2005 Annual Restoration Monitoring Report

1½-Mile Reach – GE Pittsfield/Housatonic River Site
Pittsfield, Massachusetts

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Executive Summary

This report presents the results of the restoration monitoring performed in 2005 within the 1½-Mile Remedial Action of the General Electric - Pittsfield/Housatonic River Site in Pittsfield, Massachusetts (1½-Mile Reach). This work was performed by the U.S. Army Corps of Engineers, Weston Solutions, Inc., and Weston subcontractor Woodlot Alternatives, Inc. The restoration monitoring work was performed according to the 1½-Mile Reach Restoration Monitoring Plan (Woodlot, 2004) to assess whether the specified restoration performance standards were achieved. Restoration features assessed include aquatic habitat enhancement structures, riverbank soil restoration, riverbank revegetation and the presence of invasive species, and riverbed and riverbank riprap. This report also provides recommendations for ongoing monitoring and maintenance actions.

Areas monitored in 2005 included the Phase 1 and Transition Phase areas and sections of the Phase 2 area upstream of Station 538+00 along the east (left) bank of the Housatonic River and upstream of Station 533+00 along the west (right) bank of the river. In addition, the aquatic habitant enhancement structures were monitored downstream to Station 547+50 in the Phase 3 area.

The results of the 2005 restoration monitoring results indicate that the revegetation restoration work achieved the applicable performance standards within the monitored area of the 1½-Mile Reach. The installed trees and shrubs appeared healthy and growing vigorously. In addition, substantial recruitment of "volunteer" native trees, particularly eastern cottonwood (*Populus deltoides*) and box elder (*Acer negundo*) was observed. Overall, observed tree and shrub survivorship (density relative to the original planting density) for the Spring 2005 monitoring visit and the Summer 2005 monitoring visit met or exceeded the 80 percent restoration performance standard. Herbaceous vegetation cover ranged from 95 to 100 percent within the Phase 1, Transition Phase, and Phase 2 areas, achieving the performance standard of 95 percent. Invasive plant cover was less than the maximum of 5 percent and met the applicable performance standard. The riverbank soil restoration performance standard was also achieved in the monitored areas with no substantial areas of riverbank erosion, which likely benefited from the success of the revegetation work.

Observations of the riverbed and riverbank riprap armor in the Phase 1, Transition Phase, and Phase 2 areas of the 1½-Mile Reach indicate that the riverbed and riverbank riprap and the riverbank soils were in as-built condition.

Although the stoplogs in the temporary dam between the Phase 1 and Transition areas were opened during the summer monitoring work, the sill elevation of the stoplog bay resulted in a backwater of approximately 2-ft in the Phase 1 area. This condition precluded restoration monitoring of the aquatic habitat enhancement structures and riverbed riprap armor and some of the riverbank armor in the Phase 1 area.

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1.0 Purpose

This report presents the results of the restoration monitoring performed in 2005 within the 1½-Mile Remedial Action of the General Electric-Pittsfield/Housatonic River Site in Pittsfield, Massachusetts (1½-Mile Reach). This work was performed by the U.S. Army Corps of Engineers, Weston Solutions, Inc., and Weston subcontractor Woodlot Alternatives, Inc. (Woodlot). This work was performed in accordance with the 1½-Mile Reach Restoration Monitoring Plan (Monitoring Plan) (Woodlot, 2004) for project features including aquatic habitat enhancement structures, riverbank soil restoration, riverbank revegetation, and riverbed and riverbank armor (riprap).

2.0 Introduction

The purpose of the annual restoration monitoring is to document the performance of the remediation and restoration work performed on the 1½-Mile Reach, including work intended to achieve both habitat and non-habitat based objectives. The restoration monitoring work was performed in accordance with the Monitoring Plan, which presents a program of maintenance and performance restoration monitoring for assessing and documenting the performance of features constructed as part of restoration activities within the 1½-Mile Reach. Specific features covered by the Monitoring Plan include bank stabilization, riprap, aquatic enhancements, riverbank soil restoration, riverbank revegetation, invasive plant species control, and ancillary features including paved areas, retaining walls, and fences.

This report describes restoration monitoring work performed in 2005 in accordance with the Monitoring Plan, including the performance results of aquatic habitat enhancement structures, riverbank soil restoration, riverbank revegetation, and riverbed and riverbank armor (riprap), and ancillary features such as fences, pavement and walls. Performance results are based on observations made during regular inspections by Weston Solutions, Inc. (Weston) and U.S. Army Corps of Engineers (USACE) on-site personnel during 2005 and during inspections performed by Woodlot during May and August of 2005.

3.0 Restoration Performance Standards

Brief descriptions of applicable restoration performance standards for the assessment of habitat and non-habitat based objectives applied as part of the 2005 restoration monitoring work are presented below. The Monitoring Plan presents full descriptions of the applicable restoration performance standards and follow-up corrective actions if restoration performance standards are not achieved.

3.1 RESTORATION PERFORMANCE STANDARDS FOR HABITAT BASED OBJECTIVES

3.1.1 Aquatic Habitat Enhancement Structures

The restoration performance standard for aquatic habitat enhancement structures is defined as no significant erosion or movement of the structures or adjacent riprap. Note that while benefits to

aquatic habitat associated with the aquatic habitat enhancement structures will be documented, improved aquatic habitat itself is not a restoration performance standard.

3.1.2 Riverbank Soil Restoration

The restoration performance standard for riverbank soil restoration is defined as no significant erosion (e.g., ruts, gullies, washouts, or sloughing) of soils.

3.1.3 Riverbank Revegetation

The restoration performance standard for riverbank revegetation includes:

- Survivorship of each planted tree or shrub species (except as discussed below) shall be equal to or greater than 80 percent. The normal combined planted tree and shrub density is 1,460 per acre (730 trees and 730 shrubs). In areas where geoweb was installed as a slope-stabilization measure, the combined plant density was reduced to 1,230 per acre (500 trees and 730 shrubs).
- If shrubs are planted as a hedge (i.e. red osier dogwoods), the restoration performance standard shall be 100 percent survivability or, considering additional growth of non-planted shrubs, a continuous hedge.
- Areal cover for herbaceous vegetation shall be equal to or greater than 95 percent cover outside the foliar coverage of the trees. There is no restoration performance standard for individual species within the herbaceous seed mix.
- Areal cover of invasive plant species listed in Attachment A of the Monitoring Plan shall be less than 5 percent of the restoration monitoring area. Any invasive species present in excess of 5 percent will be removed by appropriate means.

3.2 RESTORATION PERFORMANCE STANDARDS FOR NON-HABITAT BASED OBJECTIVES

3.2.1 Riverbank and Riverbed Riprap

For riprap placed in the river channel, bank, or swales, the restoration performance standard is defined as no significant movement of the riprap or reduction in riprap thickness that threatens the stability of the riverbanks or river channel or results in the erosion of underlying soils or sediments. For riprap placed in swales, the restoration performance standard includes no movement of riprap that results in the exposure of the underlying geotextile fabric.

3.2.2 Ancillary Items

For ancillary items such as fencing, paved areas, and walls, the performance standard is defined as being in as-built condition, while taking into account normal wear and tear.

4.0 Restoration Monitoring Methods

The Monitoring Plan describes the restoration monitoring methods used to assess and document the restoration performance standards for each constructed restoration features. Brief descriptions of the restoration monitoring methods used for the applicable features are summarized below.

4.1 RESTORATION MONITORING OF AQUATIC HABITAT ENHANCEMENT STRUCTURES

Aquatic habitat enhancements structures were monitored to evaluate the structural stability and functional value of the features and to determine whether corrective actions are required. Monitoring included visual inspections to document characteristics of the structures, such as shape and location, and to document characteristics of adjacent sections of riverbed and riverbank riprap. The purpose of the restoration monitoring is to (1) determine if there was significant erosion or movement of the enhancement structures; (2) determine if the riprap is experiencing scour due to the presence of the aquatic habitat enhancement structures and (3) document apparent functional value of the structures. The functional value monitoring included observations of flow speed and depth variability, sediment deposition and scour, and the occurrence of riverine fauna in the vicinity of the structures. While the function of these structures is not a restoration performance standard, restoration monitoring provides a determination of whether the habitat-based objectives of the project are being achieved.

The Monitoring Plan specifies that restoration monitoring of the aquatic habitat enhancement structures include a minimum of two site visits per year, one visit after the high flows in the spring and one during a period of low flow (i.e., typically in July or August). Restoration monitoring is also required following flows in excess of 1,500 cubic-feet-per-second (cfs), as measured at the United States Geological Survey (USGS) Coltsville stream gaging station on the East Branch of the Housatonic River, Massachusetts (USGS Station No. 01197000).

4.2 RESTORATION MONITORING OF RIVERBANK SOIL RESTORATION

Monitoring of riverbank soil restoration consisted of visual observations to determine compliance with the applicable performance standard of no significant erosion (e.g., ruts, gullies, washouts, or sloughing). The Monitoring Plan specifies that the timing of the restoration monitoring visits be similar to that for the aquatic habitat restoration structures, with visits after high flows in the spring and during low flow in late summer. In addition, site visits are required after flow events exceeding 1,500 cfs as measured at the USGS Coltsville stream gaging station or when the water level rises to the level of the riverbank soils. Monthly observations of the riverbed and banks were conducted by Weston and USACE on-site personnel as part of the project Contractor Quality Control (CQC) program.

4.3 RESTORATION MONITORING OF RIVERBANK REVEGETATION

Restoration monitoring of riverbank revegetation included quantitative assessments of plant survivorship, herbaceous cover, and invasive plant cover in designated monitoring sub-areas, and qualitative assessments of riverbank vegetation using meander surveys in planted areas. This work included two restoration monitoring visits consisting of a visit in the spring prior to the beginning of the growing season and a visit in the mid- to late-summer during the peak of the

growing season. The purpose of the spring visit was to assess winter mortality and to allow for replanting in the fall. The purpose of the summer visit was to estimate plant survivorship, herbaceous cover, and invasive plant cover, and to assess compliance with the restoration performance standards.

4.3.1 Trees and Shrubs

The restoration monitoring of trees and shrubs on the revegetated riverbank included the quantitative assessments of plant survivorship in designated sub-areas and qualitative assessments of riverbank vegetation using meander surveys in planted areas. The quantitative assessment was performed on randomly selected sub-areas representing between 10 and 20 percent of the total sub-area within each restoration monitoring area. To quantify plant survivorship, planted trees and shrubs were counted by walking through each monitoring sub-area and determining the number, type, and condition of the installed plants. The results of the quantitative survey were used to determine the number of live and dead plants in each restoration monitoring area. Live tree and shrub totals were summarized and then divided by the design number of installed live plants to calculate plant survivorship in each planting area.

The qualitative assessments of riverbank revegetation were performed using meander surveys in each designated restoration monitoring area. The meander survey was also used to determine whether the restoration monitoring sub-areas assessed as part of the quantitative assessments were representative of the entire planting area.

4.3.2 Herbaceous Vegetation Cover

Restoration monitoring of herbaceous vegetation cover consisted of visual observations of planted areas and qualitative assessments of herbaceous areal coverage. This work included one restoration monitoring visit in mid- to late-summer. Herbaceous cover was determined by walking through each restoration monitoring area and visually estimating the total cover to the nearest 5 percent.

4.3.3 Invasive Plant Species Cover

Invasive plant species were monitored to evaluate compliance with applicable restoration performance standards and to determine whether corrective actions are required. Invasive plant species for this work are those listed by Weatherbee *et al.* (1998) for the Commonwealth of Massachusetts (Appendix A).

Invasive plant areal cover estimates were performed in the summer concurrently with the summer plant survivorship and herbaceous vegetation cover assessment. Quantitative assessments of invasive plant cover were performed by walking through planting areas and visually estimating the total invasive plant cover to the nearest 5 percent in a process similar to that used to determine herbaceous coverage.

4.4 RESTORATION MONITORING OF RIPRAP

The riprap restoration monitoring consisted of visual observations to document readily apparent characteristics of the riprap, such as fairness of the slope, sloughing, erosion, and size distribution of the riprap. This work included a minimum of two restoration monitoring events each year, one visit after the high flows in the spring and one during a period of low flow (i.e., typically in July or August). As described in the Monitoring Plan, restoration monitoring is also performed after any flow event that exceeds 1,500 cfs as measured at the USGS Coltsville stream gaging station. Monthly observations of the riverbed and banks were conducted by Weston and USACE on-site personnel as part of the project CQC program.

4.5 RESTORATION MONITORING OF ANCILLARY ITEMS

The monitoring of ancillary items consisted of visual observations to document to condition of installed structures and surface, such as significant cracks, movement, or indications of deviation from as-built condition beyond that which would be expected from normal wear and tear on structures exposed to local conditions.

5.0 Restoration Monitoring Results

This section presents the results of the restoration monitoring work performed in 2005 by Weston, USACE, and Woodlot, including the assessment of whether restoration features constructed as part of remediation activities within the 1½-Mile Reach met the specified restoration performance standards. Restoration features assessed include aquatic habitat enhancement structures, riverbank soil restoration, riverbank revegetation, riverbed and riverbank armor (riprap), and ancillary items. Recommendations to maintain or enhance restoration performance standards for these restoration features are also provided.

5.1 WESTON AND USACE MONTHLY INSPECTIONS

Weston and the USACE performed monthly restoration monitoring within the Phase 1, Transition Phase, Phase 2 and in Phase 3 areas (as the remediation work progressed downstream) of the ½-Mile Reach. The monitoring was done on the riverbank soil restoration and riverbed and riverbank armor (riprap). In addition, monthly visual observations were performed on the ancillary items. The Weston and USACE monthly monitoring reports can be found in Appendix B of the 2005 Annual Restoration Monitoring Report.

5.1.1 Riverbank Soil Restoration

The monitoring of the riverbank soil restoration was performed on monthly basis. Minor erosion and washouts were observed on the riverbanks in Phase 2 in Spring months (March, April, May and June). The areas were immediately addressed. Minor silt fence repairs and installation of additional topsoil, biodegradable mats and herbaceous seed mix were performed as a corrective measure. The overall results of this monitoring suggest that the riverbank soil restoration performance standard was achieved within the monitored areas with no substantial areas of erosion (e.g., ruts, gullies, washouts, or sloughing).

5.1.2 Riverbank and Riverbed Riprap

Monthly inspections were performed on the riverbank and riverbed riprap. The monthly inspections suggest no significant movement of the riprap or reduction in riprap thickness that threatens the stability of the riverbanks or river channel or results in the erosion of underlying soils or sediments. Therefore the performance standard for the riverbank and the riverbed riprap was achieved.

5.1.3 Ancillary Items

Visual inspections were performed on ancillary items such as fencing, paved areas, and walls on the monthly basis. The results of the observations indicate that the performance standard was archived. The ancillary items were noted to be in as-built condition, taking into account normal wear and tear.

5.2 WOODLOT SEMI-ANNUAL INSPECTIONS

Woodlot performed the Spring and Summer riverbank restoration monitoring within the Phase 1, Transition Phase, and Phase 2 areas of the 1½-Mile Reach during the weeks of May 16 and August 15, 2005, respectively. Monitored areas included the Phase 1 and Transition Phase areas and sections of the Phase 2 area upstream of Station 538+00 along the east (left) bank of the Housatonic River and upstream of Station 533+00 along the west (right) bank of the river. In addition, the aquatic habitat enhancement structures in the Phase 3 area downstream to Station 547+50 were also monitored in 2005. The results of the 2005 monitoring work are presented for aggregate monitoring areas, as defined by the Phase 1, Transition Phase, Phase 2, and Phase 3 construction areas. Appendix C includes a selection of restoration monitoring photographs from 2005. Appendix D includes the sample plot maps and field data forms, and data analysis forms for the Spring 2005 inspection. Appendix E includes the sample plot maps and field data forms, and data analysis forms for the Summer 2005 inspection.

Sample plots were established within each of the monitoring areas to provide for monitoring of between 10 and 20 percent of the aggregate area with each monitoring area The results of information obtained from sample plots within each monitoring area were subsequently used to evaluate compliance with the applicable performance standards.

5.2.1 Aquatic Habitat Enhancement Structures

The 2005 monitoring of the aquatic habitat enhancement structures in the 1½-Mile Reach was performed during the Summer monitoring visit, and included the Transition, Phase 2, and Phase 3 areas downstream to Station 547+50. Although the stoplogs in the temporary dam between the Phase 1 and Transition areas were open during the monitoring work, the sill elevation of the stoplog bay resulted in a backwater of approximate 2-ft in the Phase 1 area. This condition precluded restoration monitoring of the aquatic habitat enhancement structures and riverbed riprap armor and some of the riverbank armor in the Phase 1 area.

The results of this monitoring suggest that the structures are stable and performing as designed. The performance monitoring of the aquatic habitat enhancement structures in the Phase 1 area has been postponed pending the removal of the temporary dam. The August 2005 observations of the aquatic

habitat structures in the Phase 1 area suggest that the aquatic habitat enhancement structures are in as-built condition. Restoration monitoring of the aquatic habitat enhancement structures in Phase 1 will resume following the removal of the temporary dam.

Observed conditions adjacent to the aquatic habitat structures included variations in flow speed, including reversal of currents behind the structures, and adjacent sediment scour and deposition. The monitoring indicates that the performance standard was achieved.

5.2.2 Riverbank Soil Restoration

The 2005 monitoring of the riverbank soil restoration in the 1½-Mile Reach was performed during the Spring and Summer monitoring visits. The monitored areas included the Phase 1 and Transition Phase areas and sections of the Phase 2 area upstream of Station 538+00 along the east (left) bank of the Housatonic River and upstream of Station 533+00 along the west (right) bank of the river. The balance of the riverbanks in the Phase 2 and Phase 3 areas where planted with woody vegetation in 2005, and therefore were not monitored in 2005.

The flow in the Housatonic River during this inspection was approximately 70 cfs during the May (Spring) visit and approximately 20 cfs during the August (Summer) visit, as measured at the USGS Coltsville stream gaging station. Observations made indicate that there were no substantial areas of erosion (e.g., ruts, gullies, washouts, or sloughing) in the monitored areas and the performance standards were achieved.

5.2.3 Riverbank Revegetation

The 2005 monitoring of riverbank revegetation restoration in the 1½-Mile Reach was performed during the Spring and Summer monitoring visits. The monitored areas included the Phase 1 and Transition Phase areas and sections of the Phase 2 area upstream of Station 538+00 along the east (left) bank of the Housatonic River and upstream of Station 533+00 along the west (right) bank of the river. This work included the assessment of plant survivorship, herbaceous vegetation cover, and invasive plant cover to evaluate compliance with the specified restoration performance standards. Tables 1 and 2 summarize the results of the 2005 Spring and Summer riverbank revegetation restoration monitoring results, respectively.
Within each monitoring area, random sample plots were established comprising a total area of no less than 10% of the total monitoring area. Live trees and shrubs were counted within each sample plot, and compared to the target density of trees and shrubs based on the known planting density. The percentage shown in the table is the ratio of counted live trees or shrubs to the initial planting densities. Note that since random plots were established during each inspection, the Spring inspection plots are not the same as the Summer inspection plots.

5.2.3.1 Spring Revegetation Inspection Results

The Spring 2005 monitoring of tree and shrub survivorship in the 1½-Mile Reach was performed during May of 2005. The percent survivorship of installed trees and shrubs ranged from 75 percent to 100 percent for the monitoring areas. A breakdown of the monitoring results by monitoring area (e.g. Phase 1) is provided in Table 1. These results indicate the planted stock survivorship restoration performance standard was achieved in Spring 2005 for both trees and

shrubs. While a measured tree survivorship of 75 percent for the Transition Area was recorded in the Spring, this result was due to several sample plots in this area being within shrub clumps, where trees were excluded during the original planting. This relative density is therefore skewed low, as the amount of trees originally planted is lower than the typical design density. This type of reporting issue will be addressed in the 2006 monitoring. No corrective action was recommended, as there was healthy growth of trees and shrubs in the area, and it was determined that performance standards were being met.

Monitoring of herbaceous coverage and invasive plants was not conducted during the Spring inspection.

Table 1 – Spring 2005 Revegetation Inspection Summary

Planting Area	**Riverbank Revegetation Feature**	**Sample Plot Average (%)**	**Restoration Performance Standard (%)**
Phase 1	Plant Survivorship	100	80
	Tree Survivorship	*100*	*80*
	Shrub Survivorship	*100*	*80*
	Herbaceous Cover	N/A	N/A
	Invasive Plant Coverage	N/A	N/A
Transition	Plant Survivorship	85	80
	Tree Survivorship	*75*	*80*
	Shrub Survivorship	*90*	*80*
	Herbaceous Cover	N/A	N/A
	Invasive Plant Coverage	N/A	N/A
Phase 2	Plant Survivorship	90	80
	Tree Survivorship	*90*	*80*
	Shrub Survivorship	*95*	*80*
	Herbaceous Cover	N/A	N/A
	Invasive Plant Coverage	N/A	N/A

5.2.3.2 Summer Inspection Results

The Summer 2005 monitoring of tree and shrub survivorship in the 1½-Mile Reach was performed during August of 2005. The percent survivorship of installed trees and shrubs ranged from 95 percent to 100 percent for the monitored areas within the vegetation sample plots. A breakdown of the monitoring results by monitoring area (e.g. Phase 1) is provided in Table 2. These results indicate the planted stock survivorship restoration performance standard was achieved in Summer 2005 for both trees and shrubs in all areas.

The increase in measured survivorship recorded during the Summer monitoring relative to Spring likely resulted from factors including 1) counting of volunteer stock, 2) recovery of plants

counted as "dead" during the Spring monitoring, and 3) variations in the locations of the sample plots within the monitoring areas.

The riverbank vegetation sample plot results in both Spring and Summer correlated well with observations made during meander surveys, the results of which indicated 1) minimal dead planted stock, and 2) large numbers of volunteer plants, particularly eastern cottonwood (*Populus deltoides*) and box elder (*Acer negundo*). Because plant counts within the monitoring plots included volunteer species represented in the planted stock, some of the calculated plant densities exceeded the planted densities, resulting in calculated survivorships in excess of 100 percent for some areas. These areas are reported here as having a survivorship of 100 percent.

Installed plants appeared healthy and growing vigorously, with fruit apparent on some of the shrubs. While many of the winterberry (*Ilex verticillata*) plants appeared stressed during the spring survey, they appeared to be in better health during the summer survey.

Of note is that some planted stock, such as black willow (*Salix nigra*) and red osier dogwood (*Cornus sericea*), appear to be constrained within the welded-wire tree protectors.

The 2005 monitoring of herbaceous coverage in the 1½-Mile Reach was performed during the Summer monitoring visit. The results of the monitoring are presented in Table 2. The herbaceous areal cover standards specified in the Monitoring Plan were achieved within all monitoring areas, with observed sample plot average coverage within each phase ranging from 95 to 100 percent. The results of meander surveys performed as part of the monitoring work indicate that the overall herbaceous vegetation coverage achieves the performance standard of 95 percent outside the foliar coverage of tree. There were some areas within individual sample plots where the observed herbaceous areal cover was below the applicable performance standard. These included 1) along the east bank of the river in the Transition Phase area, and 2) along the west bank of the river in the Phase 2 area downstream of where the articulated concrete mat ends. The low herbaceous cover in the Transition Phase area appears to have resulted from soil loss or compaction within the geoweb material. No readily apparent cause was observed for the low herbaceous cover in the Phase 2 area, although the presence of sand and gravel on the slope suggests that erosion originating outside of the limit of work may have adversely effected herbaceous plant growth in limited areas. No corrective action was deemed necessary other than continued monitoring of these areas as they fill in.

