

WETLAND REFORESTATION MITIGATION ANNUAL MONITORING REPORT

**RENTSCHLER FIELD MONITORING REPORT 2 OF 3
USACE PERMIT NO. CENAE-R-2000-00741**

December 16, 2011

MMI #3097-01-23



Prepared for:

State of Connecticut
Office of Policy and Management
Adriaen's Landing/Rentschler Field Project Office
100 Columbus Boulevard, Suite 501
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Prepared by:

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TABLE OF CONTENTS

	<u>Page</u>
1.0 Project Overview	1
2.0 Summary of Problems	6
3.0 Monitoring Summary.....	6
3.1 Soil Analysis	6
3.2 Hydrology Analysis	7
3.3 Vegetation Analysis.....	7
3.4 Wildlife and Fishery Analysis	8
3.5 Wetland Functions and Values Analysis	8
3.6 Remediation Requirements.....	10
4.0 Success Standards	10
4.1 Success Standard One.....	10
4.2 Success Standard Two	11
4.3 Success Standard Three	11
4.4 Success Standard Four.....	11

LIST OF TABLES

Table 1	Wetland Reforestation Mitigation Plant List.....	5
Table 2	Functional Evaluation of Wetland Reforestation Mitigation Project for Rentschler Field – U.S. Army Corps of Engineers Methodology	9
Table 3	Wetland Reforestation Mitigation Vegetation Zone Survivability Rates..	10

LIST OF APPENDICES

Appendix A	Copy of Permit and Mitigation Conditions
Appendix B	As-built Plan of Wetland Mitigation Area
Appendix C	Vegetation Lists and Plot Data
Appendix D	Photo Log
Appendix E	Mitigation Work Start Notification Form

1.0 PROJECT OVERVIEW

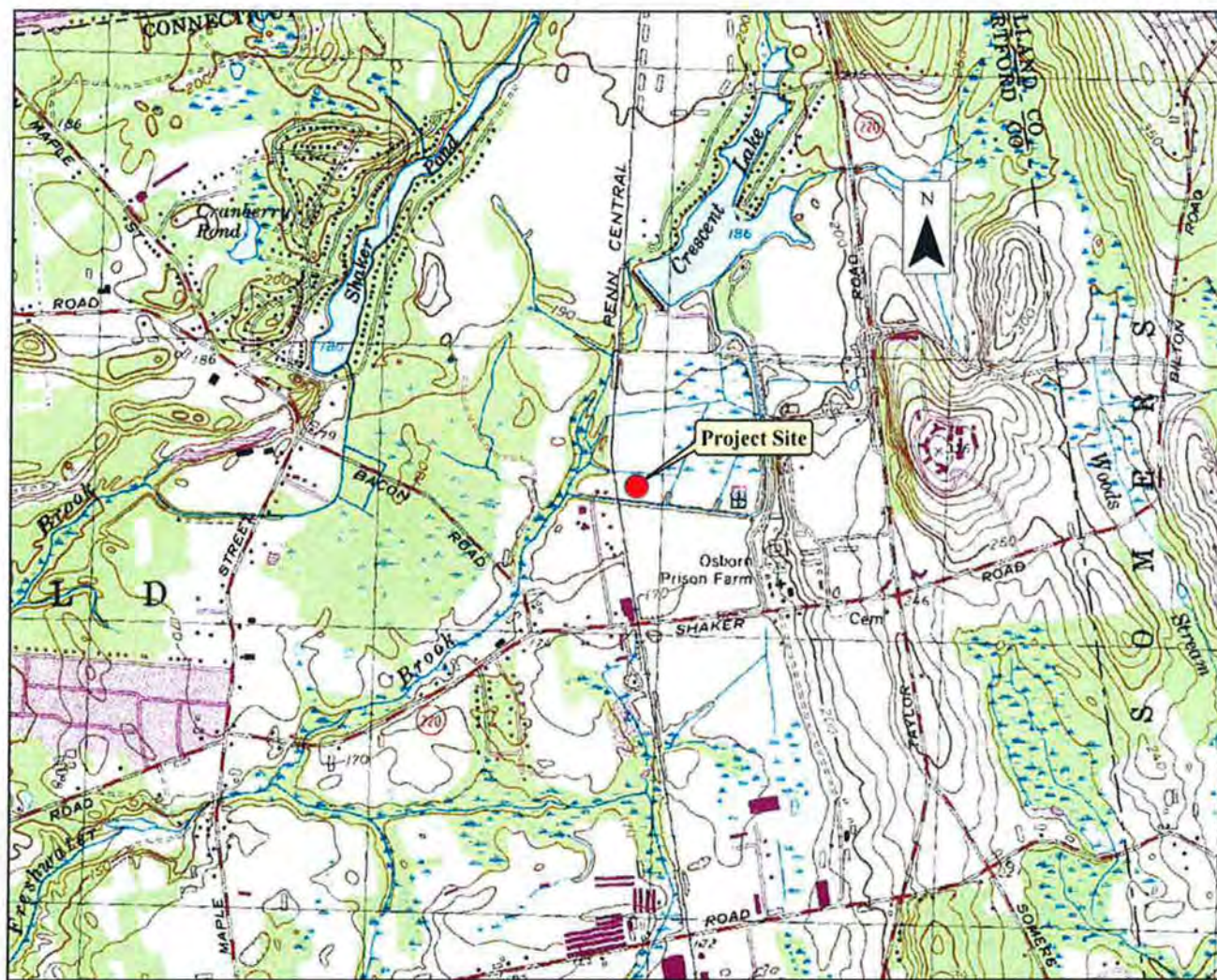
On behalf of the State of Connecticut Office of Policy and Management Office (OPM), Milone & MacBroom, Inc. (MMI) has prepared the second of three annual wetland mitigation monitoring reports for the Rentschler Field approved Grassland Bird Habitat/Wetland Reforestation Mitigation project located in Enfield, Connecticut.

