



Resolution No. 3
Fernald Preserve Natural Resource Trustees

Re: Development of a Punchlist as described in the Natural Resource Restoration Plan for the Fernald Preserve

WHEREAS, the Trustee Council for the Fernald Preserve (Trustee Council) was established pursuant to the July 2001 Memorandum of Understanding entered into by the U.S. Department of the Interior, the Ohio Environmental Protection Agency, and the U.S. Department of Energy;

WHEREAS, the Natural Resource Restoration Plan for the Fernald Preserve (NRP) is enforceable under the consent decree between the State of Ohio and the United States Department of Energy et al., case number C-1-86-0217 of 11 November 2008.

WHEREAS, the NRP in Section 5.1.1 requires the Trustee Council to conduct a field evaluation of existing restoration projects within 90 days of the effective date of the consent decree, which was 11 November 2008.

WHEREAS, by Resolution No. 1 of the Fernald Preserve Natural Resource Trustees, the Trustee Council agreed by unanimous consent that the field evaluation at the Fernald Preserve would be conducted between June 1, 2009 and August 1, 2009.

WHEREAS, the field evaluation at the Fernald Preserve was conducted between July 13, 2009 and July 16, 2009.

WHEREAS, the NRP in Section 5.1.1 requires the NRTs to jointly determine if additional replanting, repair or restoration work is required in the areas as identified during the field evaluation. The NRTs will jointly develop an acceptable schedule to address the required activities.

WHEREAS, the areas identified during the field evaluation are documented in the attached, "Fernald Natural Resource Trustee, Field Walkdown Summary and Path Forward" dated October 8, 2009.

WHEREAS, the attached schedule has been developed to address the findings of the field evaluation taking into consideration DOE's available current year funding and budget cycle and other relevant factors.

WHEREAS, the NRP in Section 5.1.1 requires all rework required as a result of the field evaluations will be completed by DOE.

NOW THEREFORE BE IT RESOLVED that the Trustee Council approves, by unanimous consent, the attached walkdown summary and that the attached schedule will be implemented to address the findings of the field evaluation.

Resolution No. 3
Fernald Preserve Natural Resource Trustees

DATED this 11th day of February, 2010.

United States Department of the Interior
U. S. Fish and Wildlife Service

A handwritten signature in cursive script, appearing to read "Dave DeVault", written over a horizontal line.

By: Dave DeVault, Reynoldsburg, Ohio Field Office

Resolution No. 3
Fernald Preserve Natural Resource Trustees

DATED this 11th day of February, 2010.

Ohio Environmental Protection Agency

A handwritten signature in black ink, appearing to read "Thomas A. Schneider". The signature is written in a cursive style with a large initial "T".

By: Thomas A Schneider, Fernald Project Manager

Resolution No. 3
Fernald Preserve Natural Resource Trustees

DATED this 11th day of February, 2010.

United States Department of Energy

By: Ray Plienness, Director of Site Operations, Office of Legacy Management

**Fernald Natural Resource Trustee
Field Walkdown Summary and Path Forward
October 8, 2009**

Introduction and Methods

Field walkdowns of all ecologically restored areas at the Fernald Preserve were required pursuant to Section 5.1.1 of the final Natural Resource Restoration Plan (NRRP). The purpose of the walkdowns was to assess the condition of restored areas and develop a path forward for additional maintenance and repair.

Walkdowns took place over a three-day period, from July 13 to July 16, 2009. The sequence of projects evaluated was based on geographical proximity rather than chronological order. The sequence of walkdowns is shown below:

<u>Day</u>	<u>Project Area</u>
July 13	Northern Pine Plantation Wetland Mitigation Phase I Borrow Area Area 1, Phase IV (Non-Design Area)
July 15	Former Silos Area Paddys Run East and adjacent Non-Design Areas Southern Waste Units
July 16	Former Production Area and adjacent Non-Design Areas Former Waste Pits Area Northern Woodlot and Wetland Mitigation Phase II Area 8, Phase II (Forest Demonstration Project) Paddys Run West and adjacent Triangle Area

Representatives from Ohio EPA and DOE took part in all field walkdowns. An overview of the specific goals and objectives for each restoration project was provided in the field to the Trustees. Field notes were recorded for each project area on aerial photos.

