

**FINAL**  
**Natural Resource Restoration Plan**  
**for the**  
**Eastern Missouri Dioxin Sites**  
**St. Louis County, Missouri**

Prepared by: U.S. Department of the Interior, Fish and Wildlife  
Service

Date issued: July 29, 2008

Lead Trustees for RP: U.S. Fish and Wildlife Service  
Columbia Ecological Services Field Office  
101 Park DeVille Drive, Suite A  
Columbia, MO 65203  
573-234-2132

Co-Trustees: Missouri Department of Natural Resources  
1101 Riverside Drive  
Jefferson City, MO 65101

## **1.0 Introduction to the Restoration Plan**

This **Final** Restoration Plan for the Eastern Missouri Dioxin Superfund sites has been prepared by the U.S. Fish and Wildlife Service, as the designated Federal Trustee pursuant to the Consent Decree and Final Order Between the United States; State of Missouri; Syntex Corporation; Syntex Inc.; Syntex Laboratories, Inc.; Syntex Agribusiness, Inc.; Independent Petrochemical Corporation ?? (IPC); and Northeastern Pharmaceutical and Chemical Company in U.S. vs. Russel Martin Bliss, et al., U.S. vs. Northeastern Pharmaceutical and Chemical Company, et al., State of Missouri vs. Independent Petrochemical Corporation, et al., State of Missouri vs. Russel Martin Bliss, et al., and State of Missouri vs. Syntex (USA), Inc., et al.

### **1.1 Trustee Responsibilities Under CERCLA and NEPA**

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, commonly known as “Superfund”, provides that natural resources injured, destroyed or lost by release(s) of hazardous substances be restored, replaced, rehabilitated or the equivalent of the injured resources acquired to fully compensate the public. Restoration is accomplished using damage settlements recovered from parties responsible for the hazardous releases or discharges of oil. In most instances, Superfund remedial actions do not restore natural resources to their baseline condition (i.e., the condition or conditions that would have existed at the assessment area had the discharge of oil or release of the hazardous substance under investigation not occurred.). Designated Federal and State Trustees are responsible for natural resources that were destroyed or injured by the release of hazardous substances on behalf of the public. In 1987 the U.S. Department of the Interior promulgated regulations governing assessment of natural resources injuries that result from release(s) of a CERCLA defined hazardous substances. The regulations are found in the Code of Federal Regulations (CFR)-43: Part 11, as amended, in the Federal Register, 59 FR 142281 (March 25, 1994).

The Secretary of the Department of the Interior (DOI) is designated to act on behalf of the public as trustee for natural resources managed or controlled by the DOI. Natural resources under the Secretary’s trusteeship include, but are not limited to, migratory birds and endangered species and their supporting ecosystems. The U.S. Fish and Wildlife Service (USFWS) is the designated DOI representative for management of these species. State natural resource trustees have been designated to act on behalf of the public for natural resources, including their supporting ecosystems, within the boundary of a state, belonging to, managed by, controlled by, or appertaining to such state. The Governor of the State of Missouri has designated the Director of the Department of Natural Resources as the trustee for natural resources within Missouri. Under the requirements of CERCLA, natural resource trustees are mandated to pursue damages for injuries to trust resources that have been injured, destroyed, or lost as a result of release(s) of hazardous substances from Superfund site(s). Any natural resource damages received, either

through negotiated settlements or assessment shall be used to restore, replace, or acquire the equivalent of those natural resources that have been injured.

Under damage assessment, injury is a measurable adverse change, either long – or short-term, in the chemical or physical quality, or the viability of natural resources, such as death, decreased population, or lost services (hunting opportunities, ecosystem functions). Damages are the estimated compensation sought for the injured natural resources, determined either through damage assessment or negotiation.

In October 1991, the United States Fish and Wildlife Service (USFWS), on behalf of the United States Department of the Interior (DOI) and the Missouri Department of Natural Resources, collectively referred to as the “Trustees”, settled a natural resource damages claim with the Potentially Responsible Parties (PRPs) for the Eastern Missouri Dioxin (EMD) Superfund Sites (the Sites) located across eastern Missouri in Callaway, Franklin, Jefferson, Lincoln, Phelps, and St. Louis Counties, and the City of St. Louis.

The Trustees sought this settlement as a compensation for injuries to natural resources due to release of environmental contaminants from the Sites. The Trustees are required to use settlement funds to compensate for those injuries by restoring natural resources, supporting habitat, and/or services provided by the injured resources. CERCLA requires that before settlement recoveries can be used for such activities, a Restoration Plan be prepared, including adequate public notice and an opportunity for hearing and consideration of all public comments.

## **1.2 Summary of Settlement or Judgment**

The DOI was awarded a \$200,000 damage settlement to compensate for injuries to federally protected trust natural resources caused by the release of 2, 3, 7, 8-tetrachlorodibenzo-p-dioxin (TCDD or dioxin) at the 27 sites (Appendix A) in eastern Missouri. This restoration effort relates to the settlement received from the Northeastern Pharmaceutical and Chemical Company (NEPACCO), Independent Petrochemical Corporation (IPC), and Syntex, defendants for natural resource damages at these sites.

## **1.3 Summary of Site/Release/Injuries/Public Losses**

NEPACCO leased plant space from Hoffman-Taff (now Syntex Agribusiness, Inc.) in Verona, Missouri in 1969. Two years thereafter, NEPACCO produced 2, 4, 5-trichlorophenol (TCP) to make hexachlorophene, an anti-bacterial agent. Dioxin is removed from TCP in the filtration and distillation processes, creating what is called “still bottoms”. Production ceased in 1972 when the Food and Drug Administration banned the commercial sale of hexachlorophene.