On March 27, 2001, the U.S. Army Corps of Engineers New England District (USACE) granted permit number CENAE-R-2000-00741 for the construction of Rentschler Field, which included the creation of approximately two acres of wet meadow, shallow marsh, and deep marsh wetlands at the East Hartford, Connecticut site and the establishment of grassland bird habitat and a wetland reforestation mitigation area in Enfield, Connecticut. The wetland reforestation mitigation area is the subject site of this monitoring report. The March 2001 permit approval involved the reforestation of approximately three acres of old field and wet meadow wetland located on the State of Connecticut Somers Prison facility.

On March 14, 2002, the USACE approved a revised grassland bird mitigation/wetland reforestation mitigation plan for the Enfield site. Per discussions with the USACE and United States Fish & Wildlife personnel, it was agreed that OPM would reforest an existing five-acre wet meadow area located south of the originally approved three-acre site to offset the conversion of wooded wetlands to scrub shrub wetlands that had been previously approved under permit CENAE-R-2000-00741. The original reforestation concept was for a three-acre area; however, upon further site review by regulators and OPM, it was found that a five-acre wet meadow adjacent to the originally approved area would be better suited for the reforestation mitigation project. The number of plantings (1,200 plants) remained the same although the site acreage increased between sites.

The wetland reforestation area is part of a 100-acre fallow agricultural field that lies north of Route 220, south of Crescent Lake, and immediately east of a railroad spur line. Freshwater Brook is located west of the spur line. Figure 1 illustrates the location of the wetland reforestation mitigation project site on a USGS quadrangle map.

Figure 1



The project area is entering into the earliest phases of forest succession. The following color aerial photo, Figure 2, was downloaded from the 2010 <http://maps.live.com> website and represents the wetland reforestation mitigation area. This aerial photo was taken in late December 2006.

Figure 2



Five-Acre Wetland Reforestation Area – December 2006 Aerial

To increase the successional transition process, OPM planted 1,200 trees and shrubs on the five-acre site and installed protective deer fencing along its periphery. It should be noted that the reforestation project only called for planting of supplemental woody vegetation. No regrading and/or modifications to existing soil and/or hydrologic conditions were completed as part of the reforestation mitigation plan.

Figure 3 represents a graphical representation of the wetland reforestation vegetation zones as illustrated on the approved mitigation plans.

Figure 3



Representative Vegetation Zones Within Reforestation Mitigation Area

Plant Zone 1 represents the wetter portions of the existing field and is dominated by reed canary grass, woolgrass, sensitive fern, and pockets of goldenrod. Zone 2 represents a slightly drier zone than Zone 1 and is dominated by goldenrod, wild grape, grasses, and sensitive fern. Zone 3 is the driest zone and includes shagbark hickory, staghorn sumac, quaking aspen, goldenrod, and grasses.

Table 1 represents the wetland reforestation mitigation plant list as approved by the USACE.

TABLE 1
Wetland Reforestation Mitigation Plant List

Stratum	Common Name	Scientific Name	Size	Planting Zones (Number of Plants)		
				Plant Zone 1 1.5 acre	Plant Zone 2 1.9 acre	Plant Zone 3 1.6 acre
Trees	Red Maple	<i>Acer rubrum</i>	4-6'	40	50	80
	Gray Birch	<i>Betula populifolia</i>	4-6'		50	80
	Pin Oak	<i>Quercus palustris</i>	4-6'	40	50	80
	American Sycamore	<i>Platanus occidentalis</i>	4-6'		40	80
	Green Ash	<i>Fraxinus pennsylvanica</i>	4-6'	40	40	80
	Silver Maple	<i>Acer saccharinum</i>	4-6'	40	40	
	River Birch	<i>Betula nigra</i>	4-6'	40	40	
	Swamp White Oak	<i>Quercus bicolor</i>	4-6'	40	40	
Shrubs	Highbush Blueberry	<i>Vaccinium corymbosum</i>	3-4'	40	10	
	Swamp Azalea	<i>Rhododendron viscosum</i>	3-4'	30	10	
	Northern Arrowwood	<i>Viburnum dentatum</i>	3-4'	30	10	
	Silky Dogwood	<i>Cornus amomum</i>	3-4'	30	10	
	Meadowsweet	<i>Spiraea latifolia</i>	3-4'	30	10	
Total				400	400	400

In October 2008, OPM completed the wetland reforestation mitigation project as approved under the March 14, 2002 letter. MMI visited the site in May 2009 and found that 196 trees perished over the winter, including sycamores and river birch. In July 2009, the dead trees were replaced with pin oak and swamp white oak, and existing deer fencing was repaired.