The 2005 monitoring of invasive plant cover in the 1½-Mile Reach was also performed during the Summer monitoring visit. The results of the monitoring work are presented in Table 2. Invasive plant control updates provided by Woodlot in 2005 are included in Appendix F. Invasive plant cover within the inspected riverbank sample plots was less than 5 percent within the monitored areas. Observed invasive plants included Japanese knotweed (*Polygonum sp.*), bittersweet (*Celastrus orbiculata*), purple loosestrife (*Lythrum salicaria*), reed canary-grass (*Phalaris arundinacea*), common buckthorn (*Rhamnus cathartica*), and multiflora rose (*rosa multiflora*). As shown in Table 2, the average invasive plant cover for the monitored areas is relatively low and meets the restoration performance standard of less than 5 percent coverage.

Purple loosestrife was the most apparent invasive plant in 2005 and was relatively ubiquitous in low numbers within the monitored areas. While purple loosestrife was observed growing in

sediments deposited within the riverbank riprap in the Phase 1 area, it is doubtful that control measures would be effective in this area due to dispersal of seed from upstream sources. Furthermore, the presence of purple loosestrife within the riprap does not directly impact planted stock success in areas above the limit of riprap.

Of particular note was the presence of hedge-bindweed, or "false morning glory", (*Calysegia sepium*). This plant was observed in large concentrations (ground coverage in excess of 50 percent) along the west side of the river in the Phase 2 area and appears to have damaged planted stock. While this plant is not listed as an invasive plant in Appendix A, it occurs in both native and introduced forms (Gleason, 1991).

Invasive plant control work within the project area was performed in 2005 by C.L. Frank & Company. Observations suggest that the herbicide applications were effective, as treated invasive plants have died back with no minimal impacts on surrounding non-target vegetation.

Table 2 – Summer 2005 Revegetation Inspection Summary

Planting Area	**Riverbank Revegetation Feature**	**Sample Plot Average (%)**	**Restoration Performance Standard (%)**
Phase 1	Plant Survivorship	100	80
	Tree Survivorship	*100*	*80*
	Shrub Survivorship	*100*	*80*
	Herbaceous Cover	100	95
	Invasive Plant Coverage	<5%	<5%
Transition	Plant Survivorship	100	80
	Tree Survivorship	*100*	*80*
	Shrub Survivorship	*100*	*80*
	Herbaceous Cover	95	95
	Invasive Plant Coverage	<5%	<5%
Phase 2	Plant Survivorship	100	80
	Tree Survivorship	*100*	*80*
	Shrub Survivorship	*90*	*80*
	Herbaceous Cover	95	95
	Invasive Plant Coverage	<5%	<5%

Note: The plant survivorship values were calculated using arealy-weighted averages of sample plot data.

5.2.4 Riverbank and Riverbed Riprap

Woodlot performed the "low-flow" riverbank and riverbed riprap restoration monitoring work within the Transition Phase and Phase 2 (STA 522+00 to 538+00) areas during the week of August 15, 2005. The flow in the Housatonic River during at this time was approximately 20 cfs. Because of a planned drawdown of the impoundment upstream of the temporary dam located between the Phase 1 and Transition areas during the monitoring work, the riverbank riprap in the Phase 1 area was also monitored. Observations of the riverbank riprap in the Phase 1, Transition, and Phase 2 areas indicated no significant movement or reduction in thickness

relative to as-built conditions. Observations of the riverbed riprap in the Transition and Phase 2 areas indicated no significant movement or reduction in thickness relative to as-built conditions. Therefore the performance standards were met. Backwater effects caused by the temporary dam precluded monitoring of the riverbed riprap in the Phase 1 area. Monitoring of the riverbed riprap in this area will be initiated following removal of the temporary dam.

5.3 POST-1,500 CFS EVENT MONITORING

Both Woodlot and Weston performed monitoring of riprap, aquatic habitat enhancement structures, and riverbank soil and vegetation on April 13, 2005, and on October 12, 2005, in accordance with the post-1,500-cfs monitoring requirements set forth in the Monitoring Plan. The monitoring was performed in response to a hydrologic event on April 3, 2005, during which a peak flow of 2,910 cfs was recorded at the USGS Coltsville stream gaging station, and a second large event on October 9, 2005, during which a peak flow of 6,510 cfs was recorded at Coltsville. The memos documenting the results of these inspections dated April 25, 2005 and October 18, 2005 are included in Appendix G and summarized below.

April 13 Inspection

The flow during the April 13, 2005 monitoring visit was approximately 200 cfs, as recorded at the USGS Coltsville stream gaging station. The monitoring commenced at the upper limit of the Phase 1 Reach immediately downstream of the Lyman Street Bridge and proceeded downstream through the Phase 2 Area to the limit of completed work in the Phase 3 Area (Station 547+50).

No deficiencies in the permanent features were observed during the monitoring work that could be attributed to the peak flows experienced on April 3, 2005. There was no observed movement or reduction in thickness of riprap during the inspection. Some minor soil erosion was observed, but this appeared to be the result of upland runoff and not the result of riverine flows. Some of the installed plant stock and tree gages were knocked over, but it is unknown whether this was the result of flooding or of construction activities. Of note is the observed wrack line, which provides a qualitative estimate of the peak flood elevation and was observed at the top of the riprap at several locations.

October 12 Inspection

The flow during the October, 12 2005 monitoring visit was approximately 200 cfs, as recorded at the USGS Coltsville stream gaging station. The monitoring commenced at the upper limit of the Phase 1 Reach immediately downstream of the Lyman Street Bridge and proceeded downstream through the Phase 2 Area to the limit of completed work in the Phase 3 Area at the Pomeroy Avenue Bridge.

Flood related damage to the installed vegetation and riprap was observed during the monitoring visit. Damage to installed vegetation included trees and tree cages knocked over and/or swept away. Erosion of soil was observed at the base of some plants, along the soil-riprap interface at the locations with apparently high flow speeds, and in areas that were recently restored. The most damage to the riprap was observed in three areas: Scour to the riprap in the Transition Phase on the east riverbank immediately downstream of the temporary dam, displacement of the

riprap on both riverbanks immediately downstream of the articulated concrete blocks (ACB) in Phase 2 and sloughing of the riprap along the east riverbank downstream of the ACB. These areas of minor impact were addressed and repaired prior to the end of 2005. More detailed description of the Post 1,500 - CFS Inspections can be found in Attachment G.

6.0 Conclusions

The following conclusions are based on the 2005 restoration monitoring effort.

Aquatic Habitat Enhancement Structures - Observations made in August 2005 suggest that the installed habitat enhancement structures remain in as-built condition, are functioning as intended, that the performance standard was achieved.

Riverbank Soil Restoration - The riverbank soil restoration performance standard was achieved in the restoration monitoring areas. Areas that sustained minor damage during the October, 2005 flood event were repaired prior to the end of the year.

Riverbank Revegetation - The results of the 2005 restoration monitoring results indicate that the revegetation restoration work achieved the applicable performance standards within the monitored area of the 1½-Mile Reach. The installed trees and shrubs appeared healthy and growing vigorously. In addition, substantial recruitment of "volunteer" native trees, particularly eastern cottonwood and box elder, was observed. Overall, tree and shrub survivorship met or exceeded the 80 percent survivorship restoration performance standard. Herbaceous vegetation cover ranged from 95 to 100 percent, and invasive plant cover was less than the maximum of 5 percent as defined by the applicable performance standard.

To enhance the performance of the revegetation program, the following maintenance items will be performed:

- **Tree Maintenance –** Take measures to reduce branch constraint within tree cages and minimize abrasion of trunks against tree cages, and remove tree cages from the red osier dogwood.
- **Invasive Plant Control -** Continue invasive plant control work within the project area, as appropriate. This work will include measures intended to mitigate damage to planted stock from false morning glory.
- **Herbaceous Cover –** The performance standard was met, however, continued assessment of herbaceous coverage and appropriate measures to maintain and improve herbaceous coverage are planned.

Riverbed and Riverbank Riprap - The restoration performance standard for riverbank and riverbed riprap was achieved. Minor damage incurred during the October, 2005 high flow event was repaired prior to the end of 2005.

Ancillary Items - The ancillary items performance standard was achieved, the ancillary items were found to be in as-built condition, while accounting for normal wear and tear.

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7.0 References

Gleason, H.A. and A. Cronquist. 1991. Manual of Vascular Plants of Northeastern United States and Adjacent Canada. New York Botanical Garden. Bronx, NY.

Weatherbee, P., Somers, P., and Simmons, T. 1998. A Guide to Invasive Plants in Massachusetts, Prepared by The Massachusetts Biodiversity Initiative, Prepared for the Massachusetts Division of Fisheries and Wildlife.

Woodlot Alternatives, Inc. (Woodlot). 2004. 1½ Mile Reach Restoration Monitoring Plan, GE-Housatonic River Site, Pittsfield, MA. Prepared for Weston Solutions, Inc., 1 Wall Street, Manchester, NH 03101.

Appendix A

Massachusetts Invasive Plant List
(Weatherbee et al., 1998)

Invasive Plant List

COMMON NAME	SCIENTIFIC NAME
Amur honeysuckle	*Lonicera maackii*
Autumn olive	*Elaeagnus umbellata*
Barnyard grass	*Echinochloa crusgalli*
Black locust	*Robinia pseudoacacia*
Black swallow-wort	*Cynanchum louiseae*
Bittersweet nightshade	*Solanum dulcamara*
Bushy Rock-cress	*Cardamine impatiens*
Canada bluegrass	*Poa compressa*
Chervil	*Anthriscus sylvestris*
Coltsfoot	*Tussilago farfara*
Common barberry	*Berberis vulgaris*
Common buckthorn	*Rhamnus cathartica*
Common / hedge privet	*Ligustrum vulgare*
Common mullein	*Verbascum thapsus*
Creeping buttercup	*Ranunculus repens*
Curly pondweed	*Potamogeton crispus*
Cypress spurge	*Euphorbia cyparissias*
Dame's rocket	*Hesperis matronalis*
Eurasian water-milfoil	*Myriophyllum spicatum*
Fanwort	*Cabomba caroliniana*
Garlic mustard	*Alliaria petiolata*
Giant waterweed	*Egeria densa*
Glossy buckthorn	*Rhamnus frangula*
Goutweed or	*Aegopodium podagria*
Hair fescue	*Festuca filiformis*
Hairy willow-herb	*Epilobium hirsutum*
Japanese barberry	*Berberis thunbergii*
Japanese honeysuckle	*Lonicera japonica*
Japanese hops	*Humulus japonicus*
Japanese knotweed	*Polygonum cuspidatum*
Japanese privet	*Ligustrum obtusifolium*
Japanese rose	*Rosa rugosa*
Kiwi vine	*Actinidia arguta*
Kudzu	*Pueraria montana*
Lesser naiad	*Najas minor*
Live-forever or Orpine	*Sedum telephium*
Money wort	*Lysimachia nummularia*
Morrow's honeysuckle	*Lonicera morrowii*
Morrow's X Tatarian	*Lonicera xbella*
Multiflora rose	*Rosa mutiflora*
Norway maple	*Acer platanoides*
Oriental bittersweet	*Celastrus orbiculata*

Phragmites, Reed grass	*Phragmites australis*
Porcelain berry	*Ampelopsis brevipedunculata*
Purple loosestrife	*Lythrum salicaria*
Reed canary-grass	*Phalaris arundinacea*
Russian olive	*Elaeagnus angustifolia*
Sea- or horned poppy	*Glaucium flavum*
Sheep fescue	*Festuca ovina*
Sheep-sorrel	*Rumex acetosella*
Silver lace-vine	*Polygonum aubertii*
Silver poplar	*Populus alba*
Spotted knapweed	*Centaurea biebersteinii*
Sweet reedgrass	*Glyceria maxima*
Sycamore maple	*Acer pseudoplatanus*
Tartarian honeysuckle	*Lonicera tartarica*
Tree-of-heaven	*Ailanthus altissima*
True forget-me-not	*Myosotis scorpioides*
Water-chestnut	*Trapa natans*
Watercress	*Rorippa nasturtium-aquaticum*
Wetsern catalpa	*Catalpa speciosa*
White mulberry	*Morus alba*
Wild thyme	*Thymus pulegioides*
Winged euonymus	*Euonymus alata*
Variable water-milfoil	*Myriophyllum heterophyllum*
Yellow floating heart	*Nymphoides peltata*
Yellow iris	*Iris pseudacorus*

Reference:

Weatherbee, P.B., P. Somers, T. Simmons. 1998. A Guide to Invasive Plants in Massachusetts. The Massachusetts Biodiversity Initiative. MassWildlife.

Appendix B

Completed Field Data Forms – Riverbank and Riverbed Riprap Monitoring

Field Form for Monitoring of Rock Riprap Armor

Date: January 28, 2005 Location: Housatonic River 1.5 Mile Removal Action Phase I and Phase II Weather: Cold, Part Cloudy Observations	
Attached Map No./Site ID/GPS Coord.	Comments / Recommendations
Phases I & II	Comments: Inspected the riverbed 9” and 12” riprap and riverbank 18”riprap and found no evidence of movement
Phases I & II	Comments: Due to snow cover, inspection of the restoration topsoil could not be conducted.
Lead Monitor: Other Personnel	Name Signature Richard M. Zoppel _____ _____ _____ _____ _____

Field Form for Monitoring of Rock Riprap Armor

Date: February 25, 2005 Location: Housatonic River 1.5 Mile Removal Action Phase I and Phase II Weather: Cold, Part Cloudy Observations	
Attached Map No./Site ID/GPS Coord.	Comments / Recommendations
Phases I & II	Comments: Inspected the riverbed 9” and 12” riprap and riverbank 18”riprap and found no evidence of movement
Phases I & II	Comments: Due to snow cover, inspection of the restoration topsoil could not be conducted.
Lead Monitor: Other Personnel	Name Signature Richard M. Zoppel _____ _____ _____ _____ _____

Date: March 31, 2005 Location: Housatonic River 1.5 Mile Removal Action Phase I and Phase II Weather: Mild, Cloudy Observations	
Attached Map No./Site ID/GPS Coord.	Comments / Recommendations
Phases I & II	Comments: Inspected the riverbed 9" and 12" riprap and riverbank 18"riprap and found no evidence of movement
Phase I, lot I8-23-6, station ±570+50	Comments: Silt fence has fallen down during the winter months causing a directed flow of road fines into the restored riverbank area. (west bank near old trainer site) Recommendations: Repair the silt fence
Phase II, Cell 16W, lot I8-4-8 station 528+00 to 530+00	Comments: The upper section of the west riverbank beyond the limit of excavation (along Deming St), where trees were removed for access to the river and does not have any under growth / herbaceous cover. Recommendations: The upper section of the west beyond the limit of excavation requires the seeding with annual rye grass from the Elm St. Bridge to the La Brie property.
Phase II, Cell 20E, lot I7-20-1, station 543+00	Comments: The Caledonia Ave and Dawes Ave. intersection runoff drainage swale need to be repaired Recommendation: Due to the poor condition of the asphalt pavement on Caledonia Ave, removal of the loose asphalt is required and concrete needs to be installed down to the existing 9" riprap drainage swale and add additional 9" riprap to eliminate the drop into the swale.
Phase II, Lot I8-10-1, Station 527+60	Wash out of top soil at the top of the restoration area, located at the intersection of cells 15E and 16E Recommendation: Redirect High St run off to catch basin, add topsoil and reseed
Phase II, Lot I8-4-6, station 532+25	Wash out of top soil at the top of the restoration area, located in cell 17W Recommendation: Redirect Deming St run off, add topsoil and seed.
Lead Monitor: Other Personnel	Name Signature Richard M. Zoppel Randy Sujat

Field Form for Monitoring of Rock Riprap Armor

Date: April 30, 2005 Location: Housatonic River 1.5 Removal Action Weather: Partly Cloudy, mid 60's Observations	
Attached Map No./Site ID/GPS Coord.	Comments / Recommendations
Map #1	8" deep by 8' long wash out erosion at the top of the restoration at the intersection of cells 16 and 17, lot I8-4-8. Upstream of the LaBrie property I8-4-6
Map #2	Cell 14, at the end of ACB Revetment there erosion down to the bedrock. It is difficult to see with the river running but it appears to have some erosion of the ACB underlying soil.
Lead Monitor: Other Personnel	Name Signature Richard M. Zoppel _____ None _____

Field Form for Monitoring of Rock Riprap Armor

Date: May 26, 2005 Location: Housatonic River 1.5 Mile Removal Action, Phase I and Phase II Weather: Mostly cloud Observations	
Attached Map No./Site ID/GPS Coord.	Comments / Recommendations
Phase II, Lot I8-10-3	Comments: Runoff from High St through the temporary parking lot is causing erosion (8'long and 7" deep) on the upper section of the restored east riverbank. Recommendation: Re-grade the temporary parking to have the High Street storm water directed into the existing riprap swale and extending the silt fence extended to the riprap swale.
Phase I & II	Comments: Inspected the riprap riverbank and riverbed and did not find evidence of riprap movement
Lead Monitor: Other Personnel	Name Signature Rich Zoppel _____ Rand Sujat _____ _____ _____

Field Form for Monitoring of Rock Riprap Armor

Date: June 22, 2005 Location: Housatonic River 1.5 Mile Removal Action Phase I and Phase II Weather: Mild Partly Cloudy Observations	
Attached Map No./Site ID/GPS Coord.	Comments / Recommendations
Phase I & II	Comments: Inspected the riverbank and riverbed in the Phase I and II sections of the project. No evidence of riprap movement observed.
Phase II, lot I8-4-6	Comments: Erosion of the east riverbank upper section of the restoration topsoil, 80' upstream of the house, at the security fence. Runoff from Deming St across the existing ground cover has caused two areas of erosion (12' long and 10"deep; 8' long and 7"deep) Recommendation: Backfill the 2 areas of erosion with topsoil, seed, install coconut matting and install silt fence to protect these areas.
Lead Monitor: Other Personnel	Name Signature Richard M. Zoppel _____ _____ _____ _____ _____

Field Form for Monitoring of Rock Riprap Armor

Date: July 20, 2005 Location: Housatonic River 1.5 Mile Removal Action Phases I, II and III Weather: Clear hot Observations	
Attached Map No./Site ID/GPS Coord.	Comments / Recommendations
Phases I & II	Comments: Inspected the riverbed 9" and 12" riprap and riverbank 18"riprap and found no evidence of movement
Phase II, Lot I8-10-1	Comments: Found a 30' area of sloughing of the upper section of the riverbank topsoil and coconut matting, 50' downstream of the High St/Caledonia Ave. Recommendations: This sloughing area on the upper section of the east riverbank has been noticed previously during Follow Up Inspections and during the spring time Punch List Inspection. It has been determined that the area is stable and does not require repairs at this time. Monthly inspections must check this section of the east riverbank
Phase III Lot I7-2-45	Comments: Found a small erosion of the upper section of the west riverbank cause by a garage down spout outfall. (8' long and 8" deep) Recommendations: This area will require the installation of topsoil seed and coconut matting.
Lead Monitor: Other Personnel	Name Signature Richard M. Zoppel _____ _____ _____ _____ _____

Field Form for Monitoring of Rock Riprap Armor

Date: August 26, 2005 Location: Housatonic River 1.5 Mile Removal Action Phase I and Phase II Weather: Clear hot Observations	
Attached Map No./Site ID/GPS Coord.	Comments / Recommendations
Phases I, II & III	Comments: Inspected the riverbed 9” and 12” riprap and riverbank 18”riprap and found no evidence of movement
Phases I, II & III	Comments: Inspected the riverbanks and found no evidence of erosion.
Lead Monitor: Other Personnel	Name Signature Richard M. Zoppel _____ _____ _____ _____ _____

Field Form for Monitoring of Rock Riprap Armor

Date: September 28, 2005 Location: Housatonic River 1.5 Mile Removal Action Phase I and Phase II Weather: Mild, Overcast Observations	
Attached Map No./Site ID/GPS Coord.	Comments / Recommendations
Phases I, II & III	Comments: Inspected the riverbed 9” and 12” riprap and riverbank 18”riprap and found no evidence of movement
Phases I, II & III	Comments: Inspected the riverbanks and found no evidence of erosion.
Lead Monitor: Other Personnel	Name Signature Richard M. Zoppel _____ _____ _____ _____ _____

Field Form for Monitoring of Rock Riprap Armor

Date: October 19, 2005

Location: Housatonic River 1.5 Mile Removal Action Phase II and Phase III B

Weather: Clear, Cool, 55 to 65 degrees

Inspection: Post 1500 cfs River Flow Storm Riverbank Erosion Inspection

Observations

Attached Map No./Site ID/GPS Coord.	**Comments / Recommendations**
Phases II A, East Riverbank, Cell 14, Station 524+25 to 523+75	**Comments:** An area of riprap movement was observed on the east riverbank adjacent to the downstream end of the ACB Revetment. This area of 30'along the bank and 18' up the bank has had wash out of backfill material. An inspection of riprap shows a thinning of the12" riprap to a depth of the filter material, 12" to 20" deep. **Recommendations:** Since there is no evidence of the filter material being washed out, 18" riprap can be installed to the design finish grade.
Phase II A, West Riverbank Cell 14, Station 524+20 to 524+40	**Comments**: An area of riprap movement was observed on the west riverbank adjacent to the downstream end of the ACB Revetment. This area of 20' along the bank and 15' up the bank has had washout of backfill material. An inspection of the riprap shows a thinning of the 12" riprap and filter material exposing the common fill. **Recommendations:** Since there is no evidence of common fill washing out, install 6" of filter material and then install 18" riprap up to the designed finish grade.
Phase II A, East Riverbank, Cell 15, Station 525+75	**Comments:** An area of riprap movement was observed on the west riverbank adjacent to the upstream Cantilevered Sheet Pile Wall drainage swale. This area of 20' along the bank and 20' up the bank has had a washout of backfill material. An inspection of the 12" riprap shows the complete removal of riprap, filter material and washing of common fill down to native ground in areas below the top of riprap elevation and sloughing of common fill and topsoil above the top of riprap elevation. **Recommendations:** The area will need to be expanded towards the downstream to remove the remaining common fill and topsoil to the existing 18" riprap swale. Install 6" to 9" of filter material and 18" riprap up to the design finish grade over the entire washout area.
Phase II A, West Riverbank	**Comments:** An area of riprap movement was observed on the west riverbank. This area of 20' along the toe of the riverbank has evidence of backfill movement. An inspection of the 12" riprap found

Cell 15 Station 525+75	an area where the riprap has been washout and has caused an vertical drop to the riverbed, estimated drop of 12" to 18" drop. **Recommendation:** There is no evidence of the underlying filter material being washed out. Install 18" riprap in the washout area
P**hase II B, West Riverbank, Cell 16, Station 528+50**	**Comments:** An area of riprap movement was observed on the west riverbank. This area of 20' along the bank and 15' up the bank has had a washout of backfill material. An inspection of the 12" riprap shows thinning of the riprap down to the filter material. **Recommendations:** There is no evidence of the underlying filter material being washed. Install 18" riprap in the wash out area.
Phase II B, West Riverbank, Cell 16, Station 529+25	**Comments:** An area of riprap movement was observed on the west riverbank. An area of 15' along the bank and 10' up the bank shows movement of the backfill. An inspection of the 12" riprap shows movement or roughing of the area causing a slight thinning of the riprap. **Recommendations:** There is only roughing and minor movement of the 12" riprap, repairs can be conducted by hand relocating of the 12" riprap to the thinned areas.
Phase II B, West Riverbank, Cell 18, Station 536+25 to	**Comments**: An area of riprap movement was observed on the west riverbank. This area of 60' along the bank and 12' up the bank shows movement of the backfill material. An inspection of the 12" riprap shows the 12" riprap roughing of the riprap and some minor thinning. **Recommendations:** There is only roughing and minor thinning of the 12" riprap, repairs can be conducted by hand filling in the thinned areas with the high points.
Phase III B, East Riverbank, Cell 24, Station 547+50 to 548+00	**Comments:** An area of riprap movement was observed on the east riverbank. This area of 100' along the bank and 13' up the bank shows roughing of the 18" riprap with some minor rolling of riprap down to the toe of the slope. **Recommendations:** Use an excavator to pull a few rocks up the bank from the toe and smoothing the 18" riprap unto place.
Phase III B, East Riverbank, Cell 25, Station 550+50	**Comments**: An area of riprap movement was observed on the east riverbank. This area of 30' along the top of the riverbank shows minor backfill movement. The flooding water flowing across the lots I7-3-4 and I7-3-5 caused the some top of bank riprap to roll down the riverbank. **Recommendations**: None required
Phase III B, East Riverbank, cell 25	**Comments:** An area of riprap movement was observed on the east riverbank. This area of about 20' along the top of riprap shows minor movement. The flooding water flowing across the lots I7-3-4 and I7-3-5 caused some pieces of riprap to roll down the bank. **Recommendations:** Using an excavator, install 18" riprap at the top of the riverbank to the design elevation.
	Name **Signature**

Lead Monitor:	Richard M. Zoppel	_____
Other Personnel	Randy Sujat	_____
	_____	_____

Field Form for Monitoring of Rock Riprap Armor

Date: November 30, 2005 Location: Housatonic River 1.5 Mile Removal Action Weather: Partly cloud Observations	
Attached Map No./Stie ID/GPS Coord.	Comments / Recommendations
Phases I, II & III	Comments: Inspected the riverbed 9” riprap and riverbank 12 and 18”riprap and found no evidence of movement, otherwise noted on the October 1500cfs inspection
Phases I, II & III	Comments: Inspected the riverbanks and found no evidence of erosion, otherwise noted on the October 1500cfs inspection
Lead Monitor: Other Personnel	Name Signature Rich Zoppel Rand Sujat

Field Form for Monitoring of Rock Riprap Armor

Date: December 19, 2005 Location: Housatonic River 1.5 Mile Weather: partly sunny Observations	
Attached Map No./Stie ID/GPS Coord.	Comments / Recommendations
Phases I, II & III	Comments: Inspected the riverbed 9” riprap and riverbank 12 and 18”riprap and found no evidence of movement
Phases I, II & III	Comments: Inspected the riverbanks and found no evidence of erosion.
Lead Monitor: Other Personnel	Name Signature Rich Zoppel

Appendix C

Selected Photographs
(All Photographs by Woodlot Alternatives, Inc.)

