Natural Resource Damage Assessment Settlement

ANNUAL MONITORING REPORT

Fort Wayne Reduction Site
Allen County, Indiana

Submitted: December 31, 2002

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2002 Annual Monitoring Report

The following report summarizes the monitoring work that was completed on the Fort Wayne Reduction Site Reforestation project located in Allen County, IN. (See Location Map A). This report is submitted as part of the requirement of the Trustee approved Restoration Plan dated December 23, 1999.

Planting of the seedlings was completed on May 6-7th, 2000. 25,400 seedlings were machine planted on approximately 47 acres and annual herbicide was applied at the time of planting. The trees were planted on as close to a 9'x 9' spacing as possible. It should be noted that small changes in soil type, moisture, and terrain may result in trees being planted either somewhat closer or farther apart than that. The following seedlings based upon nursery availability, were planted on the site:

Bur Oak	3,000
Pin Oak	2,500
Swamp White Oak	1,500
Swamp Chestnut Oak	1,500
Overcup Oak	1,000
Green Ash	3,500
Sycamore	3,500
River Birch	3,000
Shellbark Hickory	1,000
Buttonbush	1,600
Silky Dogwood	1,700
Red Osier Dogwood	1,600
	25,400

Monitoring

Three, one acre test plots approximately (208' x 208'), were established on September 14-15th, 2001. Metal "T" fence posts were installed at the corners of all three plots to mark the boundaries. The test plots were located to sample tree survival rates in areas that have different soil types, as well as differences in elevation (depressional areas and high ground). Three photographic stations were also set up in the monitoring areas to

provide visual documentation of development of the areas. Observations of wildlife were noted during all site visits to the reforestation property to document usage of the property.

Monitoring Area #1

Monitoring area # 1 is located in the far west field north of Parrott Road and east of the abandoned Nail Road. The terrain in this field is fairly level with the one exception being a low depression in the far southeast corner of the field next to the drainage ditch. This field was the last area to be planted. In order to plant the trees that we had remaining, the field was planted on an approximately 8'x 8' spacing (680 trees/acre).

Results:
(See attached Monitoring Area #1 Table for complete results)

Total Stems Surviving for Monitoring Area #1 was 579/Acre. Green Ash and Silky Dogwood were the most abundant species followed by Sycamore and Red Osier Dogwood. Total Percent Stem Survival for Area #1 was 85% and 11 different species were identified. Deer damage on the dogwood shrubs was not as noticeable this year, but there was still noticeable rabbit damage to the River birch.

Monitoring Area #2

Monitoring Area #2 is located in the far southeast corner of the property on the north side of Parrott Road. This area was selected as a monitoring area to sample seedling survival in an area that has frequently saturated soil conditions. The test plot is located in a depression area on the landscape and is frequently saturated by runoff from surrounding areas.

Results:
(See attached Monitoring Area #2 Table for complete results)

Total Stems Surviving for Monitoring Area #2 was 455/Acre. Swamp White Oak and Green Ash were the most abundant species followed by River Birch and Bur Oak. Total Percent Stem Survival for Area #2 was 84% and 8 different species were identified. Rabbit damage to the River Birch and Deer damage on the Dogwood shrubs was noticed again.

Monitoring Area #3

Monitoring Area #3 is located along the north side of Parrott Road in the southwest corner of the field. The test plot area is mostly level and provides a good sampling area that is fairly representative of the high areas in the rest of the field.

Results:
(See attached Monitoring Area #3 Table for complete results)

Total Stems Surviving for Monitoring Area #3 was 518/acre. Pin Oak and Swamp White Oak were the most abundant species followed by Bur Oak and River Birch. Total Percent Stem Survival for Area #3 was 95.9% and 8 different species were identified. Rabbit damage to the River Birch was still noticeable this season.

General Discussion

Despite below average precipitation levels in 2002 (Approximately 7" below normal through November 2002), growing conditions have been favorable for establishing trees along the Maumee River. A pre-emergent herbicide was applied in April 2001 to provide weed control and help reduce the competition from grasses. An annual herbicide application was used again in May of 2002 to provide one additional year of weed control and promote establishment of the tree seedlings. In addition to the planted seedlings, volunteer seedlings are also starting to provide additional habitat. Volunteer species identified include; Silver Maple, Red Maple, Slippery Elm, Box Elder, White Ash, Sycamore, and Cottonwood.

Water quality benefits to the Maumee River are also noticeable on the project area. Crop residue drift lines and sediment covered debris indicate that the area has experienced some inundation from the Maumee River since the area was planted in May of 2000.

Wildlife habitat has improved due to the increased cover in the field. Wildlife observed on June 15, 2002 and on October 21, 2002 includes the following:

Wood duck
Mallard
Blue winged teal
Hooded Merganser
Red wing Blackbird
Crow
Brown headed Cowbird
Gold Finch
Cardinal
Cooper's Hawk
Red Tail Hawk
Northern Harrier
Deer
Rabbit
Fox Squirrel
Coyote
Opossum
Northern Leopard Frog
Snapping Turtle

A site visit was made to the property in June 2002 by Dan Sparks (USFWS), Jim Smith (IDEM), Jim Forney (Waste Management, Inc.), and Scott Fetters. The purpose of the

meeting was to provide an opportunity for the Trustee agencies to see the property and to see how well the project is doing. During the site visit, we discussed the possibility of restoring an approximate 2-acre wetland located along the east side of the County regulated ditch just south of the Maumee River. This area is currently being drained by a subsurface tile system that drains into the ditch. We also discussed the possibility of reforesting the far west field that is approximately 13.5 acres.

The aforementioned projects are not required under the agreed upon Restoration Plan. However, restoring the wetland and reforesting the remaining acreage would provide additional wildlife habitat and provide additional water quality benefits. Waste Management and the Participating Generators would be willing to pay for the costs to restore this additional habitat if the Trustees would release them from any further monitoring requirements, waive agency oversight costs, issue a Certificate of Completion, and terminate the Consent Decree.

Conclusions

The reforestation project is exceeding the goals of the Restoration Plan after only three growing seasons. The original goals of the Restoration plan required a 50% Total Stem Survival with a minimum of five species present. The three monitoring areas averaged 88% Total Stem Survival and had an average of 9 different species present since the initial planting in May 2000. Volunteer tree species and planted seedlings are beginning to provide additional cover for wildlife and water quality benefits are already being provided in the form of sediment deposition and nutrient removal from the water column.

Additional wetland restoration and reforestation work will provide excellent wildlife habitat and improved water quality. Waste Management, Inc. and the Participating Generators wish to coordinate with the Trustee Agencies on the additional reforestation and wetland habitat projects in lieu of a release from further monitoring requirements under the Consent Decree. We look forward to hearing from the Trustees and coordinating with you on the completion of the restoration work.

Monitoring Area #1 Approximately 1 Acre (208' x 208')

Species List	Total Stems Surviving by Species	% Stem Survival by Species
Bur Oak	4	1.0%
Pin Oak	17	2.9%
Swamp White Oak	31	5.4%
Swamp Chestnut Oak	6	1.0%
Green Ash	233	40.2%
Sycamore	75	12.8%
River Birch	18	3.1%
Shellbark Hickory	0	0.0%
Overcup Oak	5	1.0%
Silky dogwood	123	21.2%
Red Osier Dogwood	52	9.0%
Buttonbush	15	2.6%

Total Stems Surviving for Monitoring Area #1 579/Acre

Total Percent Stem Survival* 85% (579/680)

Species Richness = 11

* Total Percent Stem Survival = Total Surviving Stems / 680 trees per acre planted on 8' x 8' spacing.

NOTE: Area #1 was the last area to be planted. In order to plant the approximate 3 acre field. remaining trees were planted on an approximately 8' x 8' spacing (680 Trees/Acre.)

Monitoring Area #2 Approximately 1 Acre (208' x 208')

Species List	Total Stems Surviving by Species	% Stem Survival by Species
Bur Oak	60	13%
Pin Oak	51	11.2%
Swamp White Oak	75	16.4%
Swamp Chestnut Oak	23	5.0%
Green Ash	73	16.0%
Sycamore	51	11.2%
River Birch	67	14.7%
Shellbark Hickory	0	0.0%
Overcup Oak	0	0.0%
Silky dogwood	55	12.1%
Red Osier Dogwood	0	0.0%
Buttonbush	0	0.0%

Total Stems Surviving for Monitoring Area #2 455/Acre

Total Percent Stem Survival* 84.2% (455/540)

Species Richness = 8

* Total Percent Stem Survival = Total Surviving Stems / 540 trees per acre planted on 9' x 9' spacing.