In 1970, NEPACCO shipped part of the still bottoms to Baton Rouge, Louisiana for incineration. NEPACCO also contacted the IPC, of St. Louis, Missouri for chemical recycling references for possible deposition of the remaining wastes. The Bliss Waste

Oil Company, Ellisville, Missouri, owned by Russell Bliss, was subsequently subcontracted with by IPC to haul wastes for NEPACCO.

Mr. Bliss and employees began removing the still bottoms from the Syntex property in 1971. Approximately 18,500 gallons of material was hauled by the Bliss company. Dioxin concentrations ranged from 350,000 ppb (parts per billion) to 2,000,000 ppb. The toxicant was mixed with waste oil in storage tanks in Frontenac, Missouri, and applied as a dust suppressant on horse arenas, parking lots, truck lots, and city and county roads in the St. Louis area.

The dioxin contamination was discovered in August, 1971, when a child, who had been playing in a horse arena, became ill and was hospitalized. Numerous horses and other domestic and wild animals using the arena became sick and died after application of the dust suppressant by the Bliss Waste Oil Company. The U.S. Centers for Disease Control and Missouri Department of Health & Senior Services investigated and sampled the arena. It was not until 1974 that TCDD was determined to be the cause of the health problems. The origin of the dioxin was traced back to the plant in Verona, Missouri.

A majority of the sites were covered with gravel, chip and seal, or paved to control mechanical movement of the dioxin-contaminated soil. The U.S. Environmental Protection Agency (EPA) Record of Decision for Final Management of Dioxin-Contaminated Soil and Final Disposition of Structures and Debris at Times Beach, Missouri and the Minker/Stout/Romaine Creek Site, Missouri, required:

1. excavation of contaminated soils exceeding 20 ppb TCDD and onsite thermal treatment of those soils at Times Beach;
2. capping of areas at Times Beach with soil dioxin levels above 1 ppb with a minimum of one foot of clean soil;
3. demolition and onsite disposal of the structures and debris at Times Beach; and
4. excavation of contaminated soil and sediment from the Minker/Stout/Romaine Creek site and other identified Missouri sites and transport to Times Beach for treatment.

The 27 dioxin-contaminated sites in Missouri range from those highly industrialized areas of St. Louis, Missouri, to residential areas in surrounding communities, and to rural areas. The industrial sites with limited habitat for trust resources include Arkansas Best Freight, Bonifield Brothers Trucking, East Texas Motor Freight, Hamill Transfer, Jones Truck Line, and Overnight Transport. Southern Cross Lumber is in an industrial park near Lambert Airport, St. Louis, Missouri, and is surrounded by upland habitat.

The residential sites include Castlewood/Sontag Road, Community Christian Church, Manchester Methodist Church, Eureka-East North Street & Southwestern Bell, Quail Run Mobile Home Park, Ellisville Area/MidAmerica Arena, and Highway 141 Access Road. Bristol Steel, Frontenac Tank, and Bull Moose Tube Company are commercial sites on the edge of residential sites. The sites include and are surrounded by native and

ornamental trees, shrubs, flowering plants, and grasses. Many of the sites are bordered by water bodies.

Baxter Garden Center, Hellwig Fruit Market, Saddle and Spur Arena, and Minker/Stout/Romaine Creek/Cashel/Sullins are in rural areas that are gradually being developed, both commercially and residentially. These sites are surrounded by forested and agricultural lands.

Times Beach was disincorporated in 1985 and the State of Missouri took title of the land after completion of the cleanup. The Missouri Department of Natural Resources (MDNR), Division of State Parks currently operates the former Times Beach as Route 66 State Park.

Bubbling Springs Arena, Lacy Manor/Sandcut Road, Rosati/Piazza Road/Bliss Farm, Shenandoah Stables, and Timberline Stables sites are rural in nature with most located near a water body.

The majority of the sites containing significant habitat lies in the the Lower Meramec River Basin in Jefferson and St. Louis Counties, Missouri.

Trust resources injured by the release of dioxin at the 27 sites include migratory birds (Appendix B), with the majority of the migratory bird habitat within the Meramec River Basin. Significant restoration opportunities exist within this watershed. The types of migratory bird habitat to be restored or replaced include upland forest of oak, hickory, maple, and ash; and stream floodplains ranging from mixed herbaceous to shrub (willow, dogwood, alder) to forested (willow, cottonwood) habitat. The Times Beach Reclamation Report prepared by MDNR states that the bird life, vegetation and landform are most consistent with a wet-mesic bottomland forest.

The USFWS completed a draft Screening-Level Ecological Risk Assessment (SLERA) for migratory birds. The SLERA uses conservative (worst-case scenario) assumptions to model risk to ecological receptors. Some of the conservative assumptions in the SLERA included:

1. Birds would be exposed to 1 ppb dioxin in soil across the entire site;
2. No degradation or dilution of dioxin concentrations occurred in the soil;
3. And used multiples of ten to increase the risk factor when assumptions were made due to the use of data from surrogate species or other uncertainties.

The SLERA concluded that the 1 ppb dioxin remedial action level for the 27 sites in eastern Missouri may pose an unacceptable risk to migratory birds. Therefore, the on-site primary restoration of injured natural resources and their services on the 27 sites is not considered as a viable restoration alternative in this plan. Information from the SLERA was also used to calculate acceptable levels of use by migratory birds relative to dioxin soil contamination of 1 ppb (Attachment D). Based on the home range of a migratory bird expected to accumulate dioxin at relatively high concentrations (kestrels), and a conservative safety factor (an additional multiple of ten), the FWS has concluded that

preferred habitat restoration can be established one mile or more distant from the dioxin sites.