WOODLOT ALTERNATIVES, INC.
ENVIRONMENTAL CONSULTANTS

Memorandum

To: Izabela Zapisek, Weston Solutions, Inc.

From: Michael Chelminski, Woodlot Alternatives, Inc.

Date: March 9, 2006

Re: Photographs from 2005 Monitoring Work, 1½ Mile Reach, Housatonic River

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As requested, below are annotated photographs from the Spring and Summer 2005 vegetation monitoring work performed by Woodlot Alternatives, Inc. (Woodlot) on the 1½ Mile Reach of the Housatonic River. The monitoring work was performed under an existing contract for Weston Solutions, Inc. (Weston) by Woodlot.

Spring 2005

Photo 1: Phase 1 Area – Woody Vegetation

30 Park Drive Topsham, Maine 04086 Phone 207-729-1199 Fax 207-729-2715

Photo 2: Phase 1 Area – Woody and Herbaceous Vegetation

Photo 3: Phase 1 Area - Herbaceous and Woody Vegetation

Photo 4: Transition Phase Area

Photo 5: Phase 2 Area – Herbaceous and Woody Vegetation

Photo 6: Phase 2 Area

Summer 2005

Photo 7: Phase 1 Area – Dense Herbaceous Vegetation

Photo 8: Phase 1 Area - Animal Burrow

Photo 9: Phase 1 Area – Herbaceous Vegetation

Photo 10: Transition Phase – Herbaceous and Woody Vegetation

Photo 11: Phase 2 Area - Herbaceous and Woody Vegetation

Photo 12: Phase 2 Area (west bank) – Hedge false bindweed [*Calystegia sepium* (also referred to as false morning glory)]

Appendix D

Spring 2005 Inspection Maps and Data

Revegetation Monitoring Field Form

1.5 Mile Reach, GE/Housatonic River Site, Pittsfield, MA Page ___ of ___

Observer(s): MVC, AMF Date: 5-18-05
Phase: 1 Flow @ Coltsville (cfs) 49 Weather: ___

Planting Area Location: 1
Riverbank Length (ft): 20 Avg width (ft): 19
Planting Area (sf): ___ 10-20% Area (sf): ___
Comments:

Random Sample Location Number: 1 Riverbank length (ft): 20 Width (ft): 19
Slope length (ft): ___ Sample Area (sf): ___

Plant Survivorship:

Trees	*Quantity (live)*	*Total*	*Shrubs*	*Quantity (live)*	*Total*
Black Willow			Red-osier Dogwood	3	
Silver Maple			Silky Dogwood	11 | 111	
Eastern Cottonwood			Winterberry Holly	1	
Box Elder	1		Chokecherry	111	
			Northern Arrowwood	1	

Total Live Trees: ___ **Total Live Shrubs:** ___

Herbaceous Cover (%): ___ NOT DONE FOR SPRING

Invasive Plant Cover (%): ___

Meander Survey Comments (Use Additional Sheets As Necessary):

(1) ROD HURRIVANE DAMAGE TO BASE/
PLANT HEALTH GOOD EXCEPT FOR ABOVE
2 PHOTOS

WOODLOT ALTERNATIVES, INC.

Revegetation Monitoring Field Form

1.5 Mile Reach, GE/Housatonic River Site, Pittsfield, MA Page ___ of ___

Observer(s): _____ Date: 8-18-05
Phase: 1 Flow @ Coltsville (cfs) _____ Weather: _____

Planting Area Location: _____
Riverbank Length (ft): _____ Avg width (ft): _____
Planting Area (sf): _____ 10-20% Area (sf): _____
Comments:

Random Sample Location Number: 2 Riverbank length (ft): 20 Width (ft): 16.6
Slope length (ft): _____ Sample Area (sf): _____

Plant Survivorship:

Trees	*Quantity (live)*	*Total*	*Shrubs*	*Quantity (live)*	*Total*
Black Willow	16 | | |		Red-osier Dogwood	|	
Silver Maple	| |		Silky Dogwood	|	
Eastern Cottonwood	| |		Winterberry Holly		
Box Elder	|		Chokecherry		
			Northern Arrowwood		

Total Live Trees: _____ **Total Live Shrubs:** _____

Herbaceous Cover (%): _____

Invasive Plant Cover (%): _____

Meander Survey Comments (Use Additional Sheets As Necessary):

VINE from BASE on Slope

2 PHOTOS

Revegetation Monitoring Field Form

1.5 Mile Reach, GE/Housatonic River Site, Pittsfield, MA Page ___ of _____

Observer(s):_____ Date: 5-18-05
Phase: 1 Flow @ Coltsville (cfs)_____ Weather: _____

Planting Area Location: 3
Riverbank Length (ft): _____ Avg width (ft): 13
Planting Area (sf):_____ 10-20% Area (sf):_____
Comments:

Random Sample Location Number: 3 Riverbank length (ft): 20 Width (ft): 15
Slope length (ft):_____ Sample Area (sf): _____

Plant Survivorship:

Trees	*Quantity (live)*	*Total*	*Shrubs*	*Quantity (live)*	*Total*
Black Willow	11		Red-osier Dogwood	3	
Silver Maple			Silky Dogwood	1111½	
Eastern Cottonwood			Winterberry Holly	1111	
Box Elder	1		Chokecherry	11	
			Northern Arrowwood	1	

Total Live Trees:_____ **Total Live Shrubs:**_____

Herbaceous Cover (%):_____

Invasive Plant Cover (%):_____

Meander Survey Comments (Use Additional Sheets As Necessary):

MINOR BROWSE (1 TSW

2 Photos

Revegetation Monitoring Field Form

1.5 Mile Reach, GE/Housatonic River Site, Pittsfield, MA Page ___ of _____

Observer(s):_____ Date: 5-18-05
Phase: 1 Flow @ Coltsville (cfs)_____ Weather: _____

Planting Area Location: 4
Riverbank Length (ft): _____ Avg width (ft):_____
Planting Area (sf):_____ 10-20% Area (sf):_____
Comments:

Random Sample Location Number: 4 Riverbank length (ft): 20 Width (ft): 9
Slope length (ft):_____ Sample Area (sf): _____

Plant Survivorship:

Trees	*Quantity (live)*	*Total*	*Shrubs*	*Quantity (live)*	*Total*
Black Willow			Red-osier Dogwood		
Silver Maple	1 1		Silky Dogwood		
Eastern Cottonwood	1 1 1 1 1		Winterberry Holly		
Box Elder			Chokecherry		
			Northern Arrowwood		

Total Live Trees:_____ **Total Live Shrubs:**_____

Herbaceous Cover (%):_____

Invasive Plant Cover (%):_____

Meander Survey Comments (Use Additional Sheets As Necessary):

3 Photos

Revegetation Monitoring Field Form

1.5 Mile Reach, GE/Housatonic River Site, Pittsfield, MA Page ___ of _____

Observer(s):_____ Date: 5-18-05
Phase: 1 Flow @ Coltsville (cfs)_____ Weather: _____

Planting Area Location:_____
Riverbank Length (ft): _____ Avg width (ft):_____
Planting Area (sf):_____ 10-20% Area (sf):_____
Comments:

Random Sample Location Number: 5 Riverbank length (ft): 20 Width (ft): 13
Slope length (ft):_____ Sample Area (sf): _____

Plant Survivorship:

Trees	*Quantity (live)*	*Total*	*Shrubs*	*Quantity (live)*	*Total*
Black Willow			Red-osier Dogwood	11 1	
Silver Maple	1 1		Silky Dogwood	1 1 1	
Eastern Cottonwood			Winterberry Holly		
Box Elder	1 1		Chokecherry	1	
			Northern Arrowwood	1 1	

Total Live Trees:_____ **Total Live Shrubs:**_____

Herbaceous Cover (%):_____

Invasive Plant Cover (%):_____

Meander Survey Comments (Use Additional Sheets As Necessary):

2 Photos

Revegetation Monitoring Field Form

1.5 Mile Reach, GE/Housatonic River Site, Pittsfield, MA Page ___ of _____

Observer(s):_____ Date: 5-18-05
Phase: 1 Flow @ Coltsville (cfs)_____ Weather: _____

Planting Area Location:_____
Riverbank Length (ft): _____ Avg width (ft):_____
Planting Area (sf):_____ 10-20% Area (sf):_____
Comments:

Random Sample Location Number: 6 Riverbank length (ft): 20 Width (ft): 16
Slope length (ft):_____ Sample Area (sf): _____

Plant Survivorship:

Trees	*Quantity (live)*	*Total*	*Shrubs*	*Quantity (live)*	*Total*
Black Willow	111		Red-osier Dogwood		
Silver Maple	11		Silky Dogwood		
Eastern Cottonwood			Winterberry Holly		
Box Elder	11		Chokecherry		
			Northern Arrowwood		

Total Live Trees:_____ **Total Live Shrubs:**_____

Herbaceous Cover (%):_____

Invasive Plant Cover (%):_____

Meander Survey Comments (Use Additional Sheets As Necessary):

VISUAL OBSERVATIONS SUGGEST MINIMAL TREE/SHRUB COVERAGE

2 photos + 1 photo of grape

WOODLOT ALTERNATIVES, INC.

Revegetation Monitoring Field Form

1.5 Mile Reach, GE/Housatonic River Site, Pittsfield, MA Page ___ of ____

Observer(s):_____ Date: 5-18-05
Phase: 1 Flow @ Coltsville (cfs)_____ Weather: _____

Planting Area Location:_____
Riverbank Length (ft): _____ Avg width (ft):_____
Planting Area (sf):_____ 10-20% Area (sf):_____
Comments:

Random Sample Location Number: 7 Riverbank length (ft): 20 Width (ft): 12
Slope length (ft):_____ Sample Area (sf): _____

Plant Survivorship:

Trees	*Quantity (live)*	*Total*	*Shrubs*	*Quantity (live)*	*Total*
Black Willow			Red-osier Dogwood	1 1	
Silver Maple			Silky Dogwood	1 1	
Eastern Cottonwood			Winterberry Holly		
Box Elder			Chokecherry	1 (D)	
	1 (D) NO ID		Northern Arrowwood	1 1 1	

1 (D) NO ID

Total Live Trees:_____ **Total Live Shrubs:**_____

Herbaceous Cover (%):_____

Invasive Plant Cover (%):_____

Meander Survey Comments (Use Additional Sheets As Necessary):

2 Photos + 1 of Tall "woods"

Revegetation Monitoring Field Form

1.5 Mile Reach, GE/Housatonic River Site, Pittsfield, MA Page ___ of _____

Observer(s):_____ Date: 5-18-05
Phase: 1 Flow @ Coltsville (cfs)_____ Weather: _____

Planting Area Location:_____
Riverbank Length (ft): _____ Avg width (ft):_____
Planting Area (sf):_____ 10-20% Area (sf):_____
Comments:

Random Sample Location Number: 8 Riverbank length (ft): 20 Width (ft): 10
Slope length (ft):_____ Sample Area (sf): _____

Plant Survivorship:

Trees	*Quantity (live)*	*Total*	*Shrubs*	*Quantity (live)*	*Total*
Black Willow	11		Red-osier Dogwood		
Silver Maple	1111		Silky Dogwood		
Eastern Cottonwood	1 1		Winterberry Holly		
Box Elder			Chokecherry		
			Northern Arrowwood		

Total Live Trees:_____ **Total Live Shrubs:**_____

Herbaceous Cover (%):_____

Invasive Plant Cover (%):_____

Meander Survey Comments (Use Additional Sheets As Necessary):

2 Photos

Revegetation Monitoring Field Form

1.5 Mile Reach, GE/Housatonic River Site, Pittsfield, MA Page ___ of ____

Observer(s):_____ Date: 5-18-05
Phase: 1 Flow @ Coltsville (cfs)_____ Weather: _____

Planting Area Location: 9
Riverbank Length (ft): 20 Avg width (ft):_____
Planting Area (sf):_____ 10-20% Area (sf):_____
Comments:

Random Sample Location Number: 9 Riverbank length (ft): 20 Width (ft): 24
Slope length (ft):_____ Sample Area (sf): _____

Plant Survivorship:

Trees	*Quantity (live)*	*Total*	*Shrubs*	*Quantity (live)*	*Total*
Black Willow			Red-osier Dogwood	4	
Silver Maple			Silky Dogwood	2	
Eastern Cottonwood	4		Winterberry Holly	3 (S) 2 (S)	
Box Elder			Chokecherry	3	
			Northern Arrowwood	1	

Total Live Trees: 4 **Total Live Shrubs:**_____

Herbaceous Cover (%):_____

Invasive Plant Cover (%):_____

Meander Survey Comments (Use Additional Sheets As Necessary):

- Some herbivory
- Some Shrubs Doing Poorly
- NO READILY DISTINGUISHABLE BAND
- 2 photos of DAMAGE
- MUCH ANTHROPOGENIC DAMAGE TO PLANTS IMMEDIATELY DS.

WOODLOT ALTERNATIVES, INC.

Revegetation Monitoring Field Form

1.5 Mile Reach, GE/Housatonic River Site, Pittsfield, MA Page ___ of ____

Observer(s):_____ Date: 5-18-05
Phase: 1 Flow @ Coltsville (cfs)_____ Weather: _____

Planting Area Location:_____
Riverbank Length (ft): _____ Avg width (ft):_____
Planting Area (sf):_____ 10-20% Area (sf):_____
Comments:

Random Sample Location Number: 10 Riverbank length (ft): 20 Width (ft): 18
Slope length (ft):_____ Sample Area (sf): _____

Plant Survivorship:

Trees	*Quantity (live)*	*Total*	*Shrubs*	*Quantity (live)*	*Total*
Black Willow	1		Red-osier Dogwood		
Silver Maple	1111		Silky Dogwood		
Eastern Cottonwood			Winterberry Holly		
Box Elder	1HT		Chokecherry		
			Northern Arrowwood		

Total Live Trees:_____ **Total Live Shrubs:**_____

Herbaceous Cover (%):_____

Invasive Plant Cover (%):_____

Meander Survey Comments (Use Additional Sheets As Necessary):

BETWEEN TRASH RACK @ DAM - LAST PHOTO 1 FACE ON WEST (RCR) SIDE)

2 Photos

Revegetation Monitoring Field Form

1.5 Mile Reach, GE/Housatonic River Site, Pittsfield, MA Page ___ of ____

Observer(s):_____ Date: 5-18-05
Phase: 1 Flow @ Coltsville (cfs)_____ Weather: _____

Planting Area Location:_____
Riverbank Length (ft): _____ Avg width (ft):_____
Planting Area (sf):_____ 10-20% Area (sf):_____
Comments:

Random Sample Location Number: 11 Riverbank length (ft): 20 Width (ft): 16
Slope length (ft):_____ Sample Area (sf): _____

Plant Survivorship:

Trees	*Quantity (live)*	*Total*	*Shrubs*	*Quantity (live)*	*Total*
Black Willow			Red-osier Dogwood		
Silver Maple	IIII		Silky Dogwood		
Eastern Cottonwood	I		Winterberry Holly		
Box Elder	IIII		Chokecherry		
			Northern Arrowwood		

Total Live Trees:_____ **Total Live Shrubs:**_____

Herbaceous Cover (%):_____

Invasive Plant Cover (%):_____

Meander Survey Comments (Use Additional Sheets As Necessary):

- 2 Volunteer Shrubs at Top of Slope - Apparently outside of Low → NOT COUNTED

Revegetation Monitoring Field Form

1.5 Mile Reach, GE/Housatonic River Site, Pittsfield, MA Page ___ of _____

Observer(s):_____ Date: 5-18-05

Phase: 1 Flow @ Coltsville (cfs)_____ Weather: _____

Planting Area Location:_____

Riverbank Length (ft): _____ Avg width (ft):_____

Planting Area (sf):_____ 10-20% Area (sf):_____

Comments:

Random Sample Location Number: 12 Riverbank length (ft): 20 Width (ft): 11

Slope length (ft):_____ Sample Area (sf): _____

Plant Survivorship:

Trees	*Quantity (live)*	*Total*	*Shrubs*	*Quantity (live)*	*Total*
Black Willow			Red-osier Dogwood		
Silver Maple	1 1 1		Silky Dogwood		
Eastern Cottonwood	1 1		Winterberry Holly		
Box Elder	(6) (4) (5)		Chokecherry		
			Northern Arrowwood		

Total Live Trees:_____ **Total Live Shrubs:**_____

Herbaceous Cover (%):_____

Invasive Plant Cover (%):_____

Meander Survey Comments (Use Additional Sheets As Necessary):

Picture Notes - LAST @ 12

Revegetation Monitoring Field Form

1.5 Mile Reach, GE/Housatonic River Site, Pittsfield, MA Page ___ of ____

Observer(s):_____ Date: 5-18-05
Phase: 1 Flow @ Coltsville (cfs)_____ Weather: _____

Planting Area Location:_____
Riverbank Length (ft): _____ Avg width (ft):_____
Planting Area (sf):_____ 10-20% Area (sf):_____
Comments:

Random Sample Location Number: 13 Riverbank length (ft): 20 Width (ft): 22
Slope length (ft):_____ Sample Area (sf): _____

Plant Survivorship:

Trees	*Quantity (live)*	*Total*	*Shrubs*	*Quantity (live)*	*Total*
Black Willow			Red-osier Dogwood		
Silver Maple	III		Silky Dogwood		
Eastern Cottonwood	II		Winterberry Holly		
Box Elder	IIII (5)		Chokecherry		
			Northern Arrowwood		

Total Live Trees:_____ **Total Live Shrubs:**_____

Herbaceous Cover (%):_____

Invasive Plant Cover (%):_____

Meander Survey Comments (Use Additional Sheets As Necessary):

- VS. OF SWALE

- OBSERVED DEAD BITTERSWEET

Revegetation Monitoring Field Form

1.5 Mile Reach, GE/Housatonic River Site, Pittsfield, MA Page ___ of ____

Observer(s):_____ Date: 5-18-05
Phase: 1 Flow @ Coltsville (cfs)_____ Weather: _____

Planting Area Location:_____
Riverbank Length (ft): _____ Avg width (ft):_____
Planting Area (sf):_____ 10-20% Area (sf):_____
Comments:

Random Sample Location Number: 14 Riverbank length (ft): 20 Width (ft): 28
Slope length (ft):_____ Sample Area (sf): _____

Plant Survivorship:

Trees	***Quantity (live)***	***Total***	***Shrubs***	***Quantity (live)***	***Total***
Black Willow	1 1 (H) (H)		Red-osier Dogwood		
Silver Maple	||||		Silky Dogwood		
Eastern Cottonwood			Winterberry Holly		
Box Elder	|||| (V) |		Chokecherry		
		1	Northern Arrowwood		

Total Live Trees:_____ **Total Live Shrubs:**_____

Herbaceous Cover (%):_____

Invasive Plant Cover (%):_____

Meander Survey Comments (Use Additional Sheets As Necessary):

Revegetation Monitoring Field Form

1.5 Mile Reach, GE/Housatonic River Site, Pittsfield, MA Page ___ of _____

Observer(s):_____ Date: 5-18-05
Phase: 1 Flow @ Coltsville (cfs)_____ Weather: _____

Planting Area Location:_____
Riverbank Length (ft): _____ Avg width (ft):_____
Planting Area (sf):_____ 10-20% Area (sf):_____
Comments:

Random Sample Location Number: 15 Riverbank length (ft): 20 Width (ft): 26
Slope length (ft):_____ Sample Area (sf): _____

Plant Survivorship:

Trees	***Quantity (live)***	***Total***	***Shrubs***	***Quantity (live)***	***Total***
Black Willow	11		Red-osier Dogwood		
Silver Maple	11 11		Silky Dogwood		
Eastern Cottonwood	11 11		Winterberry Holly		
Box Elder	11		Chokecherry		
			Northern Arrowwood		

Total Live Trees:_____ **Total Live Shrubs:**_____

Herbaceous Cover (%):_____

Invasive Plant Cover (%):_____

Meander Survey Comments (Use Additional Sheets As Necessary):

