

**Southeast Missouri Lead Mining District
Natural Resource Restoration: Proposal for
Native Plant Diversity Restoration:
Non-Native Invasive Plants (NNIP) treatments and
planting native species across Salem and Potosi-
Fredericktown Ranger Districts on the Mark Twain
National Forest**



Missouri Trustee Council

September 2, 2015

I. Introduction

The State of Missouri, the U.S. Department of the Interior, and the U.S. Department of Agriculture, acting on behalf of the public as trustees for natural resources and their associated services, propose to fund several compensatory restoration projects in the Southeast Missouri Lead Mining District. This restoration proposal relates to the natural resource damage assessment and restoration process undertaken by the State of Missouri, the U.S. Department of the Interior, and the U.S. Department of Agriculture (collectively “Trustees”) in the Southeast Missouri Lead Mining District pursuant to the Comprehensive Environmental Response, Compensation and Liability Act (42 U.S.C. §§ 9601-9675) and implementing regulations (43 C.F.R. Part 11). The Trustees recovered monetary damages from the Cyprus Amax Minerals Company, Missouri Lead Smelting Company (for purposes of this proposal, Cyprus Amax and Missouri Lead will collectively be referred to as Freeport McMoRan), Teck American, Inc., and DII Industries, LLC. (for purpose of this proposal, Teck American and DII will collectively be referred to as Magmont Joint Venture) to settle certain legal claims concerning injuries to natural resources and their services. In accordance with the Southeast Missouri Ozarks Regional Restoration Plan (SEMORRP), the Trustees propose to fund the control and eradication of non-native invasive species (NNIS) on the Mark Twain National Forest to restore of high quality habitat to replace lost natural resources and the services the resources provide.

For purposes of the Freeport McMoRan and Magmont Joint Venture restoration funds, the Missouri Trustee Council is comprised of the State of Missouri, represented by the Missouri Department of Natural Resources, the U.S. Department of the Interior, represented by the U.S. Fish and Wildlife Service, and the U.S. Department of Agriculture, represented by the U.S. Forest Service. SEMORRP provides a process framework that governs the approach for restoration project identification, evaluation, selection and implementation. This restoration proposal relates the Trustees’ actions to the public in order to solicit their input prior to the selection and implementation of the project.

The proposed restoration projects described in this proposal are compliant with the preferred alternative selected in the SEMORRP. The preferred alternative (SEMORRP, Section 5, Alternative D) is a combination of primary and compensatory restoration. As identified in the SEMORRP, priority is given to primary restoration, whenever feasible.

II. Proposed Restoration Activities

This proposed project is for the eradication and control of non-native invasive species (NNIS) across the project area located on the Mark Twain National Forest as a means to restore and rehabilitate habitat that supports a wide range of natural resources. The habitat within the defined project area (discussed below) is substantially similar to or the same as habitat that has been injured by the release of hazardous substances by the companies mentioned above in the Viburnum Trend Lead Mining Area. Decreased floristic quality due to NNIS and other impairments from the heavy metals have negatively impacted habitat conditions for migratory birds and other fauna. By focusing on NNIS control and eradication, the Trustees will increase the floristic quality in the project area. Restoration of high-quality vegetative communities, with high floristic quality, will act as a supporting ecosystem for migratory birds and other natural resources.

A. Project Area

Currently the Salem and Potosi Ranger Districts of the Mark Twain National Forest (MTNF) have 9,385 infested acres mapped and inventoried (Table 1) in the project area (Map 4). This represents a small percentage of the actual acres infested by non-native and invasive plants that pose a threat to the health and integrity of native plant communities across these two Ranger Districts (Table 2).

The Trustees will use a variety of treatment methods to control, reduce and/or eradicate 50% of the existing mapped and inventoried infestation acres located in portions of the Meramec, Upper Black and Big River Watersheds that fall within the Salem and Potosi Ranger Districts. There are a total of 9,385 inventoried acres, and so in targeting 50% of those acres we plan to **treat 4,693 acres** of high-priority habitat. Most of the infestations pose threats to high quality, un-infested natural communities. Many of the inventoried acres are roads, trails, and right-of-ways that serve as entry points for invasive species onto the national forest. Control of invasive species at these points of entry is particularly important to protecting the floristic composition/integrity of the Mark Twain National Forest.

The Trustees will also complete non-native invasive plant (NNIP) **mapping and inventory, and treatment** on an additional **8,932 acres** focused primarily in the Upper Black Watershed. After control of NNIS, a **native plant seed mix** will be applied to heavily treated areas to promote the growth and colonization of native plant species.

Table 1 Acres of inventoried NNIP species by Watershed

Non-native invasive plant type	Acres inventoried and ready for treatment		
	Meramec (HUC 8)	Big River Watershed	Upper Black Watershed
autumn olive		0.6	
cheatgrass	5.5	7.6	
Chinese lespedeza	3,139.9	218.3	496
common viper's bugloss	0.2		
cutleaf teasel	5.5		
garlic mustard	0.7		
Japanese honeysuckle	178.1		
multiflora rose	2,787.6	239.4	362
Nepalese browntop	0.3		
nodding plumeless thistle	1,172.8		152
sericea lespedeza	33.9	80.3	3
silktree			1
spotted knapweed	93.3	3.5	
tree of heaven	395.2	8.2	
Total: 9,385 acres	7,813	558	1,014

Table 2 Current Priority areas for NNIP management

Prevention Zones	Acres
Campgrounds	275
Developed Recreation Areas	5,543
Dispersed Recreation Areas	2,571
Designated State Natural Areas	490
Priority Forest Plan Management Areas	201,376
Recreational Points	10
Riparian Management Zones	10,899
Trails	632
Trailheads	64
Wilderness Areas	9,143
Total	231,000

The project areas cover much of Zone 1 (Salem and Potosi-Fredericktown Ranger Districts) on the MTNF. By addressing the issue of NNIS on a large scale, the Trustees will be able to positively impact and improve habitat on a landscape scale.