The NRD settlement with the NEPACCO and Syntex defendants was based on contamination of on-site habitat. A total of 57.5 acres of habitat were contaminated by dioxin. A target of 57.5 acres will be restored, replaced, rehabilitated, or the equivalent acquired for the sole purpose of conserving and protecting natural resources and habitat similar to that historically found on or adversely impacted by the Missouri Dioxin Sites. The actual acreage restored or acquired will likely be either more or less than 57.5 acres depending on cost of land per acre and conservation opportunities available on private and public lands.

Potential restoration projects will include voluntary restoration of privately and/or publicly owned lands with perpetual easements offered to the landowner(s), or acquisition of areas that provide equivalent services as those at the Missouri Dioxin Sites. Restoration projects will focus primarily on acquisition and restoration of upland and bottomland migratory bird habitat. If lands are acquired, they will be deeded to the State, County, and/or private land management entities with perpetual easements.

#### **1.4 Restoration Goals/Purposes of Restoration**

The purpose of this Restoration Plan is to outline potential alternatives for restoring, replacing, or acquiring the equivalent of the injured natural resources (i.e., primarily migratory bird habitat) and an explanation of the alternative chosen to address the injuries. Five alternatives are evaluated to accomplish restoration.

#### **1.5 Need for Restoration**

After completion of the remedial action, it was determined that the residual dioxin levels in the soils remained injurious to migratory birds through incidental soil ingestion and upper trophic level organisms via food-chain transfer. To avoid unnecessary exposure, potential restoration projects must be implemented one-mile outside of the contaminated area.

#### **1.6 National Environmental Policy Act**

The National Environmental Policy Act (NEPA) was signed into law on January 1, 1970. The President's Council on Environmental Quality (CEQ) issued final Regulations for Implementing the Procedural Provisions of NEPA on November 29, 1978. The National Environmental Policy Act and the CEQ regulations establish the guiding principles for safe guarding the environment and directing agencies on how to make better decisions. The NEPA process is intended to help public officials make these decisions based on understanding of environmental consequences, and take actions that protect, restore, and enhance the environment. The process involves determining the proper level of analysis based on the scope of the project; formulating alternatives and selecting a preferred alternative; and facilitating public involvement.

## **1.7 Coordination and Scoping**

### **1.7.1 Public Notification**

A 30-day public comment period started on June 16, 2008 and ended on July 16, 2008. A legal notice was placed in the *St. Louis Post Dispatch* newspaper in St. Louis, Missouri and ran for three consecutive days prior to the opening day of the comment period to notify the public of the existence of the plan and to solicit public comments.

Written comments on the restoration plan **were** sent to:

Heidi Kuska  
US Fish and Wildlife Service  
Columbia Missouri Ecological Services Field Office  
101 Park DeVille Dr. Suite A  
Columbia, Missouri 65203

### **1.7.2 Public Meetings and Summary of Scoping**

A public meeting was held on June 24, 2008 at the St. Louis Community College, Meramec Campus to present the draft restoration plan and provide opportunities for the public to ask questions on the Draft Restoration Plan.

## **2.0 Proposed Restoration Action/Alternatives**

### **2.1 Goal of Restoration**

The primary goal is to compensate the public for the loss of public resources by restoring the injured resource; in this case migratory birds. Restoration can take several forms. Injured resources may be rehabilitated to accomplish restoration. If rehabilitation is not possible, the equivalent of the injured resources may be acquired or replaced by:

- creating new resources, or
- undertaking activities to increase the services provided by other existing resources.

Restoration of the resource directly injured is referred to as “primary restoration”. Primary restoration includes returning an injured resource to its prior condition. Compensatory restoration includes acquisition of other resources to compensate for those which were injured. Primary and compensatory restoration may entail the same type of restoration activities.

Migratory bird populations are in decline worldwide due to a number of factors. One primary reason for bird decline is a destruction of their habitat. By restoring or protecting migratory bird habitat, there will be indirect but substantial benefits to the birds themselves. The goal of the Trustees is to restore or protect migratory bird habitat.

We used the following options to consider restoration projects:

- a) Restoration of in-kind natural resources through purchasing land or securing conservation easements on private lands in the vicinity of the sites;
- b) Acquisition and/or restoration of similar, out-of-kind resources;

Primary restoration of in-kind natural resources at the 27 sites was not considered due to three factors:

1. the potential existence of soil contaminated with dioxin over levels creating potential risk to migratory birds as determined by the SLERA;
2. lack of cost-effective and practical restoration technologies to address potential risk from dioxin;
3. and poor habitat potential for many of the urban and suburban sites.

An in-kind natural resource refers to the same type of resource that was injured or lost. An out-of-kind natural resource refers to resources different from those injured or lost, but which provide similar natural resource services. Projects entailing out-of-kind restoration are given less priority than those entailing in-kind restoration due to the ecological uncertainties associated with replacing one habitat or resource type with a different type. Acquisition entails substituting an injured resource with another resource that provides the same or substantially similar services. The least priority is given to the acquisition of resources that differ from those that were injured.

## **2.2 Criteria for identifying and Selecting the Proposed Restoration Action and Alternatives**

The alternative selected 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.

The Natural Resource Damage Assessment (NRDA) regulations [40 CFR § 11] outline restoration planning, providing that restoration plans should consider ten factors (identified at 43 CFR § 11.82) when evaluating and selecting among possible projects to restore or replace injured natural resources. The factors below are part of the needs that will be used to select an alternative and to subsequently select projects within an alternative.