- TRIM CRUSHED SCREEN FROM WILLOWS AT TOE OF SLOPE

Revegetation Monitoring Field Form

1.5 Mile Reach, GE/Housatonic River Site, Pittsfield, MA Page ___ of ____

Observer(s):_____ Date: 5-18-05

Phase: 1 Flow @ Coltsville (cfs)_____ Weather: _____

Planting Area Location:_____

Riverbank Length (ft): _____ Avg width (ft):_____

Planting Area (sf):_____ 10-20% Area (sf):_____

Comments:

Random Sample Location Number: 16 Riverbank length (ft): 20 Width (ft): 26

Slope length (ft):_____ Sample Area (sf): _____

Plant Survivorship:

Trees	*Quantity (live)*	*Total*	*Shrubs*	*Quantity (live)*	*Total*
Black Willow	11 (2V)		Red-osier Dogwood	111 (4)	
Silver Maple			Silky Dogwood	HH 1	
Eastern Cottonwood			Winterberry Holly		
Box Elder			Chokecherry	1	
			Northern Arrowwood	HH (5) 111	

Total Live Trees:_____ **Total Live Shrubs:** 10 UFO

Herbaceous Cover (%):_____

Invasive Plant Cover (%):_____

Meander Survey Comments (Use Additional Sheets As Necessary):

2 Photos, Same H

Revegetation Monitoring Field Form

1.5 Mile Reach, GE/Housatonic River Site, Pittsfield, MA Page ___ of ____

Observer(s):_____ Date: 5-18-05
Phase: 1 Flow @ Coltsville (cfs)_____ Weather: _____

Planting Area Location:_____
Riverbank Length (ft): _____ Avg width (ft):_____
Planting Area (sf):_____ 10-20% Area (sf):_____
Comments:

Random Sample Location Number: 17 Riverbank length (ft): 20 Width (ft): 30
Slope length (ft):_____ Sample Area (sf): _____

Plant Survivorship:

Trees	***Quantity (live)***	***Total***	***Shrubs***	***Quantity (live)***	***Total***
Black Willow	III		Red-osier Dogwood	I	
Silver Maple	IIII		Silky Dogwood		
Eastern Cottonwood	II		Winterberry Holly		
Box Elder	5+++ I (V)(V)		Chokecherry		
			Northern Arrowwood	I	

Total Live Trees:_____ **Total Live Shrubs:**_____

Herbaceous Cover (%):_____

Invasive Plant Cover (%):_____

Meander Survey Comments (Use Additional Sheets As Necessary):

(2) Box Elder Volunteers Not Counted AT Type of Style
(1) Acer " " " " " "

Revegetation Monitoring Field Form

1.5 Mile Reach, GE/Housatonic River Site, Pittsfield, MA Page ___ of ____

Observer(s):_____ Date: 5-18-05

Phase: 1 Flow @ Coltsville (cfs)_____ Weather: _____

Planting Area Location:_____

Riverbank Length (ft): _____ Avg width (ft):_____

Planting Area (sf):_____ 10-20% Area (sf):_____

Comments:

Random Sample Location Number: 18 Riverbank length (ft): 20 Width (ft): 32

Slope length (ft):_____ Sample Area (sf): _____

Plant Survivorship:

Trees	***Quantity (live)***	***Total***	***Shrubs***	***Quantity (live)***	***Total***
Black Willow			Red-osier Dogwood	IIII	
Silver Maple			Silky Dogwood	I III	
Eastern Cottonwood	I		Winterberry Holly		
Box Elder	IIIII VVVV		Chokecherry	III	
			Northern Arrowwood	III	

Total Live Trees:_____ **Total Live Shrubs:**_____

Herbaceous Cover (%):_____

Invasive Plant Cover (%):_____

Meander Survey Comments (Use Additional Sheets As Necessary):

2 photos

4 volunteer Acer at Base of Slope - Not Counted

Revegetation Monitoring Field Form

1.5 Mile Reach, GE/Housatonic River Site, Pittsfield, MA Page ___ of ____

Observer(s):_____ Date: 5-18-05
Phase: 1 Flow @ Coltsville (cfs)_____ Weather: _____

Planting Area Location:_____
Riverbank Length (ft): _____ Avg width (ft):_____
Planting Area (sf):_____ 10-20% Area (sf):_____
Comments:

Random Sample Location Number: 19 Riverbank length (ft): 20 Width (ft): 15
Slope length (ft):_____ Sample Area (sf): _____

Plant Survivorship:

Trees	*Quantity (live)*	*Total*	*Shrubs*	*Quantity (live)*	*Total*
Black Willow	1		Red-osier Dogwood	III HH	
Silver Maple			Silky Dogwood	II	
Eastern Cottonwood			Winterberry Holly	1 S	
Box Elder	1 V		Chokecherry	HHH 1	
			Northern Arrowwood		

Total Live Trees:_____ **Total Live Shrubs:**_____

Herbaceous Cover (%):_____

Invasive Plant Cover (%):_____

Meander Survey Comments (Use Additional Sheets As Necessary):

IMMEDIATELY DS OF INFLOWING STREAM
2 Plants

Revegetation Monitoring Field Form

1.5 Mile Reach, GE/Housatonic River Site, Pittsfield, MA Page ___ of ____

Observer(s): _____ Date: 5-18-05

Phase: 1 Flow @ Coltsville (cfs)_____ Weather: _____

Planting Area Location: _____

Riverbank Length (ft): _____ Avg width (ft): _____

Planting Area (sf): _____ 10-20% Area (sf): _____

Comments:

Random Sample Location Number: 20 Riverbank length (ft): 20 Width (ft): 16

Slope length (ft): _____ Sample Area (sf): _____

Plant Survivorship:

Trees	***Quantity (live)***	***Total***	***Shrubs***	***Quantity (live)***	***Total***
Black Willow	11		Red-osier Dogwood		
Silver Maple	11		Silky Dogwood		
Eastern Cottonwood	1		Winterberry Holly		
Box Elder	1		Chokecherry		
			Northern Arrowwood		

Total Live Trees: _____ **Total Live Shrubs:** _____

Herbaceous Cover (%): _____

Invasive Plant Cover (%): _____

Meander Survey Comments (Use Additional Sheets As Necessary):

- SOUTH SLOPE OF DITCH
- 2 PLOTS
- KNOTWEED ADJACENT TO TOP OF SLOPE

WOODLOT ALTERNATIVES, INC. ENVIRONMENTAL CONSULTANTS

Revegetation Monitoring Field Form

1.5 Mile Reach, GE/Housatonic River Site, Pittsfield, MA Page ___ of ____

Observer(s):_____ Date: 5-18-05

Phase: 1 Flow @ Coltsville (cfs)_____ Weather: _____

Planting Area Location:_____

Riverbank Length (ft): _____ Avg width (ft):_____

Planting Area (sf):_____ 10-20% Area (sf):_____

Comments:

Random Sample Location Number: 21 Riverbank length (ft): 20 Width (ft): 10

Slope length (ft):_____ Sample Area (sf): _____

H = Herbivory
V = Vandalism

Plant Survivorship:

Trees	*Quantity (live)*	*Total*	*Shrubs*	*Quantity (live)*	*Total*
Black Willow	1 H		Red-osier Dogwood		
Silver Maple	1		Silky Dogwood		
Eastern Cottonwood			Winterberry Holly		
Box Elder			Chokecherry		
			Northern Arrowwood		

Total Live Trees:_____ **Total Live Shrubs:**_____

Herbaceous Cover (%):_____

Invasive Plant Cover (%):_____

Meander Survey Comments (Use Additional Sheets As Necessary):

- NORTH SIDE OF DITCH @ WEST END
- TRIM TREE GUARD AROUND MAPLE

Revegetation Monitoring Field Form

1.5 Mile Reach, GE/Housatonic River Site, Pittsfield, MA Page ___ of ____

Observer(s):_____ Date: 5-18-05
Phase: 1 Flow @ Coltsville (cfs)_____ Weather: _____

Planting Area Location:_____
Riverbank Length (ft): _____ Avg width (ft):_____
Planting Area (sf):_____ 10-20% Area (sf):_____
Comments:

Random Sample Location Number: 22 Riverbank length (ft): 20 Width (ft): 6
Slope length (ft):_____ Sample Area (sf): _____

Plant Survivorship:

Trees	***Quantity (live)***	***Total***	***Shrubs***	***Quantity (live)***	***Total***
Black Willow			Red-osier Dogwood	11	
Silver Maple			Silky Dogwood	1111	
Eastern Cottonwood			Winterberry Holly		
Box Elder			Chokecherry	1	
			Northern Arrowwood		

Total Live Trees:_____ **Total Live Shrubs:**_____

Herbaceous Cover (%):_____

Invasive Plant Cover (%):_____

Meander Survey Comments (Use Additional Sheets As Necessary):

104141 - Spring 2005

Revegetation Monitoring Field Form

1.5 Mile Reach, GE/Housatonic River Site, Pittsfield, MA Page ___ of ____

Observer(s): MRC, AMF Date: 5-18-05

Phase: _____ Flow @ Coltsville (cfs) 49 Weather: _____

Planting Area Location: TRANSITION

Riverbank Length (ft): _____ Avg width (ft): _____

Planting Area (sf): _____ 10-20% Area (sf): _____

Comments:

Random Sample Location Number: 100 Riverbank length (ft): 20 Width (ft): 14

Slope length (ft): _____ Sample Area (sf): _____

Plant Survivorship:

Trees	*Quantity (live)*	*Total*	*Shrubs*	*Quantity (live)*	*Total*
Black Willow			Red-osier Dogwood	111	
Silver Maple			Silky Dogwood		
Eastern Cottonwood	111		Winterberry Holly		
Box Elder			Chokecherry		
			Northern Arrowwood		

Total Live Trees: _____ **Total Live Shrubs:** _____

Herbaceous Cover (%): _____ NOT DONE FOR SPRING

Invasive Plant Cover (%): _____

Meander Survey Comments (Use Additional Sheets As Necessary):

2 PHOTOS

WOODLOT ALTERNATIVES, INC. ENVIRONMENTAL CONSULTANTS

Revegetation Monitoring Field Form

1.5 Mile Reach, GE/Housatonic River Site, Pittsfield, MA Page ___ of ____

Observer(s):_____ Date: 5-18-05

Phase: _____ Flow @ Coltsville (cfs)_____ Weather: _____

Planting Area Location: TRANSITION

Riverbank Length (ft): _____ Avg width (ft):_____

Planting Area (sf):_____ 10-20% Area (sf):_____

Comments:

Random Sample Location Number: 101 Riverbank length (ft): 20 Width (ft): 10

Slope length (ft):_____ Sample Area (sf): _____

Plant Survivorship:

Trees	***Quantity (live)***	***Total***	***Shrubs***	***Quantity (live)***	***Total***
Black Willow			Red-osier Dogwood		
Silver Maple	111		Silky Dogwood	1	
Eastern Cottonwood	1		Winterberry Holly		
Box Elder	1		Chokecherry		
			Northern Arrowwood		

Total Live Trees:_____ **Total Live Shrubs:**_____

Herbaceous Cover (%):_____

Invasive Plant Cover (%):_____

Meander Survey Comments (Use Additional Sheets As Necessary):

Revegetation Monitoring Field Form

1.5 Mile Reach, GE/Housatonic River Site, Pittsfield, MA Page ___ of ___

Observer(s):_____ Date: 5-18-05

Phase: _____ Flow @ Coltsville (cfs)_____ Weather: _____

Planting Area Location: TRANSITION

Riverbank Length (ft): _____ Avg width (ft):_____

Planting Area (sf):_____ 10-20% Area (sf):_____

Comments:

Random Sample Location Number: 102 Riverbank length (ft): 20 Width (ft): 12

Slope length (ft):_____ Sample Area (sf): _____

Plant Survivorship:

Trees	***Quantity (live)***	***Total***	***Shrubs***	***Quantity (live)***	***Total***
Black Willow			Red-osier Dogwood	11	
Silver Maple	1		Silky Dogwood	1	
Eastern Cottonwood	1		Winterberry Holly		
Box Elder			Chokecherry		
			Northern Arrowwood		

Total Live Trees:_____ **Total Live Shrubs:**_____

Herbaceous Cover (%):_____

Invasive Plant Cover (%):_____

Meander Survey Comments (Use Additional Sheets As Necessary):

- Some Dogwoods Need Staking

Revegetation Monitoring Field Form

1.5 Mile Reach, GE/Housatonic River Site, Pittsfield, MA Page ___ of ____

Observer(s):_____ Date: 5-18-05
Phase: _____ Flow @ Coltsville (cfs)_____ Weather: _____

Planting Area Location: TRANSITION
Riverbank Length (ft): _____ Avg width (ft):_____
Planting Area (sf):_____ 10-20% Area (sf):_____
Comments:

Random Sample Location Number: 103 Riverbank length (ft): 20 Width (ft): 9
Slope length (ft):_____ Sample Area (sf): 6

Plant Survivorship:

Trees	***Quantity (live)***	***Total***	***Shrubs***	***Quantity (live)***	***Total***
Black Willow			Red-osier Dogwood	11	
Silver Maple			Silky Dogwood	111	
Eastern Cottonwood			Winterberry Holly		
Box Elder	11		Chokecherry		
			Northern Arrowwood		

Total Live Trees:_____ **Total Live Shrubs:**_____

Herbaceous Cover (%):_____

Invasive Plant Cover (%):_____

Meander Survey Comments (Use Additional Sheets As Necessary):

Revegetation Monitoring Field Form

1.5 Mile Reach, GE/Housatonic River Site, Pittsfield, MA Page ___ of ___

Observer(s): _____ Date: 5-18-05

Phase: _____ Flow @ Coltsville (cfs) _____ Weather: _____

Planting Area Location: TRANSITION

Riverbank Length (ft): _____ Avg width (ft): _____

Planting Area (sf): _____ 10-20% Area (sf): _____

Comments:

Random Sample Location Number: 104 Riverbank length (ft): 20 Width (ft): 22

Slope length (ft): _____ Sample Area (sf): _____

Plant Survivorship:

Trees	*Quantity (live)*	*Total*	*Shrubs*	*Quantity (live)*	*Total*
Black Willow			Red-osier Dogwood	1111	
Silver Maple	1		Silky Dogwood	1	
Eastern Cottonwood			Winterberry Holly		
Box Elder	1		Chokecherry		
			Northern Arrowwood		

(3) ACSYR VOLUNTEER

Total Live Trees: _____ **Total Live Shrubs:** _____

Herbaceous Cover (%): _____

Invasive Plant Cover (%): _____

Meander Survey Comments (Use Additional Sheets As Necessary):

- SMALL Volunteer ACSYR
- Bittersweet @ Top & Slope

Revegetation Monitoring Field Form

1.5 Mile Reach, GE/Housatonic River Site, Pittsfield, MA Page ___ of ____

Observer(s):_____ Date: 5-18-05

Phase: _____ Flow @ Coltsville (cfs)_____ Weather: _____

Planting Area Location: TRANSITION

Riverbank Length (ft): _____ Avg width (ft):_____

Planting Area (sf):_____ 10-20% Area (sf):_____

Comments:

Random Sample Location Number: 105 Riverbank length (ft): 20 Width (ft): 21

Slope length (ft):_____ Sample Area (sf): _____

Plant Survivorship:

Trees	*Quantity (live)*	*Total*	*Shrubs*	*Quantity (live)*	*Total*
Black Willow			Red-osier Dogwood	11	
Silver Maple			Silky Dogwood	1111	
Eastern Cottonwood			Winterberry Holly		
Box Elder	11		Chokecherry		
			Northern Arrowwood		

Total Live Trees:_____ **Total Live Shrubs:**_____

Herbaceous Cover (%):_____

Invasive Plant Cover (%):_____

Meander Survey Comments (Use Additional Sheets As Necessary):

Revegetation Monitoring Field Form

1.5 Mile Reach, GE/Housatonic River Site, Pittsfield, MA Page ___ of ____

Observer(s):_____ Date: 5 - 18 - 05

Phase: _____ Flow @ Coltsville (cfs)_____ Weather: _____

Planting Area Location: TRANSITION

Riverbank Length (ft): _____ Avg width (ft):_____

Planting Area (sf):_____ 10-20% Area (sf):_____

Comments:

Random Sample Location Number: 106 Riverbank length (ft): 20 Width (ft): 18.6

Slope length (ft):_____ Sample Area (sf): _____

Plant Survivorship:

Trees	*Quantity (live)*	*Total*	*Shrubs*	*Quantity (live)*	*Total*
Black Willow			Red-osier Dogwood	1	
Silver Maple			Silky Dogwood	1 1	
Eastern Cottonwood			Winterberry Holly		
Box Elder	1		Chokecherry		
			Northern Arrowwood		

Total Live Trees:_____ **Total Live Shrubs:**_____

Herbaceous Cover (%):_____

Invasive Plant Cover (%):_____

Meander Survey Comments (Use Additional Sheets As Necessary):

AREA APPEARS TO BE SHORT ON PLANTS

Revegetation Monitoring Field Form

1.5 Mile Reach, GE/Housatonic River Site, Pittsfield, MA Page ___ of ____

Observer(s):_____ Date: 5-18-05

Phase: _____ Flow @ Coltsville (cfs)_____ Weather: _____

Planting Area Location: TRANSITION

Riverbank Length (ft): _____ Avg width (ft):_____

Planting Area (sf):_____ 10-20% Area (sf):_____

Comments:

Random Sample Location Number: 107 Riverbank length (ft): 20 Width (ft): 15

Slope length (ft):_____ Sample Area (sf): _____

Plant Survivorship:

Trees	***Quantity (live)***	***Total***	***Shrubs***	***Quantity (live)***	***Total***
Black Willow			Red-osier Dogwood	111	
Silver Maple			Silky Dogwood	11	
Eastern Cottonwood			Winterberry Holly		
Box Elder	11		Chokecherry		
			Northern Arrowwood		

Total Live Trees:_____ **Total Live Shrubs:**_____

Herbaceous Cover (%):_____

Invasive Plant Cover (%):_____

Meander Survey Comments (Use Additional Sheets As Necessary):

2 photos

104141 - Spring 2005

Revegetation Monitoring Field Form

1.5 Mile Reach, GE/Housatonic River Site, Pittsfield, MA Page ___ of ____

Observer(s): MRC, AMF Date: 5-18-05

Phase: _____ Flow @ Coltsville (cfs) 49 Weather: _____

Planting Area Location: TRANSITION

Riverbank Length (ft): _____ Avg width (ft): _____

Planting Area (sf): _____ 10-20% Area (sf): _____

Comments:

Random Sample Location Number: 100 Riverbank length (ft): 20 Width (ft): 14

Slope length (ft): _____ Sample Area (sf): _____

Plant Survivorship:

Trees	*Quantity (live)*	*Total*	*Shrubs*	*Quantity (live)*	*Total*
Black Willow			Red-osier Dogwood	111	
Silver Maple			Silky Dogwood		
Eastern Cottonwood	111		Winterberry Holly		
Box Elder			Chokecherry		
			Northern Arrowwood		

Total Live Trees: _____ **Total Live Shrubs:** _____

Herbaceous Cover (%): _____ NOT DONE FOR SPRING

Invasive Plant Cover (%): _____

Meander Survey Comments (Use Additional Sheets As Necessary):

2 PHOTOS

WOODLOT ALTERNATIVES, INC. ENVIRONMENTAL CONSULTANTS

Revegetation Monitoring Field Form

1.5 Mile Reach, GE/Housatonic River Site, Pittsfield, MA Page ___ of ____

Observer(s):_____ Date: 5-18-05

Phase: _____ Flow @ Coltsville (cfs)_____ Weather: _____

Planting Area Location: TRANSITION

Riverbank Length (ft): _____ Avg width (ft):_____

Planting Area (sf):_____ 10-20% Area (sf):_____

Comments:

Random Sample Location Number: 101 Riverbank length (ft): 20 Width (ft): 10

Slope length (ft):_____ Sample Area (sf): _____

Plant Survivorship:

Trees	***Quantity (live)***	***Total***	***Shrubs***	***Quantity (live)***	***Total***
Black Willow			Red-osier Dogwood		
Silver Maple	111		Silky Dogwood	1	
Eastern Cottonwood	1		Winterberry Holly		
Box Elder	1		Chokecherry		
			Northern Arrowwood		

Total Live Trees:_____ **Total Live Shrubs:**_____

Herbaceous Cover (%):_____

Invasive Plant Cover (%):_____

Meander Survey Comments (Use Additional Sheets As Necessary):

Revegetation Monitoring Field Form

1.5 Mile Reach, GE/Housatonic River Site, Pittsfield, MA Page ___ of ___

Observer(s):_____ Date: 5-18-05

Phase: _____ Flow @ Coltsville (cfs)_____ Weather: _____

Planting Area Location: TRANSITION

Riverbank Length (ft): _____ Avg width (ft):_____

Planting Area (sf):_____ 10-20% Area (sf):_____

Comments:

Random Sample Location Number: 102 Riverbank length (ft): 20 Width (ft): 12

Slope length (ft):_____ Sample Area (sf): _____

Plant Survivorship:

Trees	***Quantity (live)***	***Total***	***Shrubs***	***Quantity (live)***	***Total***
Black Willow			Red-osier Dogwood	11	
Silver Maple	1		Silky Dogwood	1	
Eastern Cottonwood	1		Winterberry Holly		
Box Elder			Chokecherry		
			Northern Arrowwood		

Total Live Trees:_____ **Total Live Shrubs:**_____

Herbaceous Cover (%):_____

Invasive Plant Cover (%):_____

Meander Survey Comments (Use Additional Sheets As Necessary):

- Some Dogwoods Need Staking

Revegetation Monitoring Field Form

1.5 Mile Reach, GE/Housatonic River Site, Pittsfield, MA Page ___ of ____

Observer(s):_____ Date: 5-18-05
Phase: _____ Flow @ Coltsville (cfs)_____ Weather: _____

Planting Area Location: TRANSITION
Riverbank Length (ft): _____ Avg width (ft):_____
Planting Area (sf):_____ 10-20% Area (sf):_____
Comments:

Random Sample Location Number: 103 Riverbank length (ft): 20 Width (ft): 9
Slope length (ft):_____ Sample Area (sf): 6

Plant Survivorship:

Trees	***Quantity (live)***	***Total***	***Shrubs***	***Quantity (live)***	***Total***
Black Willow			Red-osier Dogwood	11	
Silver Maple			Silky Dogwood	111	
Eastern Cottonwood			Winterberry Holly		
Box Elder	11		Chokecherry		
			Northern Arrowwood		

Total Live Trees:_____ **Total Live Shrubs:**_____

Herbaceous Cover (%):_____

Invasive Plant Cover (%):_____

Meander Survey Comments (Use Additional Sheets As Necessary):

Revegetation Monitoring Field Form

1.5 Mile Reach, GE/Housatonic River Site, Pittsfield, MA Page ___ of ___

Observer(s): _____ Date: 5-18-05

Phase: _____ Flow @ Coltsville (cfs) _____ Weather: _____

Planting Area Location: TRANSITION

Riverbank Length (ft): _____ Avg width (ft): _____

Planting Area (sf): _____ 10-20% Area (sf): _____

Comments:

Random Sample Location Number: 104 Riverbank length (ft): 20 Width (ft): 22

Slope length (ft): _____ Sample Area (sf): _____

Plant Survivorship:

Trees	*Quantity (live)*	*Total*	*Shrubs*	*Quantity (live)*	*Total*
Black Willow			Red-osier Dogwood	1111	
Silver Maple	1		Silky Dogwood	1	
Eastern Cottonwood			Winterberry Holly		
Box Elder	1		Chokecherry		
			Northern Arrowwood		