Postconstruction monitoring of the wetland reforestation mitigation area is to be done every year for the first three full growing seasons. This wetland monitoring report was completed using the USACE monitoring protocol and the four success standards. OPM has completed the second year of monitoring as specified under the USACE permit conditions. This monitoring report serves as the second of three annual monitoring reports to help satisfy the existing permit conditions.

2.0 SUMMARY OF PROBLEMS

In 2009, OPM replaced 196 dead trees, and the replacement trees are healthy and growing. There have been no major problems within the mitigation area in 2010 and/or 2011. The trees and shrubs are still present and growing and over time will become the dominant stratum. The existing herbaceous vegetation including goldenrod and reed canary grass is competing with the trees and shrubs but does not appear to be having any significant impact on plant health and/or vigor. Deer browse is still ongoing even though deer fencing was installed along the periphery. The deer prefer to feed on silky dogwood and northern arrowwood shrubs and red maple, silver maple, and green ash trees. The deer do not appear to feed on the highbush blueberry shrubs or the pin oak, swamp white oak, or gray birch trees. Multiflora rose and autumn olive shrubs were present within the reforestation area but were removed during planting. There may be new seedlings starting, but they are not prevalent at this time. If they do become prevalent, OPM will remove said species.

3.0 MONITORING SUMMARY

MMI conducted a spring site visit on June 11, 2011 and a late growing season site visit on October 7, 2011. MMI established vegetation plot areas and photo stations within each zone. A photo log of our 2011 site visits is attached as Appendix D.

3.1 Soil Analysis

The soils were evaluated during the 2008 planting using a Dutch auger. The soils were not evaluated in 2011 because there has been no change to grades and/or hydrology within this old field. In 2008, the soils observed within the wetland reforestation mitigation area showed a distinct abrupt boundary between the A horizon and B horizon indicating a plowed layer. Several soil cores were taken and examined from within the wetlands. The A horizon ranged in depth from 0 to 10 inches thick and consisted of 10YR 3/2 fine sandy loam soils. Iron concentrations were present but were not a prominent feature within the upper soil horizon. The B horizon ranged in depth from 10 to 24 inches and consisted of 10YR 5/4 fine sandy loam and

in wetter areas 10YR 5/2 fine sandy loam. The C horizon showed signs of iron concentrations and depletions. Overall, the wetland reforestation mitigation area has moderately well drained, somewhat poorly drained, and poorly drained soils. Not all the soils within the mitigation area would classify as being hydric.

3.2 Hydrology Analysis

The existing hydrology within the reforestation mitigation area has a seasonal range. The old field is bordered to the north, east, and south by man-made drainage ditches/watercourses. The wetter portions of the old field, which are slightly depressed as compared to other surrounding topography, may on occasion have standing water, typically less than three inches in depth. Other portions of the old field have soils that are either saturated to the surface or have an active ground water table within 18 to 20 inches of the soil surface. OPM did not propose to change the existing hydrology within the old field. The existing hydrology has remained unchanged by the planting of the trees and shrubs.

3.3 Vegetation Analysis

MMI established three vegetative plots within the wetland reforestation mitigation area. Vegetation Plot #1 represents Plant Zone 3, the driest plant community; Vegetation Plot #2 represents Plant Zone 1, the wettest plant community; and Vegetation Plot #3 represents Plant Zone 2, the transition zone between the wetter and drier plant communities. Vegetation plot data is attached as Appendix C.

During the 2011 field visits, the herbaceous vegetation within all three plant zones was lush, dense, and green. The vegetation plots are 100% dominated by herbaceous plants. Vegetation Plot #1 is dominated by goldenrod and grasses; Vegetation Plot #2 is dominated by reed canary grass, sensitive fern, and woolgrass; and Vegetation Plot #3 is dominated by goldenrod and grasses. Trees and shrubs within all vegetation plots grew a little over the 2010 growing season but do not dominate the stratum in any of the vegetation plots. It will be several years before any of the trees become a dominant stratum plant.

The overall health and vigor of the woody plants and herbaceous plants during the spring and summer were good.

3.4 Wildlife and Fishery Analysis

Wildlife resources were also surveyed during both 2011 field visits. White tailed deer and red fox scat were observed during the spring field visit. Insects, especially bees, wasps, dragonflies, flies, mosquitoes, and butterflies, were abundant during the end of the growing season field visit.