This area is part of the Ozark Highlands, and specifically, the St. Francois Knobs and Basin and the Current River Hills. The area is characterized by rolling plains and steep hills of dolomite, sandstone, and limestone. There are abundant numbers of springs, seeps, and caves within the karst topography. The project area crosses the Big, Meramec, and Upper Black watersheds. Dominant vegetation includes oak-hickory and pine-oak woodlands, oak savannahs, prairies, glades and bottomland forests. These vegetative communities have been reduced from their historical levels of dominance by development and land use. They support unique and distinct plant communities. The soils are old, highly weathered, and often rocky.

Within the project area are species of both state and Federal concern, including the Hine's Emerald Dragonfly (*Somatochlora hineana*) and multiple *Myotis* species, including *M. grisescens*, *M. sodalis*, and *M. septentrionalis*. The Hine's Emerald Dragonfly lives in fens and is very sensitive to changes in landscape. The habitats that these creatures utilize are being taxed by NNIS invasion. Treating the NNIS populations within the project area will help to improve habitat for these federally threatened and endangered species.

B. Relationship with Ongoing Efforts

The proposed project complements existing efforts by the Mark Twain National Forest to address non-native and invasive plant species. The MTNF completed a Forest-wide Environmental Impact Statement (EIS) and Record of Decision which allows the Forest to treat all existing and future NNIP infestations. The MTNF already has in place the personnel to focus on the control and eradication of invasive plant species and the protection, enhancement and restoration of native plant communities. The funding from the proposed project is additional funding, above and beyond what the Forest currently allocates annually toward invasive inventory, monitoring and treatment across all of the Ranger Districts of the Mark Twain National Forest; it will allow MTNF to map and treat a larger area of the Forest. Therefore the proposed project is consistent with the criteria of the SEMORRP to leverage restoration funds with other funding sources to create

additional benefit for natural resources.

C. Maintenance Requirements and Project Timeline

This project proposal requires that NNIS populations receive multiple treatments over the next five years. During the first two years, the priority will be to survey and inventory the project area for target NNIS populations by conducting NNIP and Botanical Surveys to develop baseline botany data. During the subsequent years, the goal will be to focus on treatment for new and emergent populations of NNIS. It will be necessary to treat the populations repeatedly over five years for maximum control. Treated populations will be monitored biannually to determine effectiveness of treatment and prioritization of treatment for the following year. Retreatment will be necessary to maximize control. With continued control and eradication, the replanting or reseedling of native plants to restore the landscape will be added into the project timeline.

It may be necessary to treat the populations outside the five year project window. If this is necessary, monitoring will also need to follow.

D. Measures of Success

Monitoring will be a necessary step to measure the success of the NNIS treatments in the project area. All NNIS treatments across the Forest are monitored for effectiveness. Biannual monitoring will be a critical component of measuring success. Annual inventory and surveying for new or emergent populations will also help to ensure that treatments are effective in controlling NNIS. We will expect that monitoring will show that populations are being eradicated or controlled and that native species are thriving to be considered a positive result.

It may not be possible to completely eradicate large and pervasive NNIS populations. For those populations, it may be more reasonable to control those populations to a level that does not compromise the integrity of the ecosystem and still allows for native species to thrive. New and emergent populations may be easier to eradicate, especially with continued inventory and early detection.

E. Project Management

The MTNF is uniquely qualified to take on and manage a project of this nature. The Forest has specialists on staff that develop, plan and execute land and resource management, and restoration activities as part of MTNF operations. The MTNF has staff, expertise, history of success with restoration work, and public accountability through NEPA. The project proposed here is consistent with the mission of the Forest Service of caring for the land. The Forest Service has completed National Environmental Policy Act (NEPA) analysis, Endangered Species Act Section 7 consultation, and Historic Preservation Act.

F. Project Partners

When available, AmeriCorps crews or Vets Work interns on the Zone will be incorporated into the work. They may be utilized on the project by assisting with mapping exotic/invasive populations, removing plants via cutting or pulling, applying herbicide under the supervision of a certified pesticide applicator, or monitoring populations for treatment effectiveness.

G. Proposed Budget

Budget Details*

Costs description	Amount	Total
NNIP Treatments existing inventoried infestations identified as high priority	4,693 acres	\$328,510
NNIP Survey for Black and Big River Watersheds	8,932 acres	\$446,600
Native Plant Material Native Seed Mix for rehabilitation in heavily treated area.	100 acres @ 5lbs/acre	\$37,500
	Total	\$812,610

*U.S. Forest Service has and will provide matching funding for this project in the form of employee salaries for surveys, implementation, contract administration, and project oversight. Forest Service is contributing both the overhead portion of all employee costs to this project and direct personnel costs, including follow-on biannual monitoring.

III. Public Participation

A. Public Review and Comment Period

The public is invited to review and comment on the proposed projects until October 5, 2015. A public meeting will be held to describe the proposed acquisition and restoration projects as described below. Comments can be submitted electronically (preferred):

Ms. Becky Bryan
Remediation Coordinator
Mark Twain National Forest
401 Fairgrounds Road
Rolla, MO 65401
573-341-7436
Email: blbryan@fs.fed.us

B. Public Meeting, Presentation

A public meeting to solicit comments and answer questions about this restoration proposal will be held on September 2, 2015 at the Visitor Center in Johnson's Shut-Ins State Park at 6 pm.

Map 1 The cross-hatched area indicates the extent that needs to be inventoried for NNIP. The dark red areas show where known NNIP infestations need to be treated.