(3) ACSYR VOLUNTEER

Total Live Trees: _____ **Total Live Shrubs:** _____

Herbaceous Cover (%): _____

Invasive Plant Cover (%): _____

Meander Survey Comments (Use Additional Sheets As Necessary):

- SMALL Volunteer ACSYR
- Bittersweet @ Top & Slope

Revegetation Monitoring Field Form

1.5 Mile Reach, GE/Housatonic River Site, Pittsfield, MA Page ___ of ____

Observer(s):_____ Date: 5-18-05

Phase: _____ Flow @ Coltsville (cfs)_____ Weather: _____

Planting Area Location: TRANSITION

Riverbank Length (ft): _____ Avg width (ft):_____

Planting Area (sf):_____ 10-20% Area (sf):_____

Comments:

Random Sample Location Number: 105 Riverbank length (ft): 20 Width (ft): 21

Slope length (ft):_____ Sample Area (sf): _____

Plant Survivorship:

Trees	*Quantity (live)*	*Total*	*Shrubs*	*Quantity (live)*	*Total*
Black Willow			Red-osier Dogwood	11	
Silver Maple			Silky Dogwood	1111	
Eastern Cottonwood			Winterberry Holly		
Box Elder	11		Chokecherry		
			Northern Arrowwood		

Total Live Trees:_____ **Total Live Shrubs:**_____

Herbaceous Cover (%):_____

Invasive Plant Cover (%):_____

Meander Survey Comments (Use Additional Sheets As Necessary):

Revegetation Monitoring Field Form

1.5 Mile Reach, GE/Housatonic River Site, Pittsfield, MA Page ___ of ____

Observer(s):_____ Date: 5 - 18 - 05

Phase: _____ Flow @ Coltsville (cfs)_____ Weather: _____

Planting Area Location: TRANSITION

Riverbank Length (ft): _____ Avg width (ft):_____

Planting Area (sf):_____ 10-20% Area (sf):_____

Comments:

Random Sample Location Number: 106 Riverbank length (ft): 20 Width (ft): 18.6

Slope length (ft):_____ Sample Area (sf): _____

Plant Survivorship:

Trees	*Quantity (live)*	*Total*	*Shrubs*	*Quantity (live)*	*Total*
Black Willow			Red-osier Dogwood	1	
Silver Maple			Silky Dogwood	1 1	
Eastern Cottonwood			Winterberry Holly		
Box Elder	1		Chokecherry		
			Northern Arrowwood		

Total Live Trees:_____ **Total Live Shrubs:**_____

Herbaceous Cover (%):_____

Invasive Plant Cover (%):_____

Meander Survey Comments (Use Additional Sheets As Necessary):

AREA APPEARS TO BE SHORT ON PLANTS

Revegetation Monitoring Field Form

1.5 Mile Reach, GE/Housatonic River Site, Pittsfield, MA Page ___ of ____

Observer(s):_____ Date: 5-18-05

Phase: _____ Flow @ Coltsville (cfs)_____ Weather: _____

Planting Area Location: TRANSITION

Riverbank Length (ft): _____ Avg width (ft):_____

Planting Area (sf):_____ 10-20% Area (sf):_____

Comments:

Random Sample Location Number: 107 Riverbank length (ft): 20 Width (ft): 15

Slope length (ft):_____ Sample Area (sf): _____

Plant Survivorship:

Trees	***Quantity (live)***	***Total***	***Shrubs***	***Quantity (live)***	***Total***
Black Willow			Red-osier Dogwood	111	
Silver Maple			Silky Dogwood	11	
Eastern Cottonwood			Winterberry Holly		
Box Elder	11		Chokecherry		
			Northern Arrowwood		

Total Live Trees:_____ **Total Live Shrubs:**_____

Herbaceous Cover (%):_____

Invasive Plant Cover (%):_____

Meander Survey Comments (Use Additional Sheets As Necessary):

2 photos

Revegetation Monitoring Field Form

1.5 Mile Reach, GE/Housatonic River Site, Pittsfield, MA Page ___ of ____

Observer(s): MRC, AMF, Ken Munney (USFWS) Date: 5-19-05
Phase: 2 EAST Flow @ Coltsville (cfs) 45 Weather: _____

Planting Area Location: PHASE 2(E)
Riverbank Length (ft): _____ Avg width (ft): _____
Planting Area (sf): _____ 10-20% Area (sf): _____
Comments:

Random Sample Location Number: 220 Riverbank length (ft): 20 Width (ft): 34
Slope length (ft): _____ Sample Area (sf): _____

Plant Survivorship:

Trees	*Quantity (live)*	*Total*	*Shrubs*	*Quantity (live)*	*Total*
Black Willow			Red-osier Dogwood	IIII	
Silver Maple			Silky Dogwood	S S III	
Eastern Cottonwood	III		Winterberry Holly	IIII	
Box Elder	I		Chokecherry	HHT	
			Northern Arrowwood	IIIIIII	

HHHHHHHHHH

Total Live Trees: _____ **Total Live Shrubs:** _____

Herbaceous Cover (%): _____ NOT DONE FOR SPRING

Invasive Plant Cover (%): _____

Meander Survey Comments (Use Additional Sheets As Necessary):

- ROD. BANK AT BANK
- START OF SURVEY WORK 5-19-05
- SURVEY COMMENCED AT U.S. END OF PHASE 2 EAST BANK BELOW RETAINING WALL
- PLANT SURVEY WHERE PILE FOR RETAINING CABLE WAS REMOVED

WOODLOT ALTERNATIVES, INC.

Revegetation Monitoring Field Form

1.5 Mile Reach, GE/Housatonic River Site, Pittsfield, MA Page ___ of ____

Observer(s):_____ Date: 5-19-05
Phase: 2 EAST Flow @ Coltsville (cfs)_____ Weather: _____

Planting Area Location: PHASE 2(E)
Riverbank Length (ft): _____ Avg width (ft):_____
Planting Area (sf):_____ 10-20% Area (sf):_____
Comments:

Random Sample Location Number: 221 Riverbank length (ft): 20 Width (ft): 22
Slope length (ft):_____ Sample Area (sf): _____

Plant Survivorship:

Trees	*Quantity (live)*	*Total*	*Shrubs*	*Quantity (live)*	*Total*
Black Willow	5 5 5 1 1 1		Red-osier Dogwood	1	
Silver Maple	1 1 1		Silky Dogwood		
Eastern Cottonwood	1 1 1		Winterberry Holly		
Box Elder	1		Chokecherry		
			Northern Arrowwood		

Total Live Trees:_____ **Total Live Shrubs:**_____

Herbaceous Cover (%):_____

Invasive Plant Cover (%):_____

Meander Survey Comments (Use Additional Sheets As Necessary):

Revegetation Monitoring Field Form

1.5 Mile Reach, GE/Housatonic River Site, Pittsfield, MA Page ___ of _____

Observer(s):_____ Date: 5-19-05

Phase: 2 EAST Flow @ Coltsville (cfs)_____ Weather: _____

Planting Area Location: PHASE 2(U)

Riverbank Length (ft): _____ Avg width (ft):_____

Planting Area (sf):_____ 10-20% Area (sf):_____

Comments:

Random Sample Location Number: 222 Riverbank length (ft): 20 Width (ft): 26

Slope length (ft):_____ Sample Area (sf): _____

Plant Survivorship:

Trees	*Quantity (live)*	*Total*	*Shrubs*	*Quantity (live)*	*Total*
Black Willow			Red-osier Dogwood	111	
Silver Maple	5 11		Silky Dogwood		
Eastern Cottonwood			Winterberry Holly		
Box Elder			Chokecherry		
			Northern Arrowwood		

Total Live Trees:_____ **Total Live Shrubs:**_____

Herbaceous Cover (%):_____

Invasive Plant Cover (%):_____

Meander Survey Comments (Use Additional Sheets As Necessary):

Revegetation Monitoring Field Form

1.5 Mile Reach, GE/Housatonic River Site, Pittsfield, MA Page ___ of _____

Observer(s):_____ Date: 5-19-05
Phase: 2 East Flow @ Coltsville (cfs)_____ Weather: _____

Planting Area Location:_____
Riverbank Length (ft): _____ Avg width (ft):_____
Planting Area (sf):_____ 10-20% Area (sf):_____
Comments:

Random Sample Location Number: 223 Riverbank length (ft): 20 Width (ft): 32
Slope length (ft):_____ Sample Area (sf): _____

Plant Survivorship:

Trees	*Quantity (live)*	*Total*	*Shrubs*	*Quantity (live)*	*Total*
Black Willow			Red-osier Dogwood	|||	
Silver Maple			Silky Dogwood	++++ |	
Eastern Cottonwood			Winterberry Holly	++++ seedlings	
Box Elder	||		Chokecherry	++++ 5	
			Northern Arrowwood	|||	

Total Live Trees:_____ **Total Live Shrubs:** URO ++++ \|\|\|

Herbaceous Cover (%):_____

Invasive Plant Cover (%):_____

Meander Survey Comments (Use Additional Sheets As Necessary):

- US of large rock sandus above Demming St. Ramp
- numerous volunteer SM. Acer @ Top of Slope

Revegetation Monitoring Field Form

1.5 Mile Reach, GE/Housatonic River Site, Pittsfield, MA Page ___ of _____

Observer(s):_____ Date: 5-19-05

Phase: 2 EAST Flow @ Coltsville (cfs)_____ Weather: _____

Planting Area Location: PHASE 2(E)

Riverbank Length (ft): _____ Avg width (ft):_____

Planting Area (sf):_____ 10-20% Area (sf):_____

Comments:

Random Sample Location Number: 224 Riverbank length (ft): 20 Width (ft): 38

Slope length (ft):_____ Sample Area (sf): _____

Plant Survivorship:

Trees	*Quantity (live)*	*Total*	*Shrubs*	*Quantity (live)*	*Total*
Black Willow	1 1		Red-osier Dogwood	1 1 1 1	
Silver Maple	1 1 1 5		Silky Dogwood		
Eastern Cottonwood	1 1 1 1 1		Winterberry Holly		
Box Elder	1 1 1		Chokecherry		
			Northern Arrowwood		

Total Live Trees:_____ **Total Live Shrubs:**_____

Herbaceous Cover (%):_____

Invasive Plant Cover (%):_____

Meander Survey Comments (Use Additional Sheets As Necessary):

Revegetation Monitoring Field Form

1.5 Mile Reach, GE/Housatonic River Site, Pittsfield, MA Page ___ of _____

Observer(s):_____ Date: 5-19-05

Phase: 2 EAST Flow @ Coltsville (cfs)_____ Weather: _____

Planting Area Location: Phase 2 EAST

Riverbank Length (ft): _____ Avg width (ft):_____

Planting Area (sf):_____ 10-20% Area (sf):_____

Comments:

Random Sample Location Number: 225 Riverbank length (ft): 20 Width (ft): 30

Slope length (ft):_____ Sample Area (sf): _____

Plant Survivorship:

Trees	*Quantity (live)*	*Total*	*Shrubs*	*Quantity (live)*	*Total*
Black Willow	1		Red-osier Dogwood	1 1 1	
Silver Maple	11 5 5		Silky Dogwood	1 1 1	
Eastern Cottonwood			Winterberry Holly		
Box Elder	1 1		Chokecherry	1 1	
			Northern Arrowwood	1111	

Total Live Trees:_____ **Total Live Shrubs:**_____

Herbaceous Cover (%):_____

Invasive Plant Cover (%):_____

Meander Survey Comments (Use Additional Sheets As Necessary):

3 small Elm (spp. Ulmus) at Top of Slope Beyond LOW

Revegetation Monitoring Field Form

1.5 Mile Reach, GE/Housatonic River Site, Pittsfield, MA Page ___ of ____

Observer(s):_____ Date: 5-19-05
Phase: 2 ~~DRAFT~~ Flow @ Coltsville (cfs)_____ Weather: _____

Planting Area Location: PHASE 2 E
Riverbank Length (ft): _____ Avg width (ft):_____
Planting Area (sf):_____ 10-20% Area (sf):_____
Comments:

Random Sample Location Number: 226 Riverbank length (ft): 20 Width (ft): 17
Slope length (ft):_____ Sample Area (sf): _____

Plant Survivorship:

Trees	*Quantity (live)*	*Total*	*Shrubs*	*Quantity (live)*	*Total*
Black Willow	5 1		Red-osier Dogwood	11	
Silver Maple			Silky Dogwood		
Eastern Cottonwood	11		Winterberry Holly		
Box Elder	11		Chokecherry		
			Northern Arrowwood		

Total Live Trees:_____ **Total Live Shrubs:**_____

Herbaceous Cover (%):_____

Invasive Plant Cover (%):_____

Meander Survey Comments (Use Additional Sheets As Necessary):

2 photos

WOODLOT ALTERNATIVES, INC.

Revegetation Monitoring Field Form

1.5 Mile Reach, GE/Housatonic River Site, Pittsfield, MA Page ___ of ____

Observer(s):_____ Date: 5-19-05

Phase: 2 UPAS7 Flow @ Coltsville (cfs)_____ Weather: _____

Planting Area Location: Phase 2 UPAS1

Riverbank Length (ft): _____ Avg width (ft):_____

Planting Area (sf):_____ 10-20% Area (sf):_____

Comments:

Random Sample Location Number: 2267 Riverbank length (ft): 20 Width (ft): 10

Slope length (ft):_____ Sample Area (sf): _____

Plant Survivorship:

Trees	*Quantity (live)*	*Total*	*Shrubs*	*Quantity (live)*	*Total*
Black Willow	1 5		Red-osier Dogwood	1 1 1 1	
Silver Maple			Silky Dogwood	1 5	
Eastern Cottonwood			Winterberry Holly		
Box Elder	1		Chokecherry		
			Northern Arrowwood		

Total Live Trees:_____ **Total Live Shrubs:**_____

Herbaceous Cover (%):_____

Invasive Plant Cover (%):_____

Meander Survey Comments (Use Additional Sheets As Necessary):

Revegetation Monitoring Field Form

1.5 Mile Reach, GE/Housatonic River Site, Pittsfield, MA Page ___ of _____

Observer(s):_____ Date: 5-19-05
Phase: 2 WAS? Flow @ Coltsville (cfs)_____ Weather: _____

Planting Area Location: PLANTING 2E
Riverbank Length (ft): _____ Avg width (ft):_____
Planting Area (sf):_____ 10-20% Area (sf):_____
Comments:

Random Sample Location Number: 228 Riverbank length (ft): 20 Width (ft): 13
Slope length (ft):_____ Sample Area (sf): _____

Plant Survivorship:

Trees	***Quantity (live)***	***Total***	***Shrubs***	***Quantity (live)***	***Total***
Black Willow			Red-osier Dogwood	11	
Silver Maple	5 1		Silky Dogwood	5 1	
Eastern Cottonwood	1		Winterberry Holly		
Box Elder	11		Chokecherry		
			Northern Arrowwood		

Total Live Trees:_____ **Total Live Shrubs:**_____

Herbaceous Cover (%):_____

Invasive Plant Cover (%):_____

Meander Survey Comments (Use Additional Sheets As Necessary):

Revegetation Monitoring Field Form

1.5 Mile Reach, GE/Housatonic River Site, Pittsfield, MA Page ___ of ____

Observer(s):_____ Date: 5-19-05
Phase: 2 EAST Flow @ Coltsville (cfs)_____ Weather: _____

Planting Area Location: PHASE 2 E
Riverbank Length (ft): _____ Avg width (ft):_____
Planting Area (sf):_____ 10-20% Area (sf):_____
Comments:

Random Sample Location Number: 229 Riverbank length (ft): 20 Width (ft): 12
Slope length (ft):_____ Sample Area (sf): _____

Plant Survivorship:

Trees	*Quantity (live)*	*Total*	*Shrubs*	*Quantity (live)*	*Total*
Black Willow	5 1		Red-osier Dogwood	11	
Silver Maple			Silky Dogwood		
Eastern Cottonwood	1		Winterberry Holly		
Box Elder	11		Chokecherry		
			Northern Arrowwood		

Total Live Trees:_____ **Total Live Shrubs:**_____

Herbaceous Cover (%):_____

Invasive Plant Cover (%):_____

Meander Survey Comments (Use Additional Sheets As Necessary):

LAST TRANSECT

FIGURE: 1

DATE: May 2006

SCALE: 1" = 100'

PROJ. NO. 104141

PREPARED BY:

WOODLOT ALTERNATIVES, INC.
ENVIRONMENTAL CONSULTANTS

PROJECT:

1.5 MILE REMOVAL ACTION
ENVIRONMENTAL REMEDIATION CONTRACT
GE/HOUSATONIC RIVER SITE
PITTSFIELD, MASSACHUSETTS

SHEET TITLE:

2005 VEGETATION MONITORING
MONITORING TRANSECT LOCATIONS
SPRING 2005

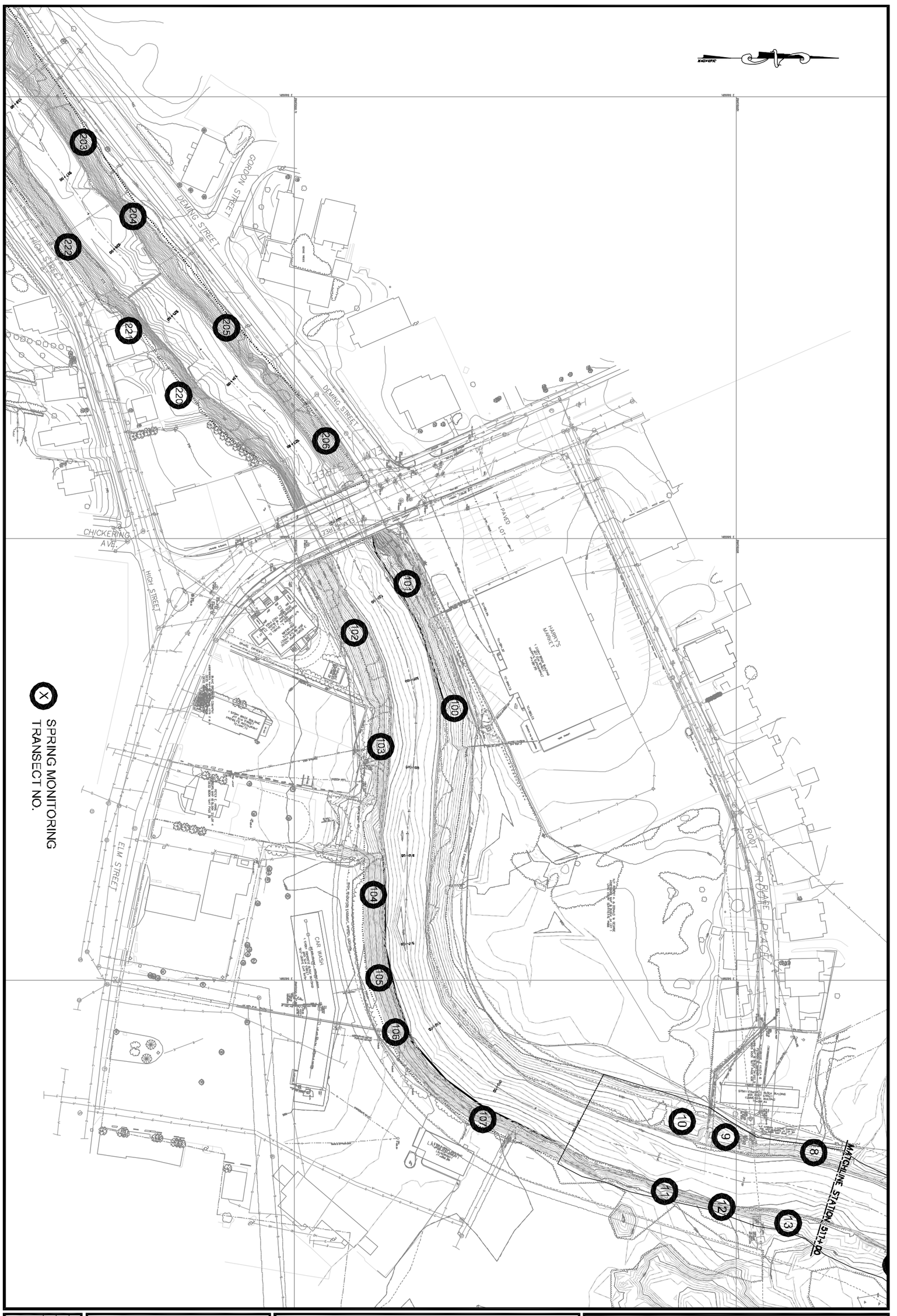

FIGURE:	2
PROJ. NO.	104141
SCALE:	1" = 100'
DATE:	May 2006

PREPARED BY:

WOODLOT ALTERNATIVES, INC.
ENVIRONMENTAL CONSULTANTS

PROJECT:

1.5 MILE REMOVAL ACTION
ENVIRONMENTAL REMEDIATION CONTRACT
GE/HOUSATONIC RIVER SITE
PITTSFIELD, MASSACHUSETTS

SHEET TITLE:

2005 VEGETATION MONITORING
MONITORING TRANSECT LOCATIONS
SPRING 2005

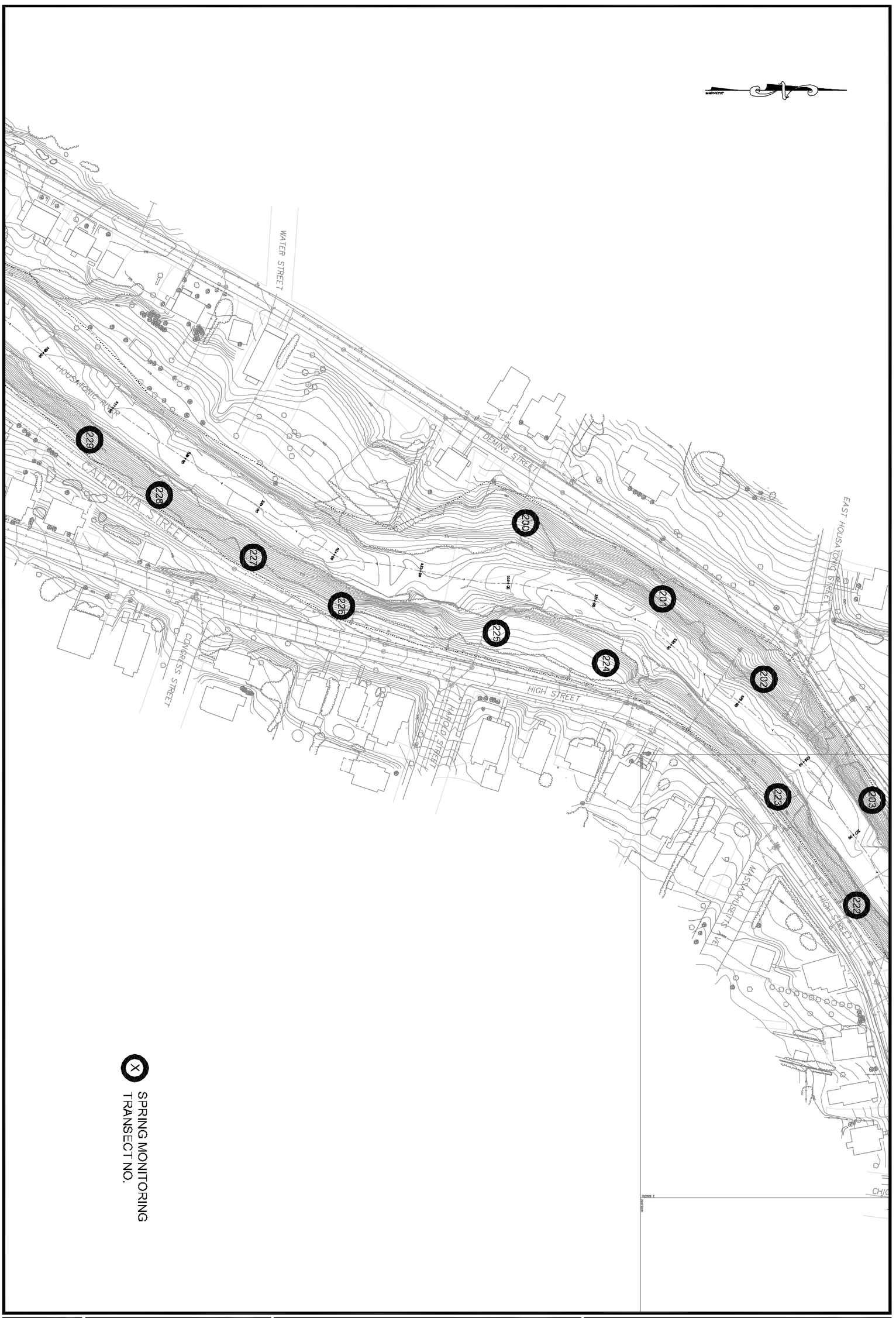

FIGURE: 3	DATE: May 2006	PREPARED BY: WOODLOT ALTERNATIVES, INC. ENVIRONMENTAL CONSULTANTS	PROJECT: 1.5 MILE REMOVAL ACTION ENVIRONMENTAL REMEDIATION CONTRACT GE/HOUSATONIC RIVER SITE PITTSFIELD, MASSACHUSETTS
SCALE: 1" = 100'			SHEET TITLE: 2005 VEGETATION MONITORING MONITORING TRANSECT LOCATIONS SPRING 2005
PROJ. NO. 104141			