Several species of birds were observed utilizing the old field including swamp sparrow, chipping sparrow, eastern kingbird, northern mockingbird, American goldfinch, American robin, red tailed hawk, common crow, and American blue jay. Overall, MMI observed predominantly upland-dependent wildlife using the wetland mitigation area.

3.5 Wetland Functions and Values Analysis

Wetlands and watercourses are generally accepted as performing certain hydrologic and ecological functions that provide social and economic values. An evaluation of the on-site wetlands' capability to perform these functions and provide these values is summarized in Table 2. The methodology follows the USACE's Wetland Functions and Values approach.

TABLE 2

**Functional Evaluation of Wetland Reforestation Mitigation Project for Rentschler Field
U.S. Army Corps of Engineers Methodology**

	Functions	Existing Conditions
	Ground Water Recharge / Discharge	Yes. High ground water table is a primary contributor to the wetlands' hydrology.
	Floodflow Alteration (Storage and Desynchronization)	No. Wetland not located within a 100-year flood zone or on line with a watercourse.
	Fish and Shellfish Habitat	No. Old field does not provide suitable habitat for fish and/or shellfish.
	Sediment / Toxicant Retention	No. Old field wetland is flat, not on line with a watercourse, and does not have any stormwater outfalls being discharged into the field.
	Nutrient Removal / Retention / Transformation	Yes. Old field has dense vegetation and is capable of absorbing nutrients generated by annual decaying vegetation.
	Production Export (Nutrient)	No. Reforestation wetland not on line with watercourse.
	Sediment / Shoreline Stabilization	No. Wetland is an old field and is not on line with a watercourse or pond.
	Wildlife Habitat	Yes. Old field provides valuable habitat for upland-dependent wildlife. Wetland-dependent wildlife habitat is limited in this current field condition.
	Recreation (Consumptive and Nonconsumptive)	No (access restricted)
	Educational Scientific Value	No (access restricted)
	Uniqueness / Heritage	No. Old field and early successional habitat are not unique to this watershed.
	Visual Quality / Aesthetics	No. Area looks like an overgrown old field.
ES	Endangered Species	No

3.6 Remediation Requirements

For the most part, the wetland reforestation mitigation area is functioning as intended. There are no issues regarding plant survival, plant diversity, erosion control, and/or hydrology. Autumn olive and multiflora rose were removed in 2008 during the initial planting of the trees. If these shrubs recolonize the reforestation area, then they will be removed. Remediation efforts for these plant species will continue to be conducted as necessary.

4.0 SUCCESS STANDARDS

This section of the report examines the four success standards as specified by the USACE.

4.1 Success Standard One

This success standard requires at least 60% plant survival rate within each planting zone. Table 3 presents a summary of the number of trees and shrubs planted in 2008 compared to the number of trees and shrubs found during the spring 2011 visit within all the three vegetation zones.

TABLE 3
Wetland Reforestation Mitigation Vegetation Zone Survivability Rates

Stratum	Common Name	2008 Plant Zone 1	2011 Plant Zone 1	2008 Plant Zone 2	2011 Plant Zone 2	2008 Plant Zone 3	2011 Plant Zone 3
Trees	Red Maple	40	28	50	25	80	40
	Gray Birch			50	44	80	60
	Pin Oak	40 + (10)	50	50 + (17)	65	80 + (38)	95
	American Sycamore			40	14	80	8
	Green Ash	40	38	40	30	80 + (38)	97
	Silver Maple	40	30	40	20		
	River Birch	40	20	40	15		
	Swamp White Oak	40 + (10)	50	40 + (10)	50		
Shrubs	Highbush Blueberry	40	20	10	5		
	Swamp Azalea	30	10	10	3		
	Northern Arrowwood	30	20	10	8		
	Silky Dogwood	30	25	10	9		
	Meadowsweet	30	10	10	2		
Total Plants		420	301	427	290	476	300
<i>Plant Survival Rates</i>		72%		68%		63%	

Note: Ten trees were added in 2009 to supplement the trees lost over the 2008 winter.

Although 196 trees were lost during the 2008 winter, the replacement trees fared much better during the 2009 winter. As shown in the above table, each of the three vegetation zones in 2011 is meeting the 60% plant survival rate.

4.2 Success Standard Two

This success standard requires that the intended wetlands have at least 80% cover of native plant material. As shown in Appendix C of this report, all of the vegetation plots within the three vegetation zones are meeting or exceeding the 80% native vegetative cover density after one full growing season. In fact, all of the vegetation plots had over 95% vegetative cover, which includes trees, shrubs, and herbaceous zones. The herbaceous zone dominates the vegetation plot coverage values.

4.3 Success Standard Three

This success standard requires that invasive species as specified by the USACE should be controlled during the monitoring period. As stated previously, OPM removed autumn olive and multiflora rose during the 2008 plant installation. If these species recolonize areas within the reforestation mitigation area, they will be actively managed.