- a) Technical feasibility.
- b) The relationship of the expected costs of the proposed actions to the expected benefits
- c) Cost effectiveness as defined pursuant to 43 CFR 11.82 (d)
- d) The results of any actual or planned response actions.
- e) The potential for additional injury resulting from the proposed actions, including long-term and indirect impacts, to the injured resources or other resources.
- f) The natural recovery period.
- g) Ability of the resources to recover with or without alternative actions.
- h) Potential effects of the action on human health and safety.
- i) Consistency with relevant Federal, State, and tribal policies.
- j) Compliance with relevant Federal, State, and tribal laws.

The selected alternative must restore, rehabilitate, replace and/or acquire the equivalent of the natural resources injured by the release.

### **2.3 Proposed Action/Alternatives**

The Trustees are required to assess a “reasonable number” of alternatives for restoration purposes. A project may consist of a single action or a set of actions, which may be undertaken. In addition to, or in accordance with the criteria contained in 43 CFR § 11.82, the Trustees have identified the following screening criteria as desirable characteristics for potential projects:

- a) The restored or acquired habitats are similar in type to the habitats impacted.
- b) The project is in the same watershed as the impacted habitats, but outside of the described 1-mile buffer zone.
- c) The project provides long-term or perpetual benefits to migratory birds and other fish and wildlife resources.
- d) Projects with identified partners who can provide additional natural resource benefits through funding and/or restoration and enhancement activities.
- e) Projects that can establish or help establish relatively large tracts of protected habitat as opposed to many small fragmented habitats.

#### **2.3.1 Alternative A: No Action/Natural Recovery**

The No Action alternative, required by the National Environmental Policy Act (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 or enhance injured natural resources. The public would not be compensated for injuries

to natural resources. In addition, the terms of the Consent Decree would be violated since the settlement funds would not be expended on restoration projects.

### **2.3.2 Alternative B: Purchase Lands and Obtain Conservation Easements Near All 27 EMD Sites**

Alternative B would include purchasing land to be held by a state or local government or a private non-profit entity devoted to conservation or preservation; and/or securing long-term conservation easements on private property that maintains migratory bird habitat in perpetuity. Alternative B places a priority for funding projects that would directly replace injured natural resources with in-kind natural resources in the vicinity of the loss at each site. If in-kind habitats are not available, in the vicinity of a site, similar out of kind habitat would be purchased, preserved with conservation easements, and/or enhanced if necessary. CERCLA authorizes trustees to replace or acquire natural resources equivalent to those injured by hazardous substance releases, in lieu of or in addition to, direct restoration of the injured resources themselves. Natural resources may also be rehabilitated with actions that increase the ecological integrity or viability of resources.

Alternative B would be difficult to implement, in that it would be necessary to find many properties that are suitable migratory bird habitat or that could be restored to habitat at a reasonable cost. Many of the 27 sites are in urban or commercial areas that lack suitable habitat or have little land available to develop as habitat. Further, many of the urban and commercial sites did not have suitable habitat at the time of the release of the dioxin. Therefore, the release at these sites contributed less to natural resource injuries than releases at locations where suitable habitat does or did exist at the time of the release.

Alternative B ranks low on several criteria discussed in sections 2.2 and 2.3, above. The alternative is not very cost effective, due to the transactional costs incurred in the effort to secure or purchase and restore many properties. The relationship between the expected cost and expected benefit would be low. This alternative would likely not result in large relatively un-fragmented tracts of land due to the wide geographic distribution of the 27 dioxin sites.

### **2.3.3 Alternative C: Purchase Lands associated with the Lower Meramec River Basin sites.**

Under this alternative the Trustees will purchase areas in the Lower Meramec River Basin available for acquisition and transfer to state or local governments or non-profit groups. The Trustees would focus on the Lower Meramec River Basin due to a number of factors. Most of the sites with the greatest injured migratory bird habitat are located in Jefferson, Franklin, or St. Louis Counties, in the Lower Meramec River Basin. The area has significant potential to develop habitat for migratory birds due to the existence of large tracts of undeveloped private land. Several tracts of public land already exists in the area and purchasing additional land in the vicinity would be an efficient way to establish larger tracts of relatively un-fragmented migratory bird habitat.

Project areas considered under Alternative C include:

- a) Meramec River floodplain within St. Louis, Jefferson, and or eastern Franklin Counties and ecologically associated uplands;
- b) Sub-watersheds and tributaries to the Meramec River, including adjacent flood plains and ecologically associated uplands;
- c) Supporting ecosystems in the Meramec River Watershed.

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

- a) Relationship to injuries (acquisition/restoration opportunities that address services and values similar to those lost due to the release of hazardous substances are preferred);
- b) Quality of restoration opportunities (projects with substantial ecological opportunities are preferred);
- c) Ecological function/hydraulic connectivity (areas in proximity to the Meramec River are preferred);
- d) Cost and cost-effectiveness (projects with lower cost per restored or replaced services or values are preferred).