Walkdown Summaries

A summary of field notes for each project area is provided below. The attached figure also provides a consolidated summary of field notes. Project-specific recommendations will be consolidated and incorporated into the Restored Area Management Plan (RAMP), which is required pursuant to Section 3.1.8 of the NRRP.

Northern Pine Plantation

Vegetation establishment is robust throughout the project area. While the original goal of the project was primarily forest restoration, some areas have been more successful in establishment of prairie and wetland habitats. In the context of adaptive management, this change is fine, but it will require a change in management approach. It is suggested

that the western portion of the North Pines be added to the burn rotation in the next year or two. If forest restoration is still desired in portions of the project area, dormant bare root seedlings may be installed to increase woody stem density. The deer fence can be removed from the cottonwood grove area within the northern pine plantation. It is unlikely deer browse could significantly effect this area at this stage of development.

Wetland Mitigation Phase I

Wetland establishment in all basins appeared to be progressing well. A diverse mix of native wetland vegetation was observed throughout the project area. Management needs to focus on invasive species control. Phragmites was observed in two basins, and several species of invasive trees and shrubs have taken root along the wetland berms. It was suggested that Basin 8 be added to the wetland mitigation monitoring program. This basin has a large stand of prairie cordgrass, an obligate native wetland species. In addition to the invasive shrubs in the upland areas a number of areas had crown vetch expanding and needing control. Prior efforts at thistle control have been very effective.

Borrow Area

The wetlands on the northern end of the borrow area are progressing well. Hydrology and vegetation appeared adequate, with the notable exception that prairie cordgrass was lacking. This species transplants well, so it was suggested that "buckets" of cordgrass be brought to the basins from elsewhere on site.

Several portions of the basin area were sparsely vegetated. These areas were some of the last blocks of the site to be seeded prior to closure. A number of native forbs and grasses are present, and it was agreed that the best course of action is to wait for a year and re-check the area in 2010. Similar areas have flourished after several years of relatively little growth. One possible management approach in the future, if cover and diversity don't increase, would be prescribed burning followed by broadcast seeding of additional species.

The upland prairie and savanna area is well established. It is an ideal candidate for prescribed burning next spring.

Area 1, Phase IV (Non-Design Area)

This area showed much improvement over previous years. A good amount of seeded grasses and forbs are present across most of the project area. Several wetland areas are also forming. This area is another candidate for prescribed burning. Some herbaceous non-natives are present, which suggests that a prescribed burn would benefit this area.

Former Silos Area

This area has proven difficult since it was seeded in 2006. For upland areas, vegetation establishment is improving, but a clear difference between soil-amended areas and non-amended areas was observed. The non-amended area (approximately 2 acres) does have enough vegetation established that it should not be completely re-done. Instead, the area could be mowed, "top dressed" with yard waste compost and broadcast seeded or drilled

in the fall. Other areas of the project area where soil amendment was applied should be left alone, with the exception of continued invasives control.

Wetland areas have benefited from seeding and volunteer vegetation. The two basins west of the Visitors Center parking area would benefit from onsite transplant of prairie cordgrass and bur reed. Woody vegetation survival is surprisingly good. In addition, a number of volunteer recruits (e.g. sycamores, cottonwoods) were observed.

Paddys Run East and adjacent Non-Design Areas

This area is generally well-established with diverse native vegetation. The main issue across the project area is control of woody and herbaceous invasive species, and prairie maintenance in the South Field area. Invasives include honeysuckle, Canada thistle, teasel, and a large patch of reed canary grass that is located on the eastern portion of the South Pines area. The reed canary grass will require a combination of spraying, mowing and burning. Additional candidates for prescribed burn include the two prairies located in the South Field area.

The use of deer enclosure fencing clearly improved both woody and herbaceous survival. A number of fenced areas should remain maintained. However, at this time, the enclosure fencing around the South Pines can be removed or reduced in size. This area includes the western end of the reed canary grass infestation, which is also encroaching on a diverse emergent wetland that has formed between the South Pines and the footprint of the former Storm Water Retention Basin.