4.4 Success Standard Four

This success standard requires that all slopes, substrates, and constructed features within and adjacent to the mitigation site be stabilized. During our 2011 field visits, all areas within the mitigation area (e.g., slopes, inlet/outlet control structures) appeared stable, and no additional remediation measures are required.

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APPENDIX A

Copy of Permit and Mitigation Conditions



**BAYSTATE
ENVIRONMENTAL
CONSULTANTS
INC.**

Civil Engineers
Environmental
Scientists

July 18, 2001

Army Corps of Engineers
696 Virginia Road
Concord, MA 01742-2751
Attn: Stephen DiLorenzo

Re: Revised Wetland Planting Plan for
Grassland Bird Habitat Mitigation Site
Complex One Department of Corrections Facility
Enfield & Somers, CT
BEC File No. 99-1210D

Dear Mr. DiLorenzo:

As per the request of the Army Corps of Engineers, we have revised and provided more detail on the proposed planting of wetland trees and shrubs in the vicinity of the grassland bird habitat mitigation site in Enfield & Somers, CT. This submittal supplements the application under PGP Category 2 for the proposed construction of a stadium at Rentschler field in East Hartford and the direct wetland impacts at that site and secondary wetland impacts at the grassland mitigation site. The proposed grassland habitat enhancement provides mitigation for utilization of grassland habitat in East Hartford and will provide potential habitat for State-listed birds including grasshopper sparrow, savannah sparrow, and eastern meadowlark.

As part of the habitat enhancement, there will be alteration of the vegetation on 2.2± acres of wetland, including maintenance on a semi-annual basis. This wetland alteration will only involve the removal of the trees and tall saplings/shrubs that would inhibit grassland bird species usage of the area. The wetland hydrology and soils will not be altered; no dredging or filling of wetlands will take place. The geographic extent of wetlands will be preserved; the only modification of the wetland will be in the vegetative composition, which would be maintained at shrub height. All work within wetlands would be done by hand cutting with cable removal of the trees, using a raised lead to minimize furrowing during removal of the trees. The contractor will coordinate with DEP's Inland Water Resources Division regarding appropriate measures to control erosion and sedimentation.

As per discussions and field review with the Army Corps of Engineers and U.S. F&W, a 5-acre area of existing wet meadow in proximity to Freshwater Brook will be planted with trees and shrubs to offset the conversion of wooded wetland to shrub/scrub wetland. The original concept shown in Figure 4 of the 3-15-01 correspondence was for a 3-acre area, which has been modified with additional planting details and relocation of the site to better reflect existing site regrowth in the former fields (Figure 1). The number of planting is still based upon the 1200 plants proposed for the 3-acre site. The enlarged area reflects only the logical shape of size of the field to be planted with the same number of trees and shrubs.

The currently proposed location of the wetland reforestation area is shown in Figure 1. This area is part of a 100+/- acre fallow agricultural field that lies north of Route 220, south of Crescent Lake, and immediately east of a railroad spur line. Freshwater Brook is located west of the spur line. This field is entering into the earliest phases of forest succession with some early successional shrub species. Dominant herbaceous species include soft rush, goldenrod, reed canary grass, and blue vervain and shrub species include silky dogwood, speckled alder and multiflora rose (Table 1).

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Other Office:
East Hartford, CT

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Table 1. Vegetative Composition of Wetland Reforestation Area		
Common Name	Scientific Name	Frequency
Reed Canary Grass	<i>Phalaris arundinacea</i>	Common
Soft Rush	<i>Juncus effusus</i>	Common
Dark Green Bulrush	<i>Scirpus atrovirens</i>	Common
Carex species	<i>Carex stipata; C. stricta</i>	Common
Umbrella Sedge	<i>Cyperus strigosus</i>	Common
Sensitive Fern	<i>Punetilobula sensibilis</i>	Common
Blue Vervain	<i>Verbena hastata</i>	Common
Goldenrod Species	<i>Solidago spp.</i>	Common
Red-Osier Dogwood	<i>Cornus stolonifera</i>	Common
Jewelweed	<i>Impatiens capensis</i>	Common
Black-eyed Susan	<i>Rudbeckia hirta</i>	Common
Daisy Fleabane	<i>Erigeron annuus</i>	Common
Queen Anne's Lace	<i>Daucus carota</i>	Common
Raspberry	<i>Rubus spp</i>	Occasional
Curled Dock	<i>Rumex crispus</i>	Occasional
Silky dogwood	<i>Cornus amomum</i>	Occasional
Speckled alder	<i>Alnus rugosa</i>	Occasional
Multiflora rose	<i>Rosa multiflora</i>	Occasional

Work within this area will consist of planting of 1200 individual trees and shrubs of various species to encourage the succession of a wet meadow area into wooded wetland. The planting schedule is presented in Table 2. The trees and shrubs will be planted in three different zones, reflecting minor differences in seasonal hydrology (Figure 2). The demarcation of the zones is approximate and planting will be supervised in the field by a wetlands scientist. Shrubs and trees will be planted in a generally random pattern within each zone. No long term maintenance is anticipated in this area, except to monitor tree and shrub survival within the first growing seasons following planting. Additional trees and shrubs will be planted to replace non-survivors as necessary to encourage transition to a wooded wetland.