Woodlot Alternatives, Inc. Revegetation Monitoring, SSERC 1.5 Mile Reach;
GE/Housatonic River Project, Pittsfield, Massachusetts
Spring 2005

				Dimensions						Trees									Shrubs									Total Plants (Trees + Shrubs)					
Reach	Bank	Date	*Sample No.*	L (ft)	W (ft)	Area (ft^2)	Slope (xH:1V)	Slope L Corrected for Slope	Area Corrected For Slope	BW	SM	EC	BE	Total Trees	Inverse Tree Density (sq.ft./ Tree)	Plants/ Acre	Percent of Target Density	Percent of Target Density - Monitoring Area	ROD	SD	WH	CC	NA	Total Shrubs	Inverse Shrub Density (sq.ft./ Shrub)	Plants/ Acre	Percent of Target Density	Percent of Target Density - Monitoring Area	Total Plants	Inverse Plant Density (sq.ft./ Plant)	Plants/ Acre	Percent of Target (1430 Plants Per Acre) Density	Arealy-Weighted Coverage by Area and Bank	Arealy-Weighted Coverage by Area
Phase 1	West	5/18/2005	*1*	20	19	380	4	18	369	0	0	0	1	1	369	118	17%		3	6	1	3	1	14	26	1654	227%		15	25	1772	124%		
Phase 1	West	5/18/2005	*2*	20	16.6	332	4	16	322	4	2	2	1	9	36	1217	174%		1	1	0	0	0	2	161	270	37%		11	29	1488	104%		
Phase 1	West	5/18/2005	*3*	20	13	260	4	13	252	2	0	0	1	3	84	518	74%		3	4	4	2	1	14	18	2418	331%		17	15	2936	205%		
Phase 1	West	5/18/2005	*4*	20	9	180	4	9	175	0	2	5	0	7	25	1746	249%		0	0	0	0	0	0	0	0	0%		7	25	1746	122%		
Phase 1	West	5/18/2005	*5*	20	13	260	4	13	252	0	2	0	2	4	63	691	99%		3	3	0	1	2	9	28	1554	213%		13	19	2245	157%		
Phase 1	West	5/18/2005	*6*	20	16	320	4	16	310	3	2	0	2	7	44	982	140%		0	0	0	0	0	0	0	0	0%		7	44	982	69%		
Phase 1	West	5/18/2005	*7*	20	12	240	4	12	233	0	0	0	0	0	0	0	0%		2	2	0	0	3	7	33	1310	179%		7	33	1310	92%		
Phase 1	West	5/18/2005	*8*	20	10	200	4	10	194	2	4	2	0	8	24	1796	257%		0	0	0	0	0	0	0	0	0%		8	24	1796	126%		
Phase 1	West	5/18/2005	*9*	20	24	480	4	23	466	0	0	4	0	4	116	374	53%		7	2	5	3	1	18	26	1684	231%		22	21	2058	144%		
Phase 1	West	5/18/2005	*10*	20	18	360	4	17	349	2	4	0	5	11	32	1372	196%		0	0	0	0	0	0	0	0	0%		11	32	1372	96%	119%	
Phase 1	East	5/18/2005	*11*	20	16	320	4	16	310	0	4	1	5	10	31	1403	200%		0	0	0	0	0	0	0	0	0%		10	31	1403	98%		
Phase 1	East	5/18/2005	*12*	20	11	220	4	11	213	0	3	2	3	8	27	1633	233%		0	0	0	0	0	0	0	0	0%		8	27	1633	114%		
Phase 1	East	5/18/2005	*13*	20	22	440	4	21	427	0	3	2	6	11	39	1123	160%		0	0	0	0	0	0	0	0	0%		11	39	1123	78%		
Phase 1	East	5/18/2005	*14*	20	28	560	4	27	543	2	4	0	5	11	49	882	126%		0	0	0	0	0	0	0	0	0%		11	49	882	62%		
Phase 1	East	5/18/2005	*15*	20	26	520	4	25	504	2	4	7	2	15	34	1295	185%		0	0	0	0	0	0	0	0	0%		15	34	1295	91%		
Phase 1	East	5/18/2005	*16*	20	26	520	4	25	504	1	0	0	0	1	504	86	12%		4	6	0	1	8	19	27	1641	225%		20	25	1727	121%		
Phase 1	East	5/18/2005	*17*	20	30	600	4	29	582	3	4	2	4	13	45	973	139%		1	0	0	0	1	2	291	150	21%		15	39	1123	78%		
Phase 1	East	5/18/2005	*18*	20	32	640	4	31	621	0	0	1	1	2	310	140	20%		5	4	0	4	4	17	37	1193	163%		19	33	1333	93%		
Phase 1	East	5/18/2005	*19*	20	15	300	4	15	291	1	0	0	0	1	291	150	21%		3	2	1	6	0	12	24	1796	246%		13	22	1946	136%		
Phase 1	East	5/18/2005	*20*	20	16	320	4	16	310	2	2	1	1	6	52	842	120%		0	0	0	0	0	0	0	0	0%		6	52	842	59%		
Phase 1	East	5/18/2005	*21*	20	10	200	4	10	194	2	2	0	0	4	49	898	128%		0	0	0	0	0	0	0	0	0%		4	49	898	63%		
Phase 1	East	5/18/2005	*22*	20	6	120	4	6	116	0	0	0	0	0	0	0	0%	112%	2	5	0	1	0	8	15	2993	410%	97%	8	15	2993	209%	90%	104%
Transition	West	5/18/2005	*100*	20	14	280	2	13	250	0	0	3	0	3	83	522	104%		3	0	0	0	0	3	83	522	71%		6	42	1044	73%		
Transition	West	5/18/2005	*101*	20	10	200	2	9	179	0	3	1	1	5	36	1218	244%		0	1	0	0	0	1	179	244	33%		6	30	1461	102%	89%	
Transition	East	5/18/2005	*102*	20	12	240	2	11	215	0	1	1	0	2	107	406	81%		2	1	0	0	0	3	72	609	83%		5	43	1015	82%		
Transition	East	5/18/2005	*103*	20	9	180	2	8	161	0	0	0	2	2	80	541	108%		2	4	0	0	0	6	27	1623	222%		8	20	2165	176%		
Transition	East	5/18/2005	*104*	20	22	440	2	20	394	0	1	0	1	2	197	221	44%		4	1	0	0	0	5	79	553	76%		7	56	775	63%		
Transition	East	5/18/2005	*105*	20	21	420	2	19	376	0	0	0	2	2	188	232	46%		2	5	0	0	0	7	54	812	111%		9	42	1044	85%		
Transition	East	5/18/2005	*106*	20	18.6	372	2	17	333	0	0	0	1	1	333	131	26%		1	2	0	0	0	3	111	393	54%		4	83	524	43%		
Transition	East	5/18/2005	*107*	20	15	300	2	13	268	0	0	0	2	2	134	325	65%	76%	3	2	0	0	0	5	54	812	111%	91%	7	38	1136	92%	73%	85%
Phase 2	West	5/18/2005	*200*	20	54	1080	3	51	1025	5	2	8	8	23	45	978	140%		1	0	2	0	0	3	342	128	17%		26	39	1105	77%		
Phase 2	West	5/18/2005	*201*	20	24	480	3	23	455	1	3	4	2	10	46	957	137%		4	0	0	0	0	4	114	383	52%		14	33	1339	94%		
Phase 2	West	5/18/2005	*202*	20	25	500	3	24	474	2	1	4	2	9	53	826	118%		2	0	1	0	0	3	158	275	38%		12	40	1102	77%		
Phase 2	West	5/18/2005	*203*	20	33	660	3	31	626	0	1	3	1	5	125	348	50%		7	5	1	4	2	19	33	1322	181%		24	26	1670	117%		
Phase 2	West	5/18/2005	*204*	20	18	360	3	17	342	2	3	1	1	7	49	893	128%		4	0	0	0	0	4	85	510	70%		11	31	1403	98%		
Phase 2	West	5/18/2005	*205*	20	10	200	3	9	190	0	0	0	0	0	0	0	0%		0	5	2	1	2	10	19	2296	314%		10	19	2296	161%		
Phase 2	West	5/18/2005	*206*	20	12	240	3	11	228	1	2	1	1	5	46	957	137%		2	0	0	0	0	2	114	383	52%		7	33	1339	94%	90%	
Phase 2	East	5/19/2005	*220*	20	34	680	3	32	645	0	0	3	1	4	161	270	39%		4	3	4	5	7	23	28	1553	213%		27	24	1823	127%		
Phase 2	East	5/19/2005	*221*	20	22	440	3	21	417	3	3	3	1	10	42	1044	149%		1	0	0	0	0	1	417	104	14%		11	38	1148	80%		
Phase 2	East	5/19/2005	*222*	20	26	520	3	25	493	0	2	0	0	2	247	177	25%		3	0	0	0	0	3	164	265	36%		5	99	442	31%		
Phase 2	East	5/19/2005	*223*	20	32	640	3	30	607	0	0	0	2	2	304	143	20%		3	6	5	5	3	22	28	1578	216%		24	25	1722	120%		
Phase 2	East	5/19/2005	*224*	20	38	760	3	36	721	2	3	6	3	14	51	846	121%		4	0	0	0	0	4	180	242	33%		18	40	1087	76%		
Phase 2	East	5/19/2005	*225*	20	30	600	3	28	569	1	2	0	2	5	114	383	55%		3	3	0	2	5	13	44	995	136%		18	32	1377	96%		
Phase 2	East	5/19/2005	*226*	20	17	340	3	16	323	1	0	2	2	5	65	675	96%		2	0	0	0	0	2	161	270	37%		7	46	945	66%		
Phase 2	East	5/19/2005	*227*	20	10	200	3	9	190	1	0	0	1	2	95	459	66%		4	1	0	0	0	5	38	1148	157%		7	27	1607	112%		
Phase 2	East	5/19/2005	*228*	20	13	260	3	12	247	0	1	1	2	4	62	706	101%		2	1	0	0	0	3	82	530	73%		7	35	1236	86%		
Phase 2	East	5/19/2005	*229*	20	12	240	3	11	228	1	0	1	2	4	57	765	109%	89%	2	0	0	0	0	2	114	383	52%	94%	6	38	1148	80%	85%	92%

Species Legend	
BW = black willow	SD = silky dogwood
SM = silver maple	Red-osier = red-osier dogwood
EC = eastern cottonwood	AW = arrowwood
BE = box elder	WB = winterberry
vines = river grape	CC = chokecherry

Target Planting Densities			
Normal	Trees:	700	per acre
	Shrubs:	730	per acre
	Total	1430	per acre
Geoweb	Trees:	500	per acre
	Shrubs:	730	per acre
	Total	1230	per acre

Monitored Lengths - Spring 2005							
		Phase 1		Transition Phase		Phase 2	
		West	East	West	East	West	East
Start		500+00	502+50	519+75	514+00	522+75	524+00
Stop		506+75	514+00	521+50	521+50	534+00	538+50
Start		509+50	-				
Stop		514+00	-				
Add 300 for drainage ditch			300				
Total		1125	1450	175	750	1125	1450
No. Stations		10	11	2	6	7	10
Station Width		20	20	20	20	21	22
Monitored Length		200	220	40	120	147	220
Percent of Total		18%	15%	23%	16%	13%	15%

Appendix E

Summer 2005 Inspection Maps and Data

104144 - Summer 2005

Revegetation Monitoring Field Form

Photos 5-7

1.5 Mile Reach, GE/Housatonic River Site, Pittsfield, MA Page 1 of ____

Observer(s): TBC Date: 8/16/05
Phase: 1 Flow @ Coltsville (cfs) 16 Weather: cloudy

Planting Area Location: 100 W of Lyon St
Riverbank Length (ft): ____ Avg width (ft): ____
Planting Area (sf): ____ 10-20% Area (sf): ____
Comments:

Random Sample Location Number: ____ Riverbank length (ft): ____ Width (ft): ____
Slope length (ft): 20 Sample Area (sf): ____

Plant Survivorship:

Trees	*Quantity (live)*	*Total*	*Shrubs*	*Quantity (live)*	*Total*
Black Willow	1 1	1	Red-osier Dogwood	IIII III 6	6
Silver Maple	1 1	1	Silky Dogwood	IIII 4	
Eastern Cottonwood	III 3	3	Winterberry Holly	II0 2	3
Box Elder	1 1	1	Chokecherry	1 1	1
	6		Northern Arrowwood	1 1	1

Total Live Trees: 6 + 3 Box Elder in Riprap **Total Live Shrubs:** 14

Herbaceous Cover (%): 80

Invasive Plant Cover (%): 5% Lythrum on riprap

Meander Survey Comments (Use Additional Sheets As Necessary):
East of this site near bridge shrubs 95% shrubs ~ 50% dead. looks like spray damage (photos 8+9)

WOODLOT ALTERNATIVES, INC. ENVIRONMENTAL CONSULTANTS

Photo 10-11

Revegetation Monitoring Field Form

1.5 Mile Reach, GE/Housatonic River Site, Pittsfield, MA Page 2 of ____

Observer(s): TBC Date: 8/16/05
Phase: 1 Flow @ Coltsville (cfs)____ Weather: Pt/y Sunny

Planting Area Location:____
Riverbank Length (ft): ____ Avg width (ft):____
Planting Area (sf):____ 10-20% Area (sf):____
Comments:

Random Sample Location Number: 2 Riverbank length (ft):____ Width (ft):____
Slope length (ft): 15 Sample Area (sf): ____

Plant Survivorship:

Trees	*Quantity (live)*	*Total*	*Shrubs*	*Quantity (live)*	*Total*
Black Willow	11 2	2	Red-osier Dogwood	1111 4	4
Silver Maple			Silky Dogwood	11111 5	5
Eastern Cottonwood	1 1	1	Winterberry Holly	11111 6	6
Box Elder	1 1 survived	1	Chokecherry	1 1	1
			Northern Arrowwood	1 1 survived	1

Total Live Trees: 4 **Total Live Shrubs:** 17

Herbaceous Cover (%): 98

Invasive Plant Cover (%): 1% Knotweed & Bittersweet - 20% PL below ER

Meander Survey Comments (Use Additional Sheets As Necessary):

Photo 12 - 13

Revegetation Monitoring Field Form

1.5 Mile Reach, GE/Housatonic River Site, Pittsfield, MA Page 3 of ____

Observer(s): TBC Date: 8/6/15
Phase: 1 Flow @ Coltsville (cfs)____ Weather: PtCldy Sunny

Planting Area Location:____
Riverbank Length (ft): ____ Avg width (ft):____
Planting Area (sf):____ 10-20% Area (sf):____
Comments:

Random Sample Location Number: 3 Riverbank length (ft):____ Width (ft):____
Slope length (ft): 10 Sample Area (sf): ____

Plant Survivorship:

Trees	*Quantity (live)*	*Total*	*Shrubs*	*Quantity (live)*	*Total*
Black Willow	III 3	3	Red-osier Dogwood		
Silver Maple	1 1	1	Silky Dogwood		
Eastern Cottonwood	1 1	1	Winterberry Holly		
Box Elder	III 3	3	Chokecherry		
			Northern Arrowwood		

Total Live Trees: 8 **Total Live Shrubs:** 0

Herbaceous Cover (%): 98

Invasive Plant Cover (%): 1 PL in RR

Meander Survey Comments (Use Additional Sheets As Necessary):

Revegetation Monitoring Field Form

1.5 Mile Reach, GE/Housatonic River Site, Pittsfield, MA Page 4 of ____

Observer(s): TBC Date: 8/16/05
Phase: 1 Flow @ Coltsville (cfs)____ Weather: P/C Sunny

Planting Area Location:____
Riverbank Length (ft): ____ Avg width (ft):____
Planting Area (sf):____ 10-20% Area (sf):____
Comments:

Random Sample Location Number: 4 Riverbank length (ft):____ Width (ft):____
Slope length (ft): 13 Sample Area (sf): ____

Plant Survivorship:

Trees	*Quantity (live)*	*Total*	*Shrubs*	*Quantity (live)*	*Total*
Black Willow	2	2	Red-osier Dogwood		
Silver Maple	1	1	Silky Dogwood		
Eastern Cottonwood (Apex died off)	2	2	Winterberry Holly		
Box Elder	2	2	Chokecherry		
			Northern Arrowwood		

Total Live Trees: 7 **Total Live Shrubs:** 0

Herbaceous Cover (%): 100

Invasive Plant Cover (%): 1% PL in RR

Meander Survey Comments (Use Additional Sheets As Necessary):
lots of morning glory

Revegetation Monitoring Field Form

1.5 Mile Reach, GE/Housatonic River Site, Pittsfield, MA Page 5 of ____

Observer(s): TBC Date: 8/16/05
Phase: 1 Flow @ Coltsville (cfs)____ Weather: P. Sun

Planting Area Location:____
Riverbank Length (ft): ____ Avg width (ft):____
Planting Area (sf):____ 10-20% Area (sf):____
Comments:
herb layer crowding shrubs

Random Sample Location Number: 5 Riverbank length (ft): 20 Width (ft):____
Slope length (ft): 15 Sample Area (sf): ____

Plant Survivorship:

Trees	*Quantity (live)*	*Total*	*Shrubs*	*Quantity (live)*	*Total*
Black Willow	5 1	1	Red-osier Dogwood	11 2	2
Silver Maple			Silky Dogwood	1111 5	5
Eastern Cottonwood	1 (1SA)	1	Winterberry Holly	1 1	1
Box Elder			Chokecherry	1 1	1
		2	Northern Arrowwood	1 1	1

Total Live Trees:____ **Total Live Shrubs:** 10

Herbaceous Cover (%): 100

Invasive Plant Cover (%): 1% Rl in RR 1% JtW

Meander Survey Comments (Use Additional Sheets As Necessary):

Photo 19-21

Revegetation Monitoring Field Form

1.5 Mile Reach, GE/Housatonic River Site, Pittsfield, MA Page 6 of ____

Observer(s): TBC Date: 08/16/05
Phase: 1 Flow @ Coltsville (cfs)____ Weather: P.sun

Planting Area Location:____
Riverbank Length (ft): ____ Avg width (ft):____
Planting Area (sf):____ 10-20% Area (sf):____
Comments:
herb layer shorter than 5

Random Sample Location Number: 6 Riverbank length (ft): 20 Width (ft):____
Slope length (ft): 16 Sample Area (sf): ____

Plant Survivorship:

Trees	*Quantity (live)*	*Total*	*Shrubs*	*Quantity (live)*	*Total*
Black Willow	1 1	1	Red-osier Dogwood		
Silver Maple	VV III 3	3	Silky Dogwood		
Eastern Cottonwood	VII 3	3	Winterberry Holly		
Box Elder			Chokecherry		
			Northern Arrowwood		

Total Live Trees: 7 **Total Live Shrubs:** 0

Herbaceous Cover (%): 10%

Invasive Plant Cover (%): 2% PL Phalaris? sample 190

Meander Survey Comments (Use Additional Sheets As Necessary):

lots of volunteers (CW+BE) on Narrow Bank W of 5

JKW @ northwest part

WOODLOT ALTERNATIVES, INC.

Ph22-03

Revegetation Monitoring Field Form

1.5 Mile Reach, GE/Housatonic River Site, Pittsfield, MA Page 7 of ____

Observer(s): TBC Date: 8/16/05

Phase: 1 Flow @ Coltsville (cfs)____ Weather: Sunny

Planting Area Location:____

Riverbank Length (ft): ____ Avg width (ft):____

Planting Area (sf):____ 10-20% Area (sf):____

Comments:

herb layer 7ft

Random Sample Location Number: 7 Riverbank length (ft):____ Width (ft):____

Slope length (ft): 20 Sample Area (sf): ____

Plant Survivorship:

Trees	*Quantity (live)*	*Total*	*Shrubs*	*Quantity (live)*	*Total*
Black Willow			Red-osier Dogwood	IIIII 5	5
Silver Maple			Silky Dogwood	IIII 4	4
Eastern Cottonwood			Winterberry Holly		
Box Elder			Chokecherry	1 1	1
			Northern Arrowwood	II 2	2

Total Live Trees: 0 **Total Live Shrubs:** 12

Herbaceous Cover (%): 100

Invasive Plant Cover (%): 1% 12

Meander Survey Comments (Use Additional Sheets As Necessary):

PA24-26

Revegetation Monitoring Field Form

1.5 Mile Reach, GE/Housatonic River Site, Pittsfield, MA Page 8 of ____

Observer(s): TBC Date: 8/16/15
Phase: 1 Flow @ Coltsville (cfs)____ Weather: Sun

Planting Area Location:____
Riverbank Length (ft): ____ Avg width (ft):____
Planting Area (sf):____ 10-20% Area (sf):____
Comments:
Photo 25 = CFT Blw pulled down by MS

Random Sample Location Number:____ Riverbank length (ft):____ Width (ft): 20
Slope length (ft): 17 Sample Area (sf): ____

Plant Survivorship: heavy overgrowth - Maple + BF doing well through

Trees	*Quantity (live)*	*Total*	*Shrubs*	*Quantity (live)*	*Total*
Black Willow	11 2	2	Red-osier Dogwood		
Silver Maple	111 3	3	Silky Dogwood		
Eastern Cottonwood	11 2	2	Winterberry Holly		
Box Elder			Chokecherry		
			Northern Arrowwood		

Total Live Trees: 7 **Total Live Shrubs:** 0

Herbaceous Cover (%): 100

Invasive Plant Cover (%): 1% RL

Meander Survey Comments (Use Additional Sheets As Necessary):

P127

Revegetation Monitoring Field Form

1.5 Mile Reach, GE/Housatonic River Site, Pittsfield, MA Page 9 of ____

Observer(s): TBC Date: 8/16/5 3:33pm
Phase: 1 Flow @ Coltsville (cfs)____ Weather: Sun

Planting Area Location:____
Riverbank Length (ft): ____ Avg width (ft):____
Planting Area (sf):____ 10-20% Area (sf):____
Comments:

Random Sample Location Number: 9 Riverbank length (ft):____ Width (ft):____
Slope length (ft): 25 Sample Area (sf): ____

Plant Survivorship: tree range cutting RD

Trees	*Quantity (live)*	*Total*	*Shrubs*	*Quantity (live)*	*Total*
Black Willow	1 1	1	Red-osier Dogwood	IIIII 5	5
Silver Maple	✓ 1	1	Silky Dogwood	II 2	2
Eastern Cottonwood	II 2	2	Winterberry Holly	1 1	1
Box Elder			Chokecherry	1 1	1
			Northern Arrowwood	IIII 5	5

Total Live Trees: 4 **Total Live Shrubs:** 14

Herbaceous Cover (%): 100

Invasive Plant Cover (%): 3% PL

Meander Survey Comments (Use Additional Sheets As Necessary):

Ph 30

Revegetation Monitoring Field Form

1.5 Mile Reach, GE/Housatonic River Site, Pittsfield, MA Page 10 of _____

Observer(s): TBC Date: 9/16/05

Phase: 1 Flow @ Coltsville (cfs)_____ Weather: Sun

Planting Area Location:_____

Riverbank Length (ft): _____ Avg width (ft):_____

Planting Area (sf):_____ 10-20% Area (sf):_____

Comments:

Random Sample Location Number: 10 Riverbank length (ft):_____ Width (ft):____

Slope length (ft): 18 Sample Area (sf): _____

Plant Survivorship: very robust trees

Trees	*Quantity (live)*	*Total*	*Shrubs*	*Quantity (live)*	*Total*
Black Willow	1	1	Red-osier Dogwood		
Silver Maple	1111	4	Silky Dogwood		
Eastern Cottonwood			Winterberry Holly		
Box Elder	1111	4	Chokecherry		
			Northern Arrowwood		

Total Live Trees: 9 **Total Live Shrubs:** 0

Herbaceous Cover (%): 100

Invasive Plant Cover (%): 5% PL 1% mik Phal.

Meander Survey Comments (Use Additional Sheets As Necessary):

Pg. 32-34

Revegetation Monitoring Field Form

1.5 Mile Reach, GE/Housatonic River Site, Pittsfield, MA Page 11 of ____

Observer(s): TBC Date: 9/16/15 4:35 PM
Phase: 1 Flow @ Coltsville (cfs)____ Weather: ____

Planting Area Location: E side
Riverbank Length (ft): ____ Avg width (ft):____
Planting Area (sf):____ 10-20% Area (sf):____
Comments:

Random Sample Location Number:____ Riverbank length (ft):____ Width (ft):____
Slope length (ft): 20 Sample Area (sf): ____
3 BE dead top, new sprout (Plot)

Plant Survivorship:

Trees	*Quantity (live)*	*Total*	*Shrubs*	*Quantity (live)*	*Total*
Black Willow	1 1	1	Red-osier Dogwood		
Silver Maple	111 3	3	Silky Dogwood		
Eastern Cottonwood			Winterberry Holly		
Box Elder	1111 5	5	Chokecherry		
1 malus (col.) 1 Prunus (col.)			Northern Arrowwood		

Total Live Trees: 9 +/- **Total Live Shrubs:** 1

Herbaceous Cover (%): 100

Invasive Plant Cover (%): 1% PL

Meander Survey Comments (Use Additional Sheets As Necessary):

Ph 35-36

Revegetation Monitoring Field Form

1.5 Mile Reach, GE/Housatonic River Site, Pittsfield, MA Page 12 of ____

Observer(s): TBC Date: 8/16/05
Phase: 1 Flow @ Coltsville (cfs)____ Weather: Sun

Planting Area Location: E. Side
Riverbank Length (ft): ____ Avg width (ft):____
Planting Area (sf):____ 10-20% Area (sf):____
Comments:

Random Sample Location Number:____ Riverbank length (ft):____ Width (ft):____
Slope length (ft): 20 Sample Area (sf): ____

Plant Survivorship:

Trees	*Quantity (live)*	*Total*	*Shrubs*	*Quantity (live)*	*Total*
Black Willow			Red-osier Dogwood		
Silver Maple	11 2	2	Silky Dogwood	VV 11	2
Eastern Cottonwood	√ 50 1	51	Winterberry Holly		
Box Elder	T VVTV 1111 5	6	Chokecherry		
Ulam Rubr	1 1	1	Northern Arrowwood		

Total Live Trees: 59 **Total Live Shrubs:** 2

Herbaceous Cover (%): 100

Invasive Plant Cover (%): 5% PL (somewhere RR) Rosa multiflora

Meander Survey Comments (Use Additional Sheets As Necessary):
Very close to forest edge, more native herbs + woody regen.

Ph. 37

Revegetation Monitoring Field Form

1.5 Mile Reach, GE/Housatonic River Site, Pittsfield, MA Page 13 of _____

Observer(s): TBC Date: 8/16/15
Phase: 1 Flow @ Coltsville (cfs)_____ Weather: Sun

Planting Area Location: E bank
Riverbank Length (ft): _____ Avg width (ft):_____
Planting Area (sf):_____ 10-20% Area (sf):_____
Comments:

Random Sample Location Number:_____ Riverbank length (ft):_____ Width (ft):____
Slope length (ft): 30 Sample Area (sf): _____

Plant Survivorship:

Trees	*Quantity (live)*	*Total*	*Shrubs*	*Quantity (live)*	*Total*
Black Willow			Red-osier Dogwood	IIII 5	5
Silver Maple	1 1	1	Silky Dogwood	~~IIII~~ 6	6
Eastern Cottonwood	V 17 17	17	Winterberry Holly		
Box Elder	V T III 3	3	Chokecherry		
		-	Northern Arrowwood	III 4	4

Total Live Trees: 21 **Total Live Shrubs:** 15

Herbaceous Cover (%): 95 - burrowing

Invasive Plant Cover (%): 3% PL

Meander Survey Comments (Use Additional Sheets As Necessary):

Less Solidago & Convolvulus - more diversity

WOODLOT ALTERNATIVES, INC.

Ph. 40

Revegetation Monitoring Field Form

1.5 Mile Reach, GE/Housatonic River Site, Pittsfield, MA Page 14 of ____

Observer(s): TBC Date: 8/6/15

Phase: 1 Flow @ Coltsville (cfs)____ Weather: ____

Planting Area Location: E Bank

Riverbank Length (ft): ____ Avg width (ft): ____

Planting Area (sf): ____ 10-20% Area (sf): ____

Comments:

Random Sample Location Number: 14 Riverbank length (ft): ____ Width (ft): ____

Slope length (ft): 35 Sample Area (sf): ____

Plant Survivorship:

Trees	*Quantity (live)*	*Total*	*Shrubs*	*Quantity (live)*	*Total*
Black Willow	111 3	3	Red-osier Dogwood		
Silver Maple	111 3	3	Silky Dogwood		
Eastern Cottonwood	V 11 11	D 14	Winterberry Holly		
Box Elder	T 1111 4	4	Chokecherry		
Ulmus sp.	1 1	1	Northern Arrowwood		

Total Live Trees: 24 **Total Live Shrubs:** 5

Herbaceous Cover (%): 97

Invasive Plant Cover (%): 2% PL unk Phal 1%

Meander Survey Comments (Use Additional Sheets As Necessary):

Drier area

Ph. 42-43

Revegetation Monitoring Field Form

1.5 Mile Reach, GE/Housatonic River Site, Pittsfield, MA Page 15 of _____

Observer(s): TBC Date: 8/16/15

Phase: 1 Flow @ Coltsville (cfs)_____ Weather: cloudy 6:17pm

Planting Area Location:_____

Riverbank Length (ft): _____ Avg width (ft):_____

Planting Area (sf):_____ 10-20% Area (sf):_____

Comments:

Moister area than 14,13,17

Random Sample Location Number:_____ Riverbank length (ft):_____ Width (ft):____

Slope length (ft): 46 Sample Area (sf): _____

Plant Survivorship:

Trees	*Quantity (live)*	*Total*	*Shrubs*	*Quantity (live)*	*Total*
Black Willow	11 2	2	Red-osier Dogwood		
Silver Maple	1111 4	4	Silky Dogwood	✓ 1	
Eastern Cottonwood	7 7 1 1 1 7	7	Winterberry Holly		
Box Elder	11 2	2	Chokecherry		
			Northern Arrowwood		

Total Live Trees: 15 **Total Live Shrubs:** 1

Herbaceous Cover (%): 100

Invasive Plant Cover (%): 1 % Bittersweet

Meander Survey Comments (Use Additional Sheets As Necessary):

Revegetation Monitoring Field Form

PL 44-75

1.5 Mile Reach, GE/Housatonic River Site, Pittsfield, MA Page 16 of ____

Observer(s): TBC Date: 8/16/15

Phase: 1 Flow @ Coltsville (cfs)____ Weather: Cb

Planting Area Location:____

Riverbank Length (ft): ____ Avg width (ft):____

Planting Area (sf):____ 10-20% Area (sf):____

Comments:

Random Sample Location Number:____ Riverbank length (ft):____ Width (ft):____

Slope length (ft): 40 Sample Area (sf): ____

Plant Survivorship:

Trees	*Quantity (live)*	*Total*	*Shrubs*	*Quantity (live)*	*Total*
Black Willow	III 3	3	Red-osier Dogwood	1 1	1
Silver Maple	IIII 4	4	Silky Dogwood	1	1
Eastern Cottonwood	IIII 4	4	Winterberry Holly		
Box Elder	IIIII 5	5	Chokecherry		
			Northern Arrowwood		

Total Live Trees: 16 **Total Live Shrubs:** 2

Herbaceous Cover (%): 100

Invasive Plant Cover (%): 3% PL above RR 1% JK W

Meander Survey Comments (Use Additional Sheets As Necessary):

PD leaning over in ege

Lots of Deer bedding in area

WOODLOT ALTERNATIVES, INC.

Revegetation Monitoring Field Form

1.5 Mile Reach, GE/Housatonic River Site, Pittsfield, MA Page 17 of _____

Observer(s): TBC + MC Date: 9/6/15
Phase: A Flow @ Coltsville (cfs)_____ Weather: Rain

Planting Area Location:_____
Riverbank Length (ft): _____ Avg width (ft):_____
Planting Area (sf):_____ 10-20% Area (sf):_____
Comments:

Random Sample Location Number:_____ Riverbank length (ft):_____ Width (ft):____
Slope length (ft): 30 Sample Area (sf): _____

Plant Survivorship:

Trees	*Quantity (live)*	*Total*	*Shrubs*	*Quantity (live)*	*Total*
Black Willow			Red-osier Dogwood	5	5
Silver Maple			Silky Dogwood	5	5
Eastern Cottonwood	1 1	1	Winterberry Holly	2	2
Box Elder	7	7	Chokecherry	5	5
Salix sp.	11 11	11	Northern Arrowwood	3	3

Total Live Trees: 19 **Total Live Shrubs:** 20

Herbaceous Cover (%): 100

Invasive Plant Cover (%): 1% PL Volunteer Vitis

Meander Survey Comments (Use Additional Sheets As Necessary):

Ph. 47

Revegetation Monitoring Field Form

1.5 Mile Reach, GE/Housatonic River Site, Pittsfield, MA Page 18 of _____

Observer(s): TBC & MC Date: 8-16-05

Phase: 1 Flow @ Coltsville (cfs)_____ Weather: _____

Planting Area Location: _____

Riverbank Length (ft): _____ Avg width (ft): _____

Planting Area (sf): _____ 10-20% Area (sf): _____

Comments:

Random Sample Location Number: _____ Riverbank length (ft): _____ Width (ft): ____

Slope length (ft): 15 Sample Area (sf): _____

Plant Survivorship:

Trees	*Quantity (live)*	*Total*	*Shrubs*	*Quantity (live)*	*Total*
Black Willow	11 2	2	Red-osier Dogwood	11 2	2
Silver Maple			Silky Dogwood	1 1	1
Eastern Cottonwood	11 2	2	Winterberry Holly		
Box Elder	1 1	1	Chokecherry		
			Northern Arrowwood	11 2	2

Total Live Trees: 5 **Total Live Shrubs:** 5

Herbaceous Cover (%): 100

Invasive Plant Cover (%): 2% PL

Meander Survey Comments (Use Additional Sheets As Necessary):

Revegetation Monitoring Field Form

1.5 Mile Reach, GE/Housatonic River Site, Pittsfield, MA

Observer(s):_____ Date: 8-16-05

Phase: 1 Flow @ Coltsville (cfs)_____ Weather: _____

Planting Area Location:_____

Riverbank Length (ft): _____ Avg width (ft):_____

Planting Area (sf):_____ 10-20% Area (sf):_____

Comments:

Random Sample Location Number: 19 Riverbank length (ft):_____ Width (ft):____

Slope length (ft): 10 Sample Area (sf): _____

Plant Survivorship:

Trees	*Quantity (live)*	*Total*	*Shrubs*	*Quantity (live)*	*Total*
Black Willow			Red-osier Dogwood	4	4
Silver Maple			Silky Dogwood	3	3
Eastern Cottonwood			Winterberry Holly	1	1
Box Elder			Chokecherry	3	3
			Northern Arrowwood	2	2

Total Live Trees: 0 **Total Live Shrubs:** 13

Herbaceous Cover (%): 100%

Invasive Plant Cover (%): 1% PL

Meander Survey Comments (Use Additional Sheets As Necessary):

PH. 51

Revegetation Monitoring Field Form

1.5 Mile Reach, GE/Housatonic River Site, Pittsfield, MA

Observer(s):_____ Date: 8-16-05

Phase: 1 Flow @ Coltsville (cfs)_____ Weather: _____

Planting Area Location:_____

Riverbank Length (ft): _____ Avg width (ft):_____

Planting Area (sf):_____ 10-20% Area (sf):_____

Comments:

Random Sample Location Number:_____ Riverbank length (ft):_____ Width (ft):____

Slope length (ft):8 Sample Area (sf): _____

Plant Survivorship:

Trees	*Quantity (live)*	*Total*	*Shrubs*	*Quantity (live)*	*Total*
Black Willow			Red-osier Dogwood	III	3
Silver Maple			Silky Dogwood	IIII	5
Eastern Cottonwood	1	1	Winterberry Holly		
Box Elder			Chokecherry	II	2
			Northern Arrowwood		

Total Live Trees: 1 **Total Live Shrubs:**_____

Herbaceous Cover (%): 100

Invasive Plant Cover (%): 1% ish

Meander Survey Comments (Use Additional Sheets As Necessary):

WOODLOT ALTERNATIVES, INC.

Revegetation Monitoring Field Form

21

1.5 Mile Reach, GE/Housatonic River Site, Pittsfield, MA Page ~~20~~ of ____

Observer(s): TBC Date: 8/17/15

Phase: 2 Flow @ Coltsville (cfs) 15 Weather: Sun

Planting Area Location: ~~Floodplain~~ - Rt Bank

Riverbank Length (ft): ____ Avg width (ft): ____

Planting Area (sf): ____ 10-20% Area (sf): ____

Comments:

Random Sample Location Number: 20 Riverbank length (ft): 20 Width (ft): ____

Slope length (ft): 11 Sample Area (sf): ____

Plant Survivorship:

Trees	*Quantity (live)*	*Total*	*Shrubs*	*Quantity (live)*	*Total*
Black Willow			Red-osier Dogwood		
Silver Maple	11 2	2	Silky Dogwood	11 2	2
Eastern Cottonwood	1 1	1	Winterberry Holly		
Box Elder	11 2	2	Chokecherry		
			Northern Arrowwood		

Total Live Trees: 5 **Total Live Shrubs:** 2

Herbaceous Cover (%): 100%

Invasive Plant Cover (%): 0

Meander Survey Comments (Use Additional Sheets As Necessary):

P1.3-4

Revegetation Monitoring Field Form

22

1.5 Mile Reach, GE/Housatonic River Site, Pittsfield, MA Page 21 of ____

Observer(s): TBC Date: 8/17

Phase: 2 Flow @ Coltsville (cfs)____ Weather: Sun

Planting Area Location: Ehrlich.

Riverbank Length (ft): _____ Avg width (ft):_____

Planting Area (sf):_____ 10-20% Area (sf):_____

Comments:

Random Sample Location Number: 21 Riverbank length (ft):_____ Width (ft):____

Slope length (ft):____11_____ Sample Area (sf): _____

Plant Survivorship:

Trees	*Quantity (live)*	*Total*	*Shrubs*	*Quantity (live)*	*Total*
Black Willow	1	1	Red-osier Dogwood		
Silver Maple			Silky Dogwood	III 3	3
Eastern Cottonwood	III 3	3	Winterberry Holly		
Box Elder			Chokecherry		
			Northern Arrowwood		

Total Live Trees: 4 **Total Live Shrubs:** 3

Herbaceous Cover (%): 60

Invasive Plant Cover (%): 0%

Meander Survey Comments (Use Additional Sheets As Necessary):

Revegetation Monitoring Field Form

1.5 Mile Reach, GE/Housatonic River Site, Pittsfield, MA Page ~~22~~ 23 of _____

Observer(s): TBC Date: 8/17/15
Phase: 2 Flow @ Coltsville (cfs)_____ Weather: Sun

Planting Area Location: Rt. Bank
Riverbank Length (ft): _____ Avg width (ft):_____
Planting Area (sf):_____ 10-20% Area (sf):_____
Comments:
sites 20 - 22 15 yr.

Random Sample Location Number: 22 Riverbank length (ft):_____ Width (ft):____
Slope length (ft): 15 Sample Area (sf): _____

Plant Survivorship:

Trees	*Quantity (live)*	*Total*	*Shrubs*	*Quantity (live)*	*Total*
Black Willow (Dead stock re-sprouts)	T T 11 2	2	Red-osier Dogwood	1 1	1
Silver Maple	11 2	1	Silky Dogwood		
Eastern Cottonwood	111 3	3	0 Winterberry Holly	1 1	1
Box Elder	111 3	3	P Chokecherry	1 1	1
			Northern Arrowwood		

Total Live Trees: 10 **Total Live Shrubs:** 3

Herbaceous Cover (%): 97 - Bare from tree pits

Invasive Plant Cover (%): 6% PL Beds RR

Meander Survey Comments (Use Additional Sheets As Necessary):

Most of willows have dead or pruned tops & growing from sprouts @ base - including up stream plantings

WOODLOT ALTERNATIVES, INC.

PA17-9

Revegetation Monitoring Field Form

Observer(s): TBC Date: 8/17/5

Phase: 2 Flow @ Coltsville (cfs)____ Weather: Sun

Planting Area Location: Left Bank

Riverbank Length (ft): ____ Avg width (ft):____

Planting Area (sf):____ 10-20% Area (sf):____

Comments:

1 caged osier should be taken out of cage

Random Sample Location Number:____ Riverbank length (ft): 20 Width (ft):____

Slope length (ft): 12 Sample Area (sf): ____

Plant Survivorship:

Trees	*Quantity (live)*	*Total*	*Shrubs*	*Quantity (live)*	*Total*
Black Willow	1	1	Red-osier Dogwood	IIII 4	4
Silver Maple			Silky Dogwood	7	
Eastern Cottonwood			Winterberry Holly		
Box Elder			Chokecherry	1 1	1
Ulmus sp.	1		Northern Arrowwood		

Total Live Trees: 2 **Total Live Shrubs:** 5

Herbaceous Cover (%): 90 – Mostly Elymus - no bare ground but erosion not showing through

Invasive Plant Cover (%): 0

Meander Survey Comments (Use Additional Sheets As Necessary):

Ph 10-11

Revegetation Monitoring Field Form

25

1.5 Mile Reach, GE/Housatonic River Site, Pittsfield, MA Page ~~24~~ of _____

Observer(s): TBC Date: 8/17/5

Phase: 2 Flow @ Coltsville (cfs)_____ Weather: Sunny

Planting Area Location: Left Bank

Riverbank Length (ft): _____ Avg width (ft):_____

Planting Area (sf):_____ 10-20% Area (sf):_____

Comments: some erosion above planting warning tape to planting area hard plastic soil stabilizer exposed 3" in some areas

Random Sample Location Number: 24 Riverbank length (ft):_____ Width (ft):____

Slope length (ft): 14 Sample Area (sf): _____

Plant Survivorship:

Trees	*Quantity (live)*	*Total*	*Shrubs*	*Quantity (live)*	*Total*
Black Willow	1 1	1	Red-osier Dogwood	IIII 4	4
Silver Maple	V 1 2	2	Silky Dogwood	1 1	1
Eastern Cottonwood	V II 11	11	Winterberry Holly		
Box Elder	V IIII V 4	4	Chokecherry	1 1	1
Ulmus sp.	24 24	24	Northern Arrowwood		

Total Live Trees: 42 (4 planted) **Total Live Shrubs:** 6

Herbaceous Cover (%): 93 ~~75~~ - mostly Elymus - but more diversity than #24

Invasive Plant Cover (%): 1% PL - Below RR

Meander Survey Comments (Use Additional Sheets As Necessary):

Lots of caged red osier

WOODLOT ALTERNATIVES, INC.

ph 12+13

Revegetation Monitoring Field Form

1.5 Mile Reach, GE/Housatonic River Site, Pittsfield, MA

Observer(s): TBC Date: 8/17

Phase: 2 Flow @ Coltsville (cfs)____ Weather: Sun

Planting Area Location: Lft. Bank

Riverbank Length (ft): ____ Avg width (ft):____

Planting Area (sf):____ 10-20% Area (sf):____

Comments:

1 cage cutting Silver maple

Random Sample Location Number: 25 Riverbank length (ft):____ Width (ft):____

Slope length (ft): 12 Sample Area (sf): ____

Plant Survivorship:

Trees	*Quantity (live)*	*Total*	*Shrubs*	*Quantity (live)*	*Total*
Black Willow	1 1	1	Red-osier Dogwood	IIII 4	4
Silver Maple	5 1 1	1	Silky Dogwood		
Eastern Cottonwood	IIII 4	4	Winterberry Holly		
Box Elder			Chokecherry		
			Northern Arrowwood		

Total Live Trees: 7 **Total Live Shrubs:** 4

Herbaceous Cover (%): 100

Invasive Plant Cover (%): 0 - PL Below in RR

Meander Survey Comments (Use Additional Sheets As Necessary):

Plastic Soil restraint exposed ½ 24+25

WOODLOT ALTERNATIVES, INC.