Monitoring Area #3 Approximately 1 Acre (208' x 208')

Species List	Total Stems Surviving by Species	% Stem Survival by Species
Bur Oak	73	14%
Pin Oak	142	27.4%
Swamp White Oak	99	19.1%
Swamp Chestnut Oak	21	4.1%
Green Ash	51	9.8%
Sycamore	33	6.3%
River Birch	59	11.4%
Shellbark Hickory	0	0.0%
Overcup Oak	2	<1%
Silky dogwood	38	7.0%
Red Osier Dogwood	0	0.0%
Buttonbush	0	0.0%

Total Stems Surviving for Monitoring Area #3 518/Acre

Total Percent Stem Survival* 95.9% (518/540)

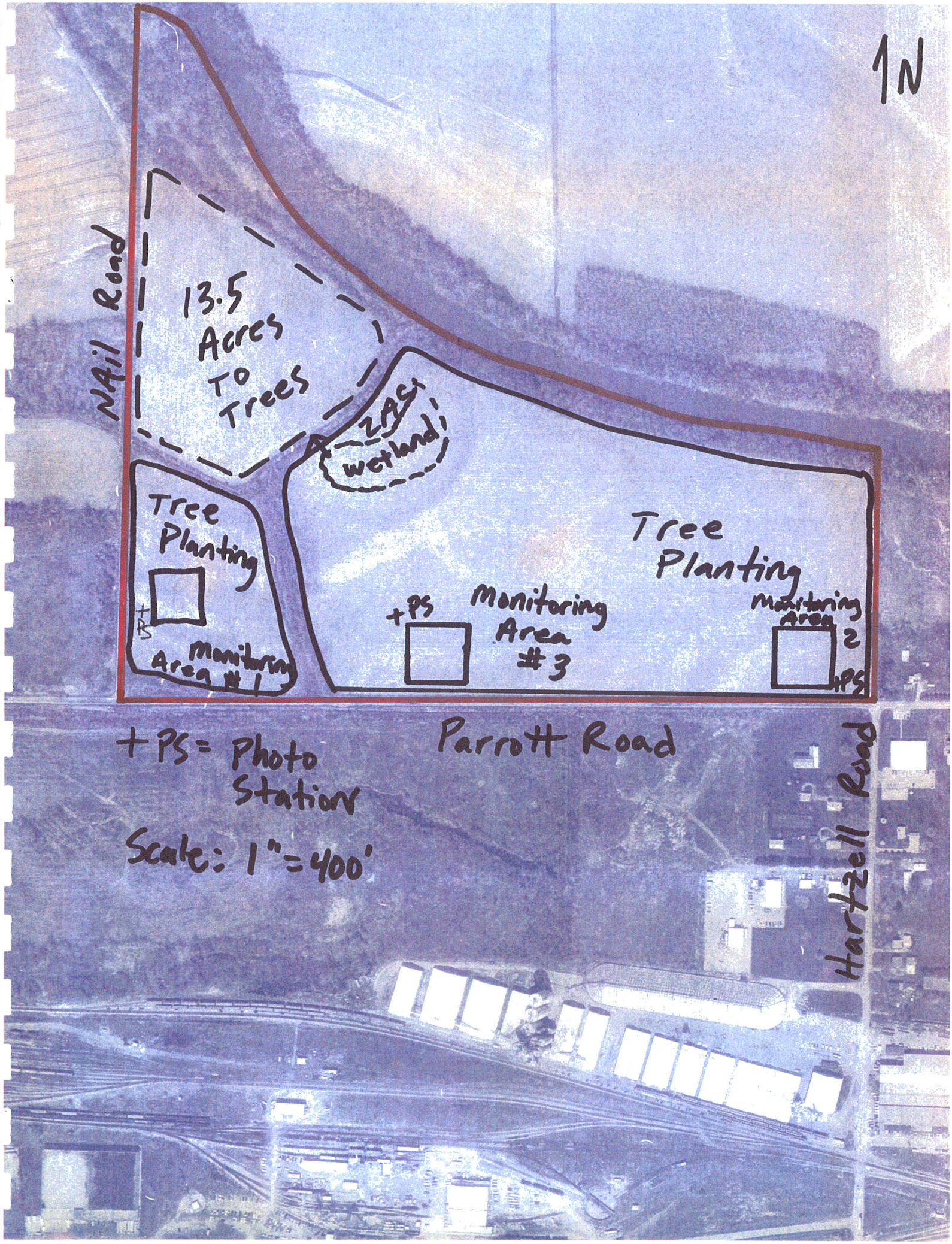
Species Richness = 9

* Total Percent Stem Survival = Total Surviving Stems / 540 trees per acre planted on 9' x 9' spacing.

Photo Station #1
Looking South East

Photo Station # 2
Looking North West

Photo Station #3
Looking West


1N
NAil Road
13.5 Acres TO Trees
ZAC wetland
Tree Planting
+PS
Monitoring Area #1
Tree Planting
+PS
Monitoring Area #3
Monitoring Area 2
+PS
Parrott Road
Hartzell Road
+PS = Photo Station
Scale: 1" = 400'