Table 2. Wet Meadow Shrub and Tree Planting Schedule						
Growth Habit	Common Name	Scientific Name	Size	Planting Zone (Number of Plants)		
				Zone 1 1.5± acres	Zone 2 1.8± acres	Zone 3 1.6± acres
Trees	Red Maple	<i>Acer rubrum</i>	4-6'		100	200
	Gray Birch	<i>Betula populifolia</i>	4-6'		100	200
	Pin Oak	<i>Quercus palustris</i>	4-6'		100	
Shrubs	Highbush Blueberry	<i>Vaccinium corymbosum</i>	3-4'	80	20	
	Swamp Azalea	<i>Rhododendron viscosum</i>	3-4'	80	20	
	Arrowwood	<i>Viburnum dentatum</i>	3-4'	80	20	
	Silky Dogwood	<i>Cornus amomum</i>	3-4'	80	20	
	Meadowsweet	<i>Splirea alba</i>		80	20	
total				400	400	400



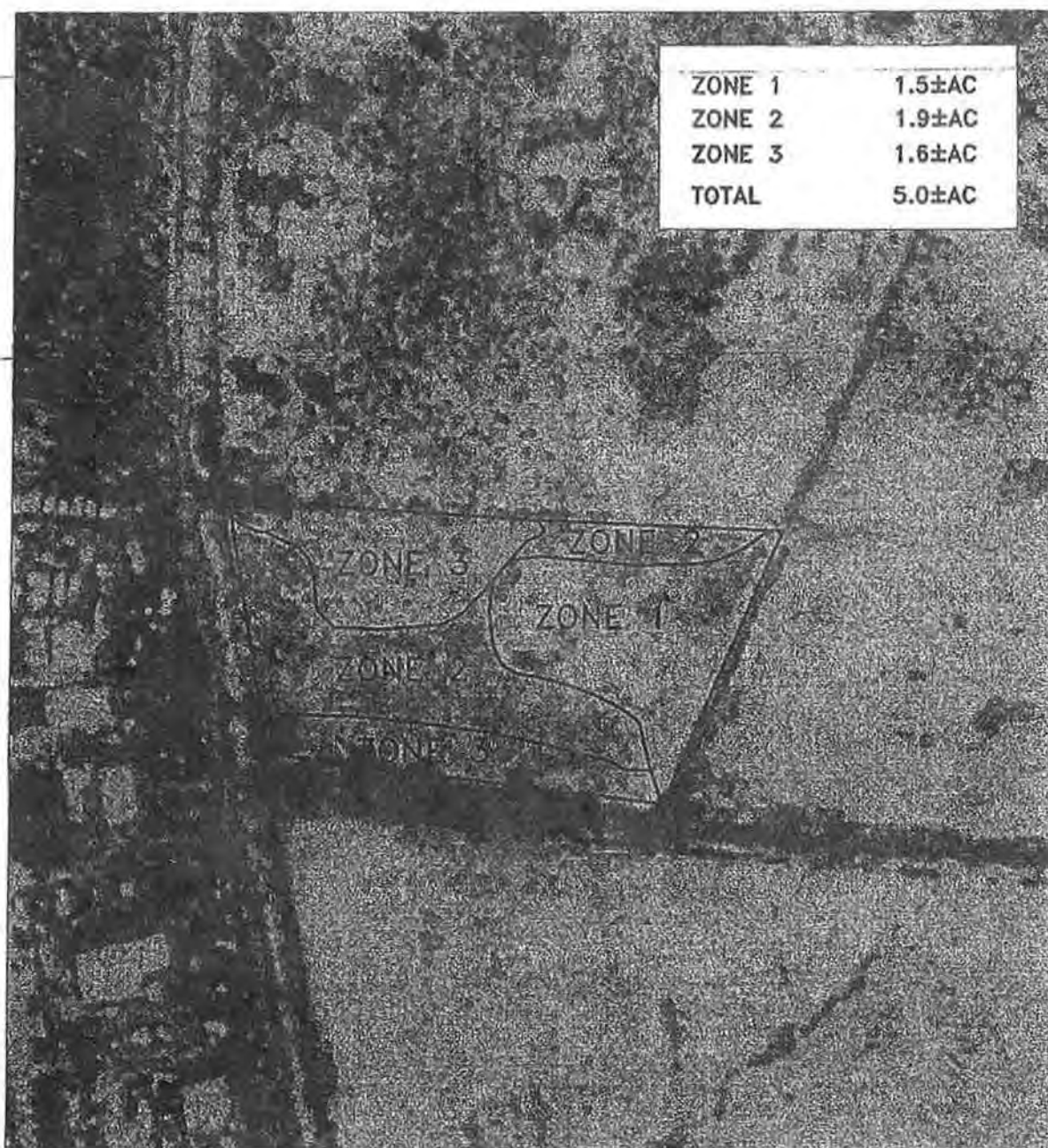
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LOCUS MAP
FOR
GRASSLAND BIRD HABITAT
MITIGATION PLAN