Ph. 14 + 15

Revegetation Monitoring Field Form

27

1.5 Mile Reach, GE/Housatonic River Site, Pittsfield, MA

Observer(s): TBC Date: 8/17/15

Phase: 2 Flow @ Coltsville (cfs)_____ Weather: Sun

Planting Area Location: Left Bank

Riverbank Length (ft): _____ Avg width (ft):_____

Planting Area (sf):_____ 10-20% Area (sf):_____

Comments: steep slope

Random Sample Location Number: 26 Riverbank length (ft):_____ Width (ft):____

Slope length (ft): 21 Sample Area (sf): _____

Plant Survivorship:

Trees	*Quantity (live)*	*Total*	*Shrubs*	*Quantity (live)*	*Total*
Black Willow			Red-osier Dogwood	IIII 4	4
Silver Maple	1 1	1	Silky Dogwood	IIII 4	4
Eastern Cottonwood			Winterberry Holly		
Box Elder			Chokecherry		
sugar maple	1 1	1	Northern Arrowwood		

Total Live Trees: 2 **Total Live Shrubs:** 8

Herbaceous Cover (%): 100% - 90% Deciduous

Invasive Plant Cover (%): 0 - PL below

Meander Survey Comments (Use Additional Sheets As Necessary):

WOODLOT ALTERNATIVES, INC.

Revegetation Monitoring Field Form

Ph 16+18

1.5 Mile Reach, GE/Housatonic River Site, Pittsfield, MA

Page ~~27~~ 28 of _____

Observer(s): TBC Date: 8/17

Phase: 2 Flow @ Coltsville (cfs)_____ Weather: sun

Planting Area Location: Left Bank

Riverbank Length (ft): _____ Avg width (ft):_____

Planting Area (sf):_____ 10-20% Area (sf):_____

Comments: Just upstream outside desmodium planting col. Rosa Mult.

Random Sample Location Number: 26 Riverbank length (ft):_____ Width (ft):____

Slope length (ft): 17 Sample Area (sf): _____

Plant Survivorship:

Trees	*Quantity (live)*	*Total*	*Shrubs*	*Quantity (live)*	*Total*
Black Willow			Red-osier Dogwood	IIII	4
Silver Maple	V 1 1	1	Silky Dogwood		
Eastern Cottonwood	V 1 1	1	Winterberry Holly		
Box Elder	T V 1 1 2	2	Chokecherry	IIII IV 4	4
			Northern Arrowwood		

Suspect topped BE came this way from Nursery dead part took < 1yr.

Total Live Trees: 4 **Total Live Shrubs:** 4

Herbaceous Cover (%): 95 - some hard plastic soil stabilizer exposed

Invasive Plant Cover (%): 0 - PL Below

Meander Survey Comments (Use Additional Sheets As Necessary):

Topped Box Elder - lots of desmodium

Just upstream of #26 ≈ 20' of poor herb cover - mainly Galium

WOODLOT ALTERNATIVES, INC.

Pg 19

Revegetation Monitoring Field Form

1.5 Mile Reach, GE/Housatonic River Site, Pittsfield, MA

Observer(s): TBC Date: 8/17/15

Phase: 2 Flow @ Coltsville (cfs)_____ Weather: Sun

Planting Area Location: Low Bank

Riverbank Length (ft): _____ Avg width (ft):_____

Planting Area (sf):_____ 10-20% Area (sf):_____

Comments:

Random Sample Location Number: 27 Riverbank length (ft):_____ Width (ft):____

Slope length (ft):_____ Sample Area (sf): _____

Plant Survivorship:

Trees	*Quantity (live)*	*Total*	*Shrubs*	*Quantity (live)*	*Total*
Black Willow			Red-osier Dogwood	111	
Silver Maple			Silky Dogwood	1	
Eastern Cottonwood			Winterberry Holly		
Box Elder	1		Chokecherry		
			Northern Arrowwood		

Total Live Trees:_____ **Total Live Shrubs:**_____

Herbaceous Cover (%): 100 - mostly Elymus

Invasive Plant Cover (%): PL below

Meander Survey Comments (Use Additional Sheets As Necessary): ~~28~~ 29

Looks like young Juglans nigra volunteer just down stream of 28

WOODLOT ALTERNATIVES, INC.

Ph. 20921

Revegetation Monitoring Field Form

1.5 Mile Reach, GE/Housatonic River Site, Pittsfield, MA Page 30 of ____

Observer(s): TBC Date: 8/17

Phase: 2 Flow @ Coltsville (cfs)____ Weather: Sun

Planting Area Location: L. Bank S. Elm

Riverbank Length (ft): ____ Avg width (ft):____

Planting Area (sf):____ 10-20% Area (sf):____

Comments:

Rudbeckia

Random Sample Location Number: 30 Riverbank length (ft): 20 Width (ft):____

Slope length (ft): 36 Sample Area (sf): ____

Plant Survivorship: 2/3 Silk Dog have upper 20" dead

Trees	*Quantity (live)*	*Total*	*Shrubs*	*Quantity (live)*	*Total*
Black Willow			Red-osier Dogwood	IIII 4	4
Silver Maple			Silky Dogwood	III 3	3
Eastern Cottonwood	IIII 4	4	Winterberry Holly	II 2	2
Box Elder	I 1	1	Chokecherry	I IIII 6	6
			Northern Arrowwood	I IIII 7	7

Total Live Trees: 5 **Total Live Shrubs:** 22

Herbaceous Cover (%): 97

Invasive Plant Cover (%): 0

Meander Survey Comments (Use Additional Sheets As Necessary):

RA 23+24

Revegetation Monitoring Field Form

1.5 Mile Reach, GE/Housatonic River Site, Pittsfield, MA Page 31 of _____

Observer(s): TBC Date: 8/17

Phase: 2 Flow @ Coltsville (cfs)_____ Weather: Sun

Planting Area Location: L Bank S Elm

Riverbank Length (ft): _____ Avg width (ft):_____

Planting Area (sf):_____ 10-20% Area (sf):_____

Comments:

Random Sample Location Number: 31 Riverbank length (ft):_____ Width (ft):____

Slope length (ft): 33 Sample Area (sf): _____

Plant Survivorship:

Trees	*Quantity (live)*	*Total*	*Shrubs*	*Quantity (live)*	*Total*
Black Willow			Red-osier Dogwood	11 2	2
Silver Maple	III 3	3	Silky Dogwood	III 3	3
Eastern Cottonwood	II 2	2	Winterberry Holly	I 1	1
Box Elder	dead, dbh, healthy base 55 III 3	3	Chokecherry	5 IIII 4	4
			Northern Arrowwood	II 2	2

= 5 90% dead stems/sprout

Total Live Trees: 8 **Total Live Shrubs:** 12

Herbaceous Cover (%): 100

Invasive Plant Cover (%): 0

Meander Survey Comments (Use Additional Sheets As Necessary):

upstream of 31 - 1 99% dead choke cherry

downstream - 1 snapped cottonwood (photo)

WOODLOT ALTERNATIVES, INC.

RA 25-27 above photo taken 1st

Revegetation Monitoring Field Form

1.5 Mile Reach, GE/Housatonic River Site, Pittsfield, MA

Observer(s): TBC Date: 8/17/5

Phase: 2 Flow @ Coltsville (cfs)_____ Weather: Sun

Planting Area Location: L Bank S. Elm

Riverbank Length (ft): _____ Avg width (ft):_____

Planting Area (sf):_____ 10-20% Area (sf):_____

Comments:

Random Sample Location Number: 32 Riverbank length (ft):_____ Width (ft):____

Slope length (ft): 25 Sample Area (sf): _____

Plant Survivorship:

Trees	*Quantity (live)*	*Total*	*Shrubs*	*Quantity (live)*	*Total*
Black Willow			Red-osier Dogwood	TNI 5	5
Silver Maple			Silky Dogwood		
Eastern Cottonwood			Winterberry Holly		
Box Elder	IIII 4	4	Chokecherry		
			Northern Arrowwood		

Total Live Trees: 4 **Total Live Shrubs:** 5

Herbaceous Cover (%): 100

Invasive Plant Cover (%): 0 PL below

Meander Survey Comments (Use Additional Sheets As Necessary):

WOODLOT ALTERNATIVES, INC.

Ph 28429

Revegetation Monitoring Field Form

1.5 Mile Reach, GE/Housatonic River Site, Pittsfield, MA Page 33 of ____

Observer(s): TBC Date: 8/17/15

Phase: 2 Flow @ Coltsville (cfs)____ Weather: Sunny

Planting Area Location: L. Bank S Mass

Riverbank Length (ft): ____ Avg width (ft):____

Planting Area (sf):____ 10-20% Area (sf):____

Comments:

Random Sample Location Number: 33 Riverbank length (ft):____ Width (ft):____

Slope length (ft): 24 Sample Area (sf): ____

Plant Survivorship:

Trees	*Quantity (live)*	*Total*	*Shrubs*	*Quantity (live)*	*Total*
Black Willow			Red-osier Dogwood	IIII 4	4
Silver Maple	II 2	2	Silky Dogwood	II 2	2
Eastern Cottonwood	III 3	3	Winterberry Holly	II 2	2
Box Elder	√√√√ 4	4	Chokecherry	IIII 4	4
			Northern Arrowwood	I 1	1

Total Live Trees: 9 **Total Live Shrubs:** 13

Herbaceous Cover (%): 100

Invasive Plant Cover (%): 0 PL Below

Meander Survey Comments (Use Additional Sheets As Necessary):

1. PL - Upper Bank S of Mass Rd - See Map

WOODLOT ALTERNATIVES, INC.

P4.30

Revegetation Monitoring Field Form

1.5 Mile Reach, GE/Housatonic River Site, Pittsfield, MA Page 34 of ____

Observer(s): TBC Date: 8/17

Phase: 2 Flow @ Coltsville (cfs)____ Weather: ____

Planting Area Location: OL Bank S, MGSS

Riverbank Length (ft): ____ Avg width (ft):____

Planting Area (sf):____ 10-20% Area (sf):____

Comments:

Random Sample Location Number: 33 Riverbank length (ft): 20 Width (ft):____

Slope length (ft): 49 Sample Area (sf): ____

Plant Survivorship:

Trees	*Quantity (live)*	*Total*	*Shrubs*	*Quantity (live)*	*Total*
Black Willow	III 3	3	Red-osier Dogwood	II	2
Silver Maple	T III 3	3	Silky Dogwood		
Eastern Cottonwood	IIII 7	7	Winterberry Holly		
Box Elder	IIII 4	4	Chokecherry		
			Northern Arrowwood		

Total Live Trees: 17 **Total Live Shrubs:** 2

Herbaceous Cover (%): 100

Invasive Plant Cover (%): 0

Meander Survey Comments (Use Additional Sheets As Necessary):

Patch of dry elymus from prev. yr (no new) + lots of morning glory, last of strand of #34

WOODLOT ALTERNATIVES, INC.

Ph 32

Revegetation Monitoring Field Form

1.5 Mile Reach, GE/Housatonic River Site, Pittsfield, MA

Observer(s): TBC Date: 8/17/15

Phase: 2 Flow @ Coltsville (cfs)____ Weather: P.Sun

Planting Area Location: L. Bank S of Mass

Riverbank Length (ft): _____ Avg width (ft): _____

Planting Area (sf): _____ 10-20% Area (sf): _____

Comments:

Random Sample Location Number: _____ Riverbank length (ft): 20 Width (ft): ____

Slope length (ft): 40 Sample Area (sf): _____

Plant Survivorship:

Trees	*Quantity (live)*	*Total*	*Shrubs*	*Quantity (live)*	*Total*
Black Willow	III	3	Red-osier Dogwood	III	3
Silver Maple	I	1	Silky Dogwood		
Eastern Cottonwood	IIII III 8	8	Winterberry Holly		
Box Elder	I	1	Chokecherry		
			Northern Arrowwood		

Total Live Trees: 13 **Total Live Shrubs:** 3

Herbaceous Cover (%): 95

Invasive Plant Cover (%): 0 - Rt Lakes

Meander Survey Comments (Use Additional Sheets As Necessary):

WOODLOT ALTERNATIVES, INC ENVIRONMENTAL CONSULTANTS

Ph
34+35

Revegetation Monitoring Field Form

1.5 Mile Reach, GE/Housatonic River Site, Pittsfield, MA Page 36 of ____

Observer(s): TBC Date: 8/17
Phase: 2 Flow @ Coltsville (cfs)____ Weather: Sunny

Planting Area Location: S. Hartford L. Bank
Riverbank Length (ft): ____ Avg width (ft):____
Planting Area (sf):____ 10-20% Area (sf):____
Comments:

Random Sample Location Number: 36 Riverbank length (ft): 20 Width (ft):____
Slope length (ft): 27 Sample Area (sf): ____

Plant Survivorship:

Trees	*Quantity (live)*	*Total*	*Shrubs*	*Quantity (live)*	*Total*
Black Willow			Red-osier Dogwood	III	3
Silver Maple	TT III	3	Silky Dogwood	I	1
Eastern Cottonwood	I	1	Winterberry Holly	II	2
Box Elder			Chokecherry	II	2
Juglans nigra	V I	1	Northern Arrowwood	~~IIII~~	5

Total Live Trees: 5 **Total Live Shrubs:** 13

Herbaceous Cover (%): 97

Invasive Plant Cover (%): 0 PL below
Rosa multiflora above

Meander Survey Comments (Use Additional Sheets As Necessary):

Dead BW 5 of #36

Pl 36-37

Revegetation Monitoring Field Form

1.5 Mile Reach, GE/Housatonic River Site, Pittsfield, MA Page 37 of ____

Observer(s): TBC Date: 8/17/15
Phase: 2 Flow @ Coltsville (cfs)____ Weather: Sun

Planting Area Location: S. Harold L. Bank
Riverbank Length (ft): ____ Avg width (ft):____
Planting Area (sf):____ 10-20% Area (sf):____
Comments:

Random Sample Location Number: 37 Riverbank length (ft): 20 Width (ft):____
Slope length (ft): 15 Sample Area (sf): ____

Plant Survivorship:

Trees	*Quantity (live)*	*Total*	*Shrubs*	*Quantity (live)*	*Total*
Black Willow			Red-osier Dogwood	III	3
Silver Maple	T T II	2	Silky Dogwood		
Eastern Cottonwood			Winterberry Holly		
Box Elder	II	2	Chokecherry		
Acer sp	V II V	2	Northern Arrowwood		

Total Live Trees: 6 **Total Live Shrubs:** 3

Herbaceous Cover (%): 85 - mostly Poa

Invasive Plant Cover (%): 0 PL below

Meander Survey Comments (Use Additional Sheets As Necessary):

PA-38+39

Revegetation Monitoring Field Form

1.5 Mile Reach, GE/Housatonic River Site, Pittsfield, MA Page 38 of ____

Observer(s): TBC Date: 8/17/15
Phase: 2 Flow @ Coltsville (cfs)____ Weather: Sun

Planting Area Location: L. Bank S. Harold
Riverbank Length (ft): ____ Avg width (ft):____
Planting Area (sf):____ 10-20% Area (sf):____
Comments:

Random Sample Location Number: 38 Riverbank length (ft): 20 Width (ft):____
Slope length (ft): 9 Sample Area (sf): ____

Plant Survivorship:

Trees	*Quantity (live)*	*Total*	*Shrubs*	*Quantity (live)*	*Total*
Black Willow			Red-osier Dogwood	11	2
Silver Maple			Silky Dogwood		
Eastern Cottonwood	1	1	Winterberry Holly		
Box Elder	V V 10 11	13	Chokecherry		
			Northern Arrowwood		

Total Live Trees: 14 **Total Live Shrubs:** 2

Herbaceous Cover (%): 97

Invasive Plant Cover (%): 0

Meander Survey Comments (Use Additional Sheets As Necessary):

PH-40-42

Revegetation Monitoring Field Form

1.5 Mile Reach, GE/Housatonic River Site, Pittsfield, MA Page 39 of ____

Observer(s): TBC Date: 8/17/15
Phase: 2 Flow @ Coltsville (cfs)____ Weather: P. Sun

Planting Area Location: L. Bank S. of Hgwd
Riverbank Length (ft): _____ Avg width (ft):_____
Planting Area (sf):_____ 10-20% Area (sf):_____
Comments:

Random Sample Location Number: 39 Riverbank length (ft): 20 Width (ft):____
Slope length (ft): 11 Sample Area (sf): _____

Plant Survivorship:

Trees	*Quantity (live)*	*Total*	*Shrubs*	*Quantity (live)*	*Total*
Black Willow	T 1	1	Red-osier Dogwood	111	3
Silver Maple			Silky Dogwood		
Eastern Cottonwood			Winterberry Holly		
Box Elder	11½	12	Chokecherry		
			Northern Arrowwood		

Total Live Trees: 13 **Total Live Shrubs:** 3

Herbaceous Cover (%): 100

Invasive Plant Cover (%): 0

Meander Survey Comments (Use Additional Sheets As Necessary):

43 - 44

Revegetation Monitoring Field Form

1.5 Mile Reach, GE/Housatonic River Site, Pittsfield, MA Page 40 of _____

Observer(s): TBC Date: 8/17
Phase: 2 Flow @ Coltsville (cfs)_____ Weather: Psun

Planting Area Location: L. Bank. S Hook
Riverbank Length (ft): _____ Avg width (ft):_____
Planting Area (sf):_____ 10-20% Area (sf):_____
Comments:

Random Sample Location Number: 40 Riverbank length (ft): 20 Width (ft):____
Slope length (ft): 14 Sample Area (sf): _____

Plant Survivorship:

Trees	*Quantity (live)*	*Total*	*Shrubs*	*Quantity (live)*	*Total*
Black Willow			Red-osier Dogwood	IIII	
Silver Maple	1	1	Silky Dogwood		
Eastern Cottonwood			Winterberry Holly		
Box Elder	1 1 1/4	6	Chokecherry		
			Northern Arrowwood		

Total Live Trees: 7 **Total Live Shrubs:** 4

Herbaceous Cover (%): 95

Invasive Plant Cover (%): 0

Meander Survey Comments (Use Additional Sheets As Necessary):

Ph 45
Ph 46

Revegetation Monitoring Field Form

1.5 Mile Reach, GE/Housatonic River Site, Pittsfield, MA Page 41 of _____

Observer(s): TBC & MC Date: 8/17
Phase: 2 Flow @ Coltsville (cfs)_____ Weather: Sunny

Planting Area Location: Rt. Bank Shrub
Riverbank Length (ft): _____ Avg width (ft):_____
Planting Area (sf):_____ 10-20% Area (sf):_____
Comments:

Random Sample Location Number: 41 Riverbank length (ft):_____ Width (ft):____
Slope length (ft): 56 Sample Area (sf): _____

Plant Survivorship:

Trees	*Quantity (live)*	*Total*	*Shrubs*	*Quantity (live)*	*Total*
Black Willow	5		Red-osier Dogwood	1	
Silver Maple	4		Silky Dogwood		
Eastern Cottonwood	9		Winterberry Holly	2	
Box Elder	14		Chokecherry		
			Northern Arrowwood	2	

Total Live Trees:_____ **Total Live Shrubs:**_____

Herbaceous Cover (%): 100%

Invasive Plant Cover (%): 0, Rv below RP

Meander Survey Comments (Use Additional Sheets As Necessary):

Ph. 47-54

Revegetation Monitoring Field Form

1.5 Mile Reach, GE/Housatonic River Site, Pittsfield, MA Page 42 of ____

Observer(s): TBC & MC Date: 8/17
Phase: 1/2 2 Flow @ Coltsville (cfs)____ Weather: P Sun

Planting Area Location: 42
Riverbank Length (ft): ____ Avg width (ft):____
Planting Area (sf):____ 10-20% Area (sf):____
Comments:

Random Sample Location Number:____ Riverbank length (ft):____ Width (ft):____
Slope length (ft): 23 Sample Area (sf): ____

Plant Survivorship:

Trees	*Quantity (live)*	*Total*	*Shrubs*	*Quantity (live)*	*Total*
Black Willow	1	1	Red-osier Dogwood	111	3
Silver Maple	1111	4	Silky Dogwood	11	
Eastern Cottonwood	1111	4	Winterberry Holly		
Box Elder			Chokecherry		
			Northern Arrowwood		

Total Live Trees: 9 **Total Live Shrubs:** 3

Herbaceous Cover (%): 100

Invasive Plant Cover (%): 0

Meander Survey Comments (Use Additional Sheets As Necessary):

Ph. 49

Revegetation Monitoring Field Form

1.5 Mile Reach, GE/Housatonic River Site, Pittsfield, MA Page 43 of ____

Observer(s): TBC & MC Date: 8/17

Phase: 2 Flow @ Coltsville (cfs)____ Weather: ____

Planting Area Location: 43

Riverbank Length (ft): ____ Avg width (ft):____

Planting Area (sf):____ 10-20% Area (sf):____

Comments:

Random Sample Location Number:____ Riverbank length (ft):____ Width (ft):____

Slope length (ft): 25 Sample Area (sf): ____

Plant Survivorship:

Trees	*Quantity (live)*	*Total*	*Shrubs*	*Quantity (live)*	*Total*
Black Willow	11	2	Red-osier Dogwood	111	3
Silver Maple	1	1	Silky Dogwood		
Eastern Cottonwood	𝍸 1	6	Winterberry Holly		
Box Elder	𝍸 VV 11	7	Chokecherry		
			Northern Arrowwood		

Total Live Trees: 16 **Total Live Shrubs:** 3

Herbaceous Cover (%): 97

Invasive Plant Cover (%): 0

Meander Survey Comments (Use Additional Sheets As Necessary):

Bare ground 1 of 43

Revegetation Monitoring Field Form

1.5 Mile Reach, GE/Housatonic River Site, Pittsfield, MA Page 44 of ____

Observer(s): TC + MC Date: 8/17
Phase: _____ Flow @ Coltsville (cfs)_____ Weather: _____

Planting Area Location: 44
Riverbank Length (ft): _____ Avg width (ft):_____
Planting Area (sf):_____ 10-20% Area (sf):_____
Comments:

Random Sample Location Number: 44 Riverbank length (ft):_____ Width (ft):____
Slope length (ft): 28 Sample Area (sf): _____

Plant Survivorship:

Trees	*Quantity (live)*	*Total*	*Shrubs*	*Quantity (live)*	*Total*
Black Willow	5		Red-osier Dogwood	3	
Silver Maple	1		Silky Dogwood		
Eastern Cottonwood	3		Winterberry Holly	2	
Box Elder	2		Chokecherry		
			Northern Arrowwood		

Total Live Trees:_____ **Total Live Shrubs:**_____

Herbaceous Cover (%): 95

Invasive Plant Cover (%): 0

Meander Survey Comments (Use Additional Sheets As Necessary):

PH 33
32 (Top)

Revegetation Monitoring Field Form

1.5 Mile Reach, GE/Housatonic River Site, Pittsfield, MA Page 45 of ____

Observer(s):_____ Date: _____
Phase: _____ Flow @ Coltsville (cfs)_____ Weather: _____

Planting Area Location: Phase 2
Riverbank Length (ft): _____ Avg width (ft):_____
Planting Area (sf):_____ 10-20% Area (sf):_____
Comments:

Random Sample Location Number: 45 Riverbank length (ft): 20 Width (ft): 20
Slope length (ft): 16 Sample Area (sf): _____

Plant Survivorship:

Trees	*Quantity (live)*	*Total*	*Shrubs*	*Quantity (live)*	*Total*
Black Willow	1		Red-osier Dogwood	1111	
Silver Maple			Silky Dogwood	11 11	
Eastern Cottonwood			Winterberry Holly	11	
Box Elder			Chokecherry	1 1111	
			Northern Arrowwood	11	

Total Live Trees:_____ **Total Live Shrubs:**_____

Herbaceous Cