning Counties, Little Beaver Creek Watershed, Ohio

III. Species/Critical Habitat: List federally-listed, proposed, and candidate species or designated or proposed critical habitat that may occur within the action area:

- Indiana bat (*Myotis sodalis*) E
- Northern long-eared bat (*Myotis septentrionalis*) PE
- Sheepnose mussel (*Plethobasus cyphyus*) E
- Snuffbox mussel (*Epioblasma triguetra*) E
- Eastern massasauga rattlesnake (*Sistrums catenatus catenatus*) C
- Eastern hellbender (*Crytpobranchus alleganiensis*) SC
- Bald eagle (*Haliaeetus leucocephalus*) SC

These species occur within Columbiana and Mahoning Counties but with the exception of the eastern Hellbender, have not been documented within the watershed. Limited forested habitat is present within the watershed and may provide habitat for the Indiana bat and the northern long-eared bat. Therefore this project will have no effect on these species other than the Indiana bat, northern long-eared bat, and the eastern hellbender.

IV. Project Description: Describe the proposed project or action, including all conservation elements. If referencing other documents, prepare an executive summary. Include map and photos of site, if possible. (Attach additional pages as needed):

This is a settlement of claims brought by U.S. FWS and Ohio EPA for injuries to natural resources in and around the Nease Chemical facility resulting from

unpermitted releases of hazardous substances. The project will consist of acquisition, restoration, and protection of riparian and wetland habitat in the Little Beaver Creek watershed, including the removal of a lowhead dam located on the Middle Fork Little Beaver Creek. A limited number of trees may need to be removal to conduct dam removal. Impacts to potential roost tress will be avoided. Properties will be acquired from willing sellers and transferred to local public entities. Restoration will include controlling exotic species, planting native species, and restoring hydraulic connections of historically connected streams and wetlands with the Little Beaver Creek. All acquired properties will be protected by Environmental Covenants. Specific project plans are not available at this time.

V. Determination of Effects:

A. Description of Effects: Describe how the action(s) will affect the species and critical habitats listed in item III, including how Part IV conservation elements benefit or avoid adverse effects. Your rationale for the Section 7 determinations made below (VB.) should be fully described here.

Wetland, riparian, and aquatic habitat preservation would most likely benefit the eastern hellbender which is found within the Middle Beaver Creek watershed.

Projects implemented through the Restoration Plan and Environmental Assessment are not likely to adversely affect federally listed species and critical habitat and are not likely to jeopardize candidate species because:

1. No listed species have been documented to occur within the watershed,
2. Potential roost trees will be avoided,
3. For the eastern hellbender, a species of concern which occurs within the watershed there will be coordination with the U.S. Fish and Wildlife Service prior to implementing any on-the-ground work,
4. An extensive survey for the eastern hellbender was conducted by the U.S. Fish and Wildlife Service and no individuals were found.
5. Avoidance measures will be implemented to eliminate any potential adverse effects,
6. If the restoration plan is changed or avoidance measures cannot be adhered to for a particular project, the U.S. Fish and Wildlife Service will be coordinated with prior to conducting further work.

For assistance with making appropriate Section 7 determinations, go to Region 3's Section 7 Technical Assistance website: http://www.fws.gov/midwest/endangered/section7/s7process/ Determination

No Effect: This determination is appropriate when the proposed project will not directly or indirectly affect (neither negatively nor beneficially) individuals of listed/proposed/candidate species or designated/proposed critical habitat of such species. No concurrence from ESFO required. X

- Sheepnose mussel (*Plethobasus cyphyus*) E
- Snuffbox mussel (*Epioblasma triguetra*) E
- Eastern Massasauga rattlesnake (*Sistrums catenatus catenatus*) C
- Bald eagle (*Haliaeetus leucocephalus*) SC

May Affect but Not Likely to Adversely Affect: This determination is appropriate when the proposed project is likely to cause insignificant, discountable, or wholly beneficial effects to individuals and designated critical habitat. Concurrence from ESFO required. X

- Indiana Bat (*Myotis sodalis*) E
- Northern long-eared bat (*Myotis septentrionalis*) PE
- Eastern hellbender (*Crytpobranchus alleganiensis*) SC

May Affect and Likely to Adversely Affect: This determination is appropriate when the proposed project is likely to adversely impact individuals of listed species or designated critical habitat of such species. Concurrence from ESFO required. _____

Not Likely to Jeopardize candidate or proposed species/critical habitat: This determination is appropriate when the proposed project is not expected to jeopardize the continued existence of a species proposed for listing or a candidate species, or adversely modify an area proposed for designation as critical habitat. Concurrence from ESFO required. _____

Likely to Jeopardize candidate or proposed species/critical habitat: This determination is appropriate when the proposed project is reasonably expected to jeopardize the continued existence of a species proposed for listing or a candidate species, or adversely modify an area proposed for designation as critical habitat. Concurrence from ESFO required. _____

Reviewing Ecological Services Office Evaluation (check all that apply):

A. **Concurrence** X **Nonconcurrence**
Explanation for nonconcurrence:

B. Formal consultation required _____ List species or critical habitat unit

C. Conference required _____ List species or critical habitat

Name of Reviewing ES Office Columbus Ohio Field Office
Columbus Ohio Field Office

Signature Jennifer L Finfera Date 6/27/2013

Signature Mary Knapp [Supervisor at originating station] 6-27-13

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