ENFIELD, CONNECTICUT

FIGURE 1



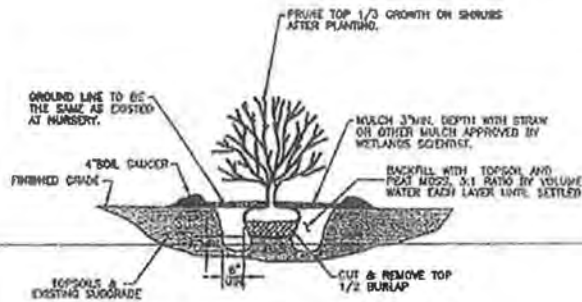
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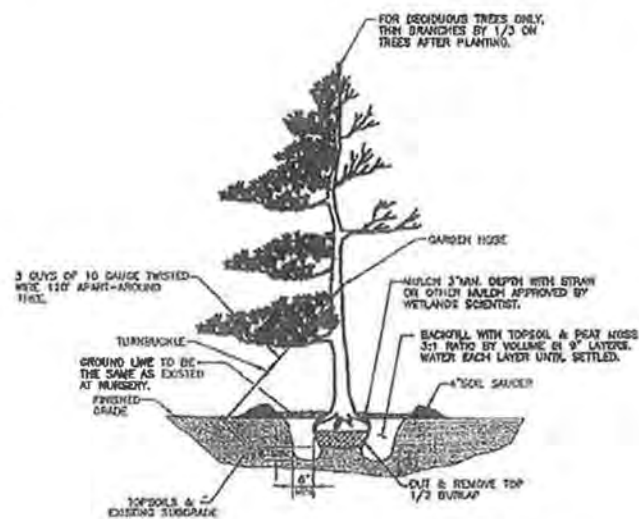
WETLAND PLANTING PLAN
FOR
GRASSLAND BIRD HABITAT
MITIGATION PLAN

ENFIELD, CONNECTICUT

FIGURE 2



SHRUB PLANTING DETAIL
NTS



TREE PLANTING DETAIL
NTS

DETAILS
FOR
GRASSLAND BIRD HABITAT
MITIGATION PLAN

ENFIELD, CONNECTICUT

FIGURE 3



**BAYSTATE
ENVIRONMENTAL
CONSULTANTS
INC.**

Civil Engineers

Environmental
Scientists

November 5, 2001

Army Corps of Engineers
696 Virginia Road
Concord, MA 01742-2751
Attn: Stephen DiLorenzo

Re: Second Revision to Wetland Planting Plan for
Grassland Bird Habitat Mitigation Site
Complex One Department of Corrections Facility
Enfield & Somers, CT
BEC File No. 99-1210D

Dear Mr. DiLorenzo:

As per the request of the comments of Greg Mannesto of the Fish and Wildlife Service, we have modified the planting list for the wetland trees and shrubs in the vicinity of the grassland bird habitat mitigation site in Enfield & Somers, CT. The revised Table 2 is presented below

Table 2. Revised Wet Meadow Shrub and Tree Planting Schedule

Growth Habit	Common Name	Scientific Name	Size	Planting Zone (Number of Plants*)		
				Zone 1 1.5± ac.	Zone 2 1.9± ac.	Zone 3 1.6± ac.
Trees ✓	Red Maple	<i>Acer rubrum</i>	4-6'	40	50	80
	Gray Birch	<i>Betula populifolia</i>	4-6'		50	80
	✓ Pin Oak	<i>Quercus palustris</i>	4-6'	40	50	80
	American Sycamore	<i>Platanus occidentalis</i>	4-6'		40	80
	Green Ash	<i>Fraxinus pennsylvanica</i>	4-6'	40	40	80
	✓ Silver Maple	<i>Acer saccharinum</i>	4-6'	40	40	
	✓ River Birch	<i>Betula nigra</i>	4-6'	40	40	
	✓ Swamp White Oak	<i>Quercus bicolor</i>	4-6'	40	40	
Shrubs	Highbush Blueberry	<i>Vaccinium corymbosum</i>	3-4'	40	10	
	Swamp Azalea	<i>Rhododendron viscosum</i>	3-4'	30	10	
	Arrowwood	<i>Viburnum dentatum</i>	3-4'	30	10	
	Silky Dogwood	<i>Cornus amomum</i>	3-4'	30	10	
	Meadowsweet	<i>Spiraea alba</i>		30	10	
total				400	400	400

*species may be substituted with permission of the project wetlands scientist depending upon availability.

This submittal supplements the application under PGP Category 2 for the proposed construction of a stadium at Rentschler field in East Hartford and the direct wetland impacts at that site and secondary wetland impacts at the grassland mitigation site.

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REGULATORY DIVISION

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Other Office:
East Hartford, CT



Page 2 of 2
Revised Wet Meadow Planting Plan at
Grassland Bird Habitat Mitigation Site
Department of Corrections Facility, Enfield & Somers, CT
Army Corps of Engineers;
November 5, 2001

Should you have any questions regarding the anticipated wetland impacts and wetland mitigation, do not hesitate to contact us.

Very truly yours,

BEC, Inc.

A handwritten signature in cursive script, reading "Paul G. Davis".

Paul G. Davis, Ph.D., P.W.S.
Senior Environmental Scientist

cc. Mr. Thomas Galeota, Fuss & O'Neill
Mr. Phil McLellan, OPM

APPENDIX B

**As-built Plan of Wetland Mitigation Area
(Previously submitted under Report 1 of 3)**

APPENDIX C

Vegetation Lists and Plot Data

Renstehler Field Wetland Reforestation Mitigation Monitoring Report

Spring Vegetation Survey (June 13, 2011)

Weather Clear dry 72-degrees F

Vegetation Plot	Common Name	Latin Name	% Cover	Total % Cover	Comments
1	Rough stemmed goldenrod	<i>Solidago rugosa</i>	80%	100%	
	Late goldenrod	<i>Solidago gigantea</i>	13%		
	Queen Anne's Lace	<i>Daucus carota</i>	1%		
	Grasses sp.		5%		
	Pin Oak	<i>Quercus palustris</i>	2%		
	Swamp White Oak	<i>Quercus bicolor</i>	2%		
	Gray Birch	<i>Betula populifolia</i>	2%		
2	Rough stemmed goldenrod	<i>Solidago rugosa</i>	80%	98%	
	Late goldenrod	<i>Solidago gigantea</i>	12%		
	Grasses sp.		7%		
	Pin Oak	<i>Quercus palustris</i>	1%		
	Swamp White Oak	<i>Quercus bicolor</i>	1%		
	Gray Birch	<i>Betula populifolia</i>	1%		
3	Reed Canary Grass	<i>Phalaris arundinacea</i>	90%	100%	
	Sensitive fern	<i>Onoclea sensibilis</i>	2%		
	Soft rush	<i>Juncus effusus</i>	1%		
	Blue vervain	<i>Verbena hastata</i>	1%		
	Woolgrass	<i>Scirpus cyperinus</i>	2%		
	Swamp Azalea	<i>Rhodododendron</i>	1%		
	Highbush blueberry	<i>Vaccinium corymbosum</i>	1%		
	Red maple	<i>Acer rubrum</i>	1%		
	Swamp White Oak	<i>Quercus bicolor</i>	1%		

Rentschler Field Wetland Reforestation Mitigation Monitoring Report
Late Summer Vegetation Survey (October 7, 2011)
Weather Sunny 72 degrees F

Vegetation Plot	Common Name	Latin Name	% Cover	Total % Cover	Comments
1	Rough stemmed goldenrod	<i>Solidago rugosa</i>	70%	100%	
	Late goldenrod	<i>Solidago gigantea</i>	25%		
	Grasses sp.		1%		
	Pin Oak	<i>Quercus palustris</i>	2%		
	Swamp White Oak	<i>Quercus bicolor</i>	2%		
	Gray Birch	<i>Betula populifolia</i>	2%		
2	Rough stemmed goldenrod	<i>Solidago rugosa</i>	80%	98%	
	Late goldenrod	<i>Solidago gigantea</i>	20%		
	Pin Oak	<i>Quercus palustris</i>	1%		
	Swamp White Oak	<i>Quercus bicolor</i>	1%		
	Gray Birch	<i>Betula populifolia</i>	1%		
3	Reed Canary Grass	<i>Phalaris arundinacea</i>	88%	100%	
	Sensitive fern	<i>Onoclea sensibilis</i>	3%		
	Soft rush	<i>Juncus effusus</i>	1%		
	Woolgrass	<i>Scirpus cyperinus</i>	2%		
	Blue vevain	<i>Verbena hastata</i>	2%		
	Swamp Azalea	<i>Rhodododendron</i>	1%		
	Highbush blueberry	<i>Vaccinium corymbosum</i>	1%		
	Red maple	<i>Acer rubrum</i>	1%		
	Swamp White Oak	<i>Quercus bicolor</i>	1%		

APPENDIX D

Photo Log

Rentschler Field Wetland Reforestation Mitigation Photo Log
Enfield - Connecticut

Vegetation Zone 3 - Vegetation Plot 2
June 13, 2011



October 7, 2011



Vegetation Zone 1 -Vegetation Plot 3

June 13, 2011



October 7, 2011



Vegetation Zone 2 - Vegetation Plot 1

June 13, 2011



October 7, 2011



APPENDIX E

**Mitigation Work Start Notification Form
(Previously submitted under Report 1 of 3)**