The types of migratory bird habitat to be replaced include upland forest of oak hickory and maple, and stream floodplains ranging from mixed herbaceous to shrub (willow, dogwood, alder) to forested (sycamore, red maple, cottonwood, and ash) habitat. The bird life, vegetation and landform of the Eastern Missouri Dioxin sites that had high habitat potential are most consistent with a wet-mesic bottomland forest. Projects should be adjacent or very close to existing habitat so that fragmentation of habitats would be reduced and re-colonization by a full component of native plants and wildlife would easily occur. This factor should not diminish the importance of replanting heavy-seeded, site-adapted, native species, such as oaks to accelerate reestablishment of the natural community. If lands are acquired, they will be deeded to the State, County, and/or private land management entities with perpetual easements. NRDAR restoration funds may be available to pay for additional restoration and or maintenance projects. It may also be the responsibility for the entity receiving the acquired land for any additional restoration and/or enhancement projects on the property and must continue management consistent with the goals set forth in this plan. Restoration activities may include but are not limited to, prescribed burning, sedimentation reduction projects, removal of non-native species, forest thinning, tree planting, etc.

There may be difficulties in implementing Alternative C due to its focus solely on purchasing property for government or non-profit ownership. There may be land in private ownership that is not for sale but that is available for migratory bird habitat restoration. Alternative C, which is restricted only to purchasing land, may unnecessarily limit conservation options.

#### **2.3.4. Alternative D: Obtain Conservation Easements in the Lower Meramec River Basin**

This alternative is identical to Alternative C, described above with the exception that habitat would be preserved exclusively through securing conservation easements on private lands. Easements would be purchased from private land owners. These easements would contain provisions that require land be maintained as wildlife habitat in perpetuity. Easements would be held by state or local governments, non-profit organizations, or the Service. Restoration funds may be available to enhance existing habitat.

This alternative has similar difficulties in implementation as Alternative C. Restricting conservation opportunities to private land owners who are willing to grant conservation easements unnecessarily limits the effectiveness of the restoration action. There may be land-owners who are more willing to sell their property than to have their land tied up in conservation easements in perpetuity.

As in the other alternatives, prior to the selection and implementation of any site specific actions, the Trustees will review the specific proposals to determine if they comply with all applicable requirements: NEPA, Historic Preservation Act, Endangered Species Act, Americans With Disabilities Act, etc.

#### **2.3.5 Alternative E: (Preferred Alternative) Purchase Lands and Obtain Conservation Easements in the Lower Meramec River Basin**

This alternative includes all project types outlined in Alternative C, but would restore, rehabilitate, replace, and/or acquire equivalent resources within the Lower Meramec River Basin only. Alternative E is a combination of Alternatives C and D. Alternative E contains both conservation easements and land purchase. The Alternative E area includes watersheds adjacent to the Meramec River that support the ecological balance of aquatic and terrestrial species for the benefit of migratory birds injured due to the hazardous substance release:

- a) Tributaries to the Meramec River, including adjacent flood plains and ecologically associated uplands;
- b) Supporting ecosystems within the Meramec River Watershed.

The Trustees recognize that basic ecological principles must be adhered to so as to achieve maximum benefit from restoration projects. However, projects that serve to restore ecological function to the Meramec River area or those which are hydraulically connected to the Meramec River area are preferred to projects located in upstream or adjacent watersheds. The Trustees expect ecological priorities for all acquisition/restoration projects under Alternative E will be influenced primarily by the following key factors:

- a) Relationship to injuries (acquisition/restoration opportunities that address services and values similar to those lost due to the release of hazardous substances are preferred);
- b) Quality of restoration opportunities (projects with substantial ecological opportunities are preferred);
- c) Ecological function/hydraulic connectivity (areas in proximity to, but more than one-mile away (between 1-5 miles away) from the Lower Meramec River Basin sites are preferred);
- d) Cost and cost-effectiveness (projects with lower cost per restored or replaced services or values are preferred).

The Trustees prefer a mix of natural resource restoration projects to provide a broad array of natural resource services throughout the Eastern Missouri Dioxin Restoration Area while at the same time enhancing a select group of outdoor recreational activities such as fishing and hiking, which have natural resource benefits to local communities. Thus, a variety of goals are supported. Selecting a mix of projects allows for the recovery of a wider range of injured resources as well as more flexibility for cost-effectiveness and feasibility due to different constraints related to the ecology of the area or ability to find willing participants. Potential benefits of this holistic approach to acquisition/restoration include creating tracts of continuous valuable habitat or connecting existing habitats. This approach keeps the important linkages between physical, chemical and biological properties of the overall ecosystem.

As in the other alternatives, prior to the selection and implementation of any site specific actions, the Trustees will review the specific proposals to determine if they comply with all applicable requirements: NEPA, Historic Preservation Act, Endangered Species Act, Americans With Disabilities Act, etc.

The Trustees will require that appropriate permits are obtained and regulations followed. All projects selected for implementation will comply with applicable and relevant federal and state laws, policies and regulations. Preservation of habitats through acquisition of land or conservation easements will only be from willing sellers or participants. Landowners will be under no obligation to sell to any of the governments associated with the Trustees. Neighbors adjacent to land purchased for preservation under this restoration plan will retain all of their current rights to their land. The government agencies are required to pay fair market value for land purchased. Fair market value will be determined through established appraisal procedures.

Alternative E is the preferred alternative because it supports several restoration goals outlined in sections 2.2 and 2.3. Alternative E leverages conservation opportunities by focusing on areas where relatively large tracts of in-kind habitat still exists in private and public ownership. Alternative E is cost effective because it preserves relatively large tracts of habitat without numerous transactions and yet allows maximum flexibility through both property purchase and conservation easements. It provides a nexus for the injured natural resource by providing a preference for in-kind habitat and focusing on

areas where the most significant habitat injury occurred, namely the Meramec River Basin.