In the South Field, the question was raised about the need for maintenance (e.g. mowing) of the current pasture footprint. It was observed that the mowed buffer along Willey Road is much larger than is necessary. It will become more and more distracting from the "preserve" image as the site continues development into mature habitats. There is very little ecological benefit to mowed fescue fields that are currently present. Actions taken to expand the prairie habitat and reduce the mowing area will reduce maintenance costs and improve habitat, but are not required rework under this resolution. The discussion is provided here as a reminder of this potential expansion opportunity.

Southern Waste Units

The walkdown of the Southern Waste Units (SWU) showed sufficient to highly successful vegetation establishment across the project area. A portion of the SWU consists of pure sand. The area has been susceptible to erosion and subsequent vegetation establishment has historically been very difficult. The area has stabilized, and no soil disturbance is recommended. However, a xeric seed mix should be broadcast seeded to assist with herbaceous cover across the area. A more general discussion on erosion issues took place, and it was agreed that the concern is with respect to newly-formed and/or continuing erosion. Older rills and gullies that have become revegetated and appear stable should be left alone so re-disturbance of the now vegetated areas does not occur. One small area that does need attention is located immediately north of the former active flyash pile. Some reseeded and dormant cutting installation is needed to stabilize this bank.

No issues were observed with respect to woody vegetation, except to maintain deer enclosure fencing. The remainder of the SWU will need continued herbaceous invasives control. Again, a combination of spot spraying, mowing and burning is recommended.

Former Production Area and adjacent Non-Design Areas

With respect to prairie establishment, this project has varying degrees of success. Some areas have robust native communities while other areas have struggled to get any type of vegetation established. There appears to be a correlation between the soil amendment, application method, and the amount of compaction. The NRTs agreed that large portions of the project area are doing well, but will require continued maintenance and prioritization through prescribed burning and/or mowing, as well as spot-spraying for noxious weeds. For some areas, a "top dressing" approach similar to that described for the Silos Area is appropriate. The location of a former haul road will need to be plowed and disked in order to break compaction. Still other areas (i.e. shallow depressions) may only need prairie cordgrass seeding/transplanting.

Former Waste Pits Area

This area has seen much improvement in vegetation establishment over the past several years. Slope stabilization is the primary focus in much of this very hilly terrain. The north face of the former solid waste landfill would benefit from dormant cuttings. In the Pit 3 area, matting from a previous erosion repair effort is no longer functioning as intended and it was agreed that accessible portions of matting should be removed, with the remainder abandoned in place.

Northern Woodlot and Wetland Mitigation Phase II

No specific findings were noted in these areas, with the exception of continued invasives control and inclusion of the constructed wetland basins in the current wetland mitigation monitoring program.

Area 8, Phase II (Forest Demonstration Project)

This older restored area is showing good forest development. Management activities include the removal of all remaining tree tubes (most trees have outgrown them), invasives control, and prairie maintenance through prescribed burn/mowing.

Paddys Run West and adjacent Triangle Area

This project, which covers a long stretch of property along Paddys Run Road, includes a variety of forest expansion and prairie establishment projects. As with other areas onsite, prairie areas show varying degrees of success, and all will require some form of maintenance. For forest areas, removal of deer tubes and maintenance of deer enclosure fencing should continue.

The "triangle area" west of Paddys Run Road was also evaluated. This area is an ideal candidate for additional ecological restoration. A portion of the triangle area was seeded in prairie grasses and forbs following removal of the rail line during Closure. The remaining acreage within this footprint may be converted to wetland and/or prairie

habitat. Though not required as rework under the walk down, this discussion is included to highlight the benefit of such an action if the trustees choose to pursue it.

Discussion

Based on the walkdown summaries above, the focus of most activities within ecologically restored areas consists primarily of prairie management, invasives control, wetland vegetation establishment, and woody vegetation establishment. Each of these concepts is discussed briefly below. As stated above, details regarding field implementation are provided in the RAMP. The attached figure shows the proposed locations for these management activities.

Prairie Management

Prairie management is a broad term that encompasses maintenance of existing stands, enhancement of marginal areas, and establishment of new prairies. During the field walkdowns, a three-tiered approach was formulated to address the needs of the site. Prairie areas are designated as one of the following: Maintain, Rework, or Establish. “Maintain” consists of prescribed burning and/or mowing rotations. “Rework” will be dependent on the specific area, but will require the incorporation of soil amendments, mowing, and/or interseeding. “Establish” involves all the steps required to conduct an initial prairie seeding. This approach is further divided into disturbed areas and intact areas. Disturbed areas will require extensive additions of soil amendment and plowing/disking to reduce compaction. Intact areas are pastures where no remediation took place. Topsoil is present, so prairie establishment will consist mostly of converting existing stands of cool-season grasses to a prairie community.