### **3.0 Monitoring Program and Performance Criteria**

Fish and Wildlife Service or state or local government personnel will periodically monitor the success of the restoration. This will involve periodic evaluation of progress of any restoration-related construction. Any construction/restoration projects will be monitored to insure that all applicable environmental regulations are adhered to. The monitoring program will also evaluate the end product of restoration by inspecting property to see that habitat has been restored according to plans and that conservation easements are maintained and followed. Field inspections will determine whether the preferred native species dominates in a given habitat and invasive species are not encroaching on restoration sites. Quantitative ecological measurements such as plant and bird species diversity, species richness, and percent ground cover may be needed to objectively judge restoration success.

### **4.0 Budget Summary and Timetable**

With the 1991 Consent Decree, DOI recovered \$200,000 in NRDAR funds. The funds have been kept in an interest bearing account since that time. The current balance is \$318,005. In general, this sum will be spent on restoration activities at the EMD Sites. Specific fund distribution for restoration activities will not be possible until projects are selected and the specific restoration types and needs are identified.

The Trustees would like to begin restoration projects by July 2008.

Restoration completion would be projected for December 2009.

Project monitoring would continue for 5 years in some cases and, in some instances, conservation easements in perpetuity for example, could continue into the foreseeable future.

### **5.0 List of Preparers**

Heidi Kuska  
Fish and Wildlife Biologist  
U.S. Fish and Wildlife Service  
101 Park DeVille Drive, Suite A  
Columbia, MO 65203  
(573)234-2132  
[Heidi\\_Kuska@fws.gov](mailto:Heidi_Kuska@fws.gov)

Dave Mosby  
Environmental Contaminants Specialist  
U.S. Fish and Wildlife Service  
101 Park DeVille Dr., Suite A  
Columbia, MO 65203  
[Dave\\_mosby@fws.gov](mailto:Dave_mosby@fws.gov)

## **6.0 List of Agencies, Organizations, and Parties Consulted for Information**

Missouri Department of Natural Resources  
U.S. Fish and Wildlife Service  
Missouri Department of Conservation  
St. Louis County Parks Department  
U.S. Environmental Protection Agency

## **7.0 Public Comments and Trustee's Responses**

### **7.1 Public Comments**

The Trustees accepted public comments for 30 days (June 16, 2008-July 16, 2008). A legal notice was placed in the *St. Louis Post Dispatch* newspaper of St. Louis, MO and ran for three consecutive days prior to the opening day of the comment period. No comments were received during the 30-day public comment period. A public meeting was held on June 24, 2008 and no comments were received at that time.

### **7.2 Trustee Responses to Public Comments**

As there were no comments received, there are no responses to public comments.

## **8.0 Compliance with Other Authorities**

### **8.1 NEPA Compliance**

The Final Revised Procedures for the U.S. Fish and Wildlife Service for implementing NEPA, published in the Federal Register on January 16, 1997, provide a categorical exclusion for natural resource damage assessment restoration plans prepared under CERCLA when only minor or negligible change in the use of the affected areas is planned. Categorical exclusions are classes of actions which do not individually or cumulatively have a significant effect on the human environment.

The projects selected above will result in negligible change in the use of the project area and will not have a significant effect on the human environment. Accordingly, this Restoration Plan qualifies for a categorical exclusion under NEPA. An Environmental Action Statement will be prepared to document this determination.

### **8.2 Endangered Species Act Compliance**

This 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) (Appendix A).

### **8.3 National Historic Preservation Act Compliance**

The U.S. Fish and Wildlife Service's Project Leader for Missouri Ecological Services will provide the Regional Historic Preservation Officers with this Restoration Plan when specific projects are selected.

### **8.4 Clean Water Act Compliance**

Clean Water Act compliance is applicable to any restoration activities that involve construction that disturbs more than one acre of land. Implementation of best management practices will be required to control erosion and minimize pollutant runoff.

### **9.0 Literature Cited**

Nelson, Paul W., 2005, The Terrestrial Natural Communities of Missouri: The Missouri Natural Areas Committee.

U.S. Environmental Protection Agency, 1988, Record of Decision for Final Management of Dioxin-Contaminated Soil and Final Disposition of Structures and Debris at Times Beach, Missouri and the Minker/Stout/Romaine Creek Site, Missouri.

U.S. Fish and Wildlife Service, 1998, Screening-Level Ecological Risk Assessment for Insectivorous Migratory Birds Exposed to 1ppb 2,3,7,8 Tetrachlorodibenzo-P-Dioxin.

### **Appendices**

Appendix A: Dioxin-Contaminated Sites in Eastern Missouri

Appendix B: Migratory Birds Potentially Affected by the Release of Dioxin in Eastern Missouri



## **Appendix A: Dioxin Contaminated Sites in Eastern Missouri**

1. Arkansas Best Freight, St. Louis County
2. Baxter Garden Center, St. Louis County
3. Bonifield Brothers Trucking, St. Louis County
4. Bristol Steel, St. Louis County
5. Bull Moose Tube Company, Franklin County
6. Castlewood/Sontag Road, St. Louis County
7. Community Christian Church, St. Louis County
8. East Texas Motor Freight, St. Louis County
9. Ellisville Area/MidAmerica Arena, St. Louis County
10. Eureka-East North Street & Southwestern Bell, St. Louis County
11. Frontenac Tank, St. Louis County
12. Hamill Transfer, St. Louis County
13. Hellwig Fruit Market, St. Louis County
14. Highway 141 Access Road, Jefferson County
15. Jones Truck Line, St. Louis County
16. Lacy Manor/Sandcut Road, Jefferson County
17. Manchester Methodist Church, St. Louis County
18. Bubbling Springs, Jefferson County
19. Minker/Stout/Romaine Creek/Cashel/Sullins, Jefferson County
20. Overnite Transport, St. Louis County
21. Quail Run Mobil Home Park, Franklin County
22. Rosati/Piazza Road/Bliss Farm, Phelps County
23. Saddle and Spur, Jefferson County
24. Shenandoah Stables, Lincoln County
25. Southern Cross Lumber, St. Louis County
26. Timberline Stables, Callaway County
27. Times Beach, St. Louis County

## Appendix B: Migratory Birds Potentially Affected by the Release of Dioxin in Eastern Missouri

Canada goose	<i>Branta canadensis</i>	Olive-sided flycatcher	<i>Contopus borealis</i>
Mallard	<i>Anas platyrhynchos</i>	Horned lark	<i>Eremophila alpestris</i>
Blue-winged teal	<i>Anas discors</i>	Barn swallow	<i>Hirundo rustica</i>
Green-winged teal	<i>Anas crecca</i>	Cliff swallow	<i>Hirundo pyrrhonota</i>
Wood duck	<i>Aix sponsa</i>	Tree swallow	<i>Tachycineta bicolor</i>
Turkey vulture	<i>Cathartes aura</i>	Purple martin	<i>Progne subis</i>
Northern goshawk	<i>Accipiter gentilis</i>	Blue jay	<i>Cyanocitta cristata</i>
Sharp-shinned hawk	<i>Accipiter striatus</i>	American crow	<i>Corvus brachyrhynchos</i>
Cooper's hawk	<i>Accipiter cooperii</i>	Black-capped chickadee	<i>Parus atricapillus</i>
Northern harrier	<i>Circus cyaneus</i>	Carolina chickadee	<i>Parus carolinensis</i>
Rough-legged hawk	<i>Buteo lagopus</i>	Tufted titmouse	<i>Parus bicolor</i>
Red-tailed hawk	<i>Buteo jamaicensis</i>	White-breasted nuthatch	<i>Sitta carolinensis</i>
Swainson's hawk	<i>Buteo swainsoni</i>	Red-breasted nuthatch	<i>Sitta canadensis</i>
Broad-winged hawk	<i>Buteo platypterus</i>	Brown creeper	<i>Certhia americana</i>
Red-shouldered hawk	<i>Buteo lineatus</i>	House wren	<i>Troglodytes aedon</i>
American kestrel	<i>Falco sparverius</i>	Winter wren	<i>Troglodytes troglodytes</i>
Great blue heron	<i>Ardea herodias</i>	Bewick's wren	<i>Thryomanes bewickii</i>
American coot	<i>Fulica americana</i>	Carolina wren	<i>Thryothorus lucovicianus</i>
Killdeer	<i>Charadrius wilsonia</i>	Northern mockingbird	<i>Mimus polyglottos</i>
Upland sandpiper	<i>Bartramia longicauda</i>	Gray catbird	<i>Dumetella carolinensis</i>
American woodcock	<i>Scolopax minor</i>	Brown thrasher	<i>Toxostoma rufum</i>
Mourning dove	<i>Zenaida macroura</i>	American robin	<i>Turdus migratorius</i>
Yellow-billed cuckoo	<i>Coccyzus americanus</i>	Wood thrush	<i>Hylocichla mustelina</i>
Black-billed cuckoo	<i>Coccyzus erythrophthalmus</i>	Swainson's thrush	<i>Catharus ustulatus</i>
Eastern screech owl	<i>Otus asio</i>	Eastern bluebird	<i>Sialia sialis</i>
Great horned owl	<i>Bubo virginianus</i>	Blue-gray gnatcatcher	<i>Poliophtila caerulea</i>
Long-eared owl	<i>Asio otus</i>	Ruby-crowned kinglet	<i>Regulus calendula</i>
Barred owl	<i>Strix varia</i>	Water pipit	<i>Anthus spinoletta</i>
Chuck-will's widow	<i>Caprimulgus carolinensis</i>	Loggerhead shrike	<i>Lanius ludovicianus</i>
Whip-poor-will	<i>Caprimulgus vociferous</i>	White-eyed vireo	<i>Vireo griseus</i>
Common nighthawk	<i>Chordeiles minor</i>	Bell's vireo	<i>Vireo bellii</i>
Chimney swift	<i>Chaetura pelagica</i>	Solitary vireo	<i>Vireo solitarius</i>
Ruby-throated hummingbird	<i>Archilochus colubris</i>	Yellow-throated vireo	<i>Vireo flavifrons</i>
Belted kingfisher	<i>Ceryle alcyon</i>	Red-eyed vireo	<i>Vireo olivaceus</i>
Common flicker	<i>Colaptes auratus</i>	Warbling vireo	<i>Vireo gilvus</i>
Pileated woodpecker	<i>Dryocopus pileatus</i>	Black-and-white warbler	<i>Mniotilta varia</i>
Red-bellied woodpecker	<i>Melanerpes carolinus</i>	Prothonotary warbler	<i>Protonotaria citrea</i>
Red-headed woodpecker	<i>Melanerpes erythrocephalus</i>	Worm-eating warbler	<i>Helmitheros vermivorus</i>
Yellow-bellied sapsucker	<i>Sphyrapicus varius</i>	Tennessee warbler	<i>Vermivora peregrina</i>
Hairy woodpecker	<i>Picoides villosus</i>	Orange-crowned warbler	<i>Vermivora celata</i>
Downy woodpecker	<i>Picoides pubescens</i>	Northern parula	<i>Parula americana</i>
Eastern kingbird	<i>Tyrannus tyrannus</i>	Yellow warbler	<i>Dendroica petechia</i>
Great crested flycatcher	<i>Myiarchus crinitus</i>	Yellow-rumped warbler	<i>Dendroica coronata</i>
Eastern phoebe	<i>Sayornis phoebe</i>	Cerulean warbler	<i>Dendroica cerulea</i>
Acadian flycatcher	<i>Empidonax virescens</i>	Yellow-throated warbler	<i>Dendroica dominica</i>
Eastern wood-pewee	<i>Contopus virens</i>	Chestnut-sided warbler	<i>Dendroica pensylvanica</i>
Blackpoll warbler	<i>Dendroica striata</i>	Prairie warbler	<i>Dendroica discolor</i>
Ovenbird	<i>Seiurus aurocapillus</i>	Common yellowthroat	<i>Geothlypis trichas</i>
Yellow-breasted chat	<i>Icteria virens</i>	Kentucky warbler	<i>Oporornis formosus</i>
American redstart	<i>Setophaga ruticilla</i>	Bobolink	<i>Dolichonyx oryzivorus</i>
Eastern meadowlark	<i>Sturnella magna</i>	Western meadowlark	<i>Sturnella neglecta</i>
Red-winged blackbird	<i>Agelaius phoeniceus</i>	Rusty blackbird	<i>Euphagus carolinus</i>
Common grackle	<i>Quiscalus quiscula</i>	Brown-headed cowbird	<i>Molothrus ater</i>
Orchard oriole	<i>Icterus spurius</i>	Baltimore oriole	<i>Icterus galbula</i>
Scarlet tanager	<i>Piranga olivacea</i>	Summer tanager	<i>Piranga rubra</i>
Northern cardinal	<i>Cardinalis cardinalis</i>	Rose-breasted grosbeak	<i>Pheucticus ludovicianus</i>
Blue grosbeak	<i>Guiraca caerulea</i>	Indigo bunting	<i>Passerina cyanea</i>
Purple finch	<i>Carpodacus purpureus</i>	Common redpoll	<i>Carduelis flammea</i>

## Appendix B: Migratory Birds Potentially Affected by the Release of Dioxin in Eastern Missouri

American goldfinch	<i>Carduelis tristis</i>	Dickcissel	<i>Spiza americana</i>
Rufous-sided towhee	<i>Pipilo erythrophthalmus</i>	Savannah sparrow	<i>Passerculus sandwichensis</i>
Grasshopper sparrow	<i>Ammodramus savannarum</i>	Henslow's sparrow	<i>Ammodramus henslowii</i>
Le Conte's sparrow	<i>Ammodramus leconteii</i>	Vesper sparrow	<i>Poocetes gramineus</i>
Lark sparrow	<i>Chondestes grammacus</i>	Dark-eyed junco	<i>Junco hyemalis</i>
Bachman's sparrow	<i>Aimophila aestivalis</i>	American tree sparrow	<i>Spizella arborea</i>
Chipping sparrow	<i>Spizella passerine</i>	Field sparrow	<i>Spizella pusilla</i>
Clay-colored sparrow	<i>Spizella pallida</i>	White-crowned sparrow	<i>Zonotrichia leucophrys</i>
White-throated sparrow	<i>Zonotrichia albicollis</i>	Fox sparrow	<i>Passerella iliaca</i>
Song sparrow	<i>Melospiza melodia</i>	Lapland longspur	<i>Calcarius lapponicus</i>
Smith's longspur	<i>Calcarius pictus</i>		

UNITED STATES FISH AND WILDLIFE SERVICE

ENVIRONMENTAL ACTION STATEMENT

Within the spirit and intent of the Council on Environmental Quality's regulations for implementing the National Environmental Policy Act (NEPA), and other statutes, orders, and policies that protect fish and wildlife resources, I have established the following administrative record and determined that the action of **Eastern Missouri Dioxin Sites NRDA Restoration Plan**:

Check One:

X is a categorical exclusion as provided by 51 6 DM 2, Appendix I and 516 DM 6, Appendix 1. No further NEPA documentation will therefore be made.

is found not to have significant environmental effects as determined by the attached environmental assessment and finding of no significant impact.


is found to have significant effects and, therefore, further consideration of this action will require a notice of intent to be published in the Federal Register announcing the decision to prepare an EIS.

is not approved because of unacceptable environmental damage, or violation of Fish and Wildlife Service mandates, policy, regulations, or procedures.

is an emergency action within the context of 40 CFR 1506.11. Only those actions necessary to control the immediate impacts of the emergency will be taken. Other related actions remain subject to NEPA review.

Other supporting documents (list): I have evaluated the proposed action in accordance with DOI and USFWS NEPA procedures. The implementation of actions (conservation/restoration of migratory bird habitats) resulting from this plan will result in negligible environmental impacts – these actions will have a positive environmental benefit. Furthermore, the actions resulting from this restoration plan will not have a cumulative, significant effect on the human environment – conversely it will have a cumulative positive benefit to the public. Natural resource damage assessment restoration plans are designated categorical exclusions (**number B.11**) under 516 DM 8. Based on the criteria in 516 DM 2 Appendix 2, I have determined that no extraordinary circumstances exist that would disqualify this action for a categorical exclusion.

Signature Approval:

 7/29/08  
(1) Originator                      Date

\_\_\_\_\_  
(2) WO/RO Environmental Coordinator                      Date

\_\_\_\_\_  
(3) AD/ARD                      Date

\_\_\_\_\_  
(4) Director/Regional Director                      Date