Invasives Control

Invasives control consists of reduction or removal of non-native, invasive vegetation. Control efforts include both woody and herbaceous vegetation. The main species of concern at the Fernald Preserve include Canada thistle, teasel, crown vetch, reed canary grass, phragmites, garlic mustard, multiflora rose, and several species of honeysuckle. Control activities are specified in the RAMP, and consist of herbicide application, burning, mowing, and/or physical removal. The prairie management approach above will help limit invasives in prairie areas. However, additional herbicide applications and/or physical removal will continue to be needed. As the attached figure shows, wetland areas and forested areas are subject to sustained efforts to limit invasive vegetation. Note that the attached figure is not all-inclusive with respect to invasives control. The areas noted were specifically brought up during walkdowns. Additional invasives control areas are located across the site.

Wetland Vegetation Rework

Wetland creation was incorporated into a number of restoration projects across the Fernald Preserve. Whenever possible, topography and hydrology were enhanced to add wetland habitat. Many of these areas are included in a monitoring program that has been developed pursuant to Section 5.1.1 of the NRRP. The Wetland Mitigation Monitoring Plan will ensure that DOE meets its compensatory wetland mitigation requirements. However, a variety of additional wetland areas have been created simply from the

standpoint of habitat variety. These areas may be adaptively managed to promote wetland vegetation establishment. Seeding and onsite transplant of wetland plants can be used where appropriate to increase wetland vegetation.

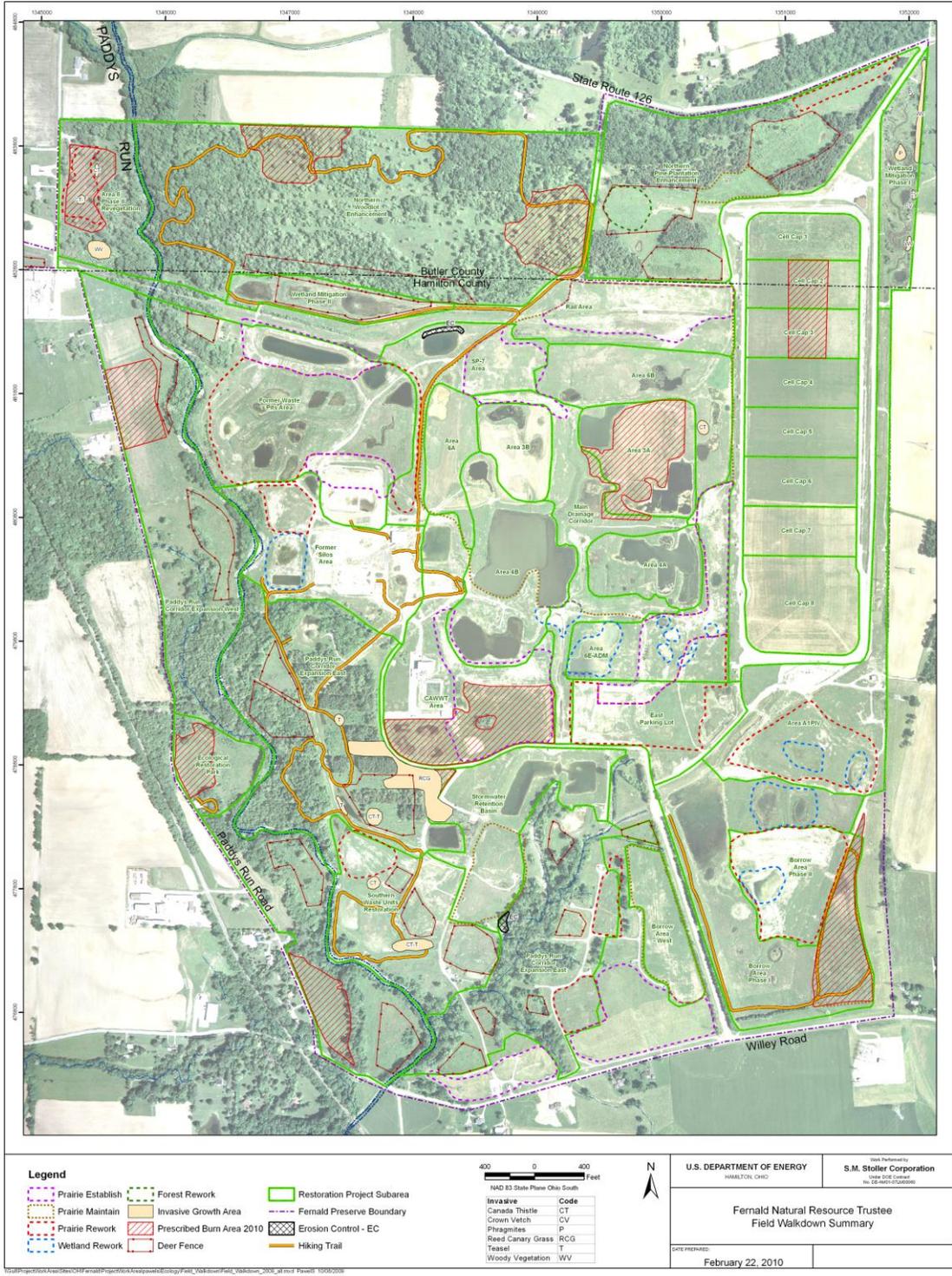
Woody Vegetation Establishment

In general, forest restoration efforts at the Fernald Preserve appeared to be progressing as planned. No large-scale planting activities were determined necessary. However, it was observed that a few areas may benefit from installing bare root seedlings. In addition, the use of seeds to increase woody vegetation diversity has also been discussed. The attached figures designate the potential areas for rework. The continued use of deer exclosure fencing is essential to protect planted and seeded vegetation, as well as assist with establishment of volunteer recruits. Where fencing is no longer providing any benefit, it should be removed from the field.

Path Forward

Upon concurrence of the findings and approach above, DOE will work to finalize the RAMP and implement recommendations in 2010. Initial efforts will involve an increase in the prescribed burn acreage for spring 2010. The attached figure shows potential 2010 burn areas.

Repair, maintenance and rework activities will be enveloped within the existing restored area maintenance program at the Fernald Preserve, as specified in the Legacy Management and Institutional Controls Plan. Site personnel will conduct most activities. However, subcontractor support may be required for certain tasks. All activities will take place pursuant to site work authorization processes.



NRT Field Walkdown Summary and Path Forward

General Area	Specific Area	Recommendation/Action	Target Date	Comments
Northern Pines	Western Portion	Prescribed burning in 1 – 2 years.	na	allow woody vegetation to establish
		Enhance with dormant root seedlings to increase woody stem density	December 2010	
	Cottonwood Grove	Remove deer fence	August 2010	
Wetland Mitigation Phase I	all areas	invasive species control	ongoing	continue as part of sitewide program
Borrow Area	North Phase I basins	transplant prairie cordgrass	June 2010	
	Upland Prairies	Prescribed burn	March 2010	burn plan prepared
Area I, Phase IV		Prescribed burn	March 2011	
Former Silos Area	Non-amended areas	“Top dress” soils and reseed	September 2010	
	Wetland basins	transplant prairie cordgrass and burreed	June 2010	
Paddys Run East and Non Design Areas	NDA areas east of the South Pines	Prescribed burn	March 2011	
	Southern pines	Remove/reduce deer fence	in process	
	South Field	reduce pasture footprint and replace with prairie	2010 - 2012	Not required as part of walkdown.
Southern Waste Units	Sandy areas	Seed with xeric seed mix	December 2010	
	North of former active flyash pile	Reseed and plant dormant cuttings to stabilize bank.	December 2010	
Former Production Area	Former haul road	Plow, disc, top dress and seed.	September 2010	
Former Waste Pit Area	North face of former solid waste landfill	Plant dormant cuttings	December 2010	
	Pit 3 area	Remove accessible portions of erosion matting.	complete	
Area 8, Phase II	forest patches	Trees tube removal	in process	
	prairie/savanna area	Prescribed burn	March 2010	burn plan prepared
Paddys Run West	forest patches	Tree tube removal	July 2010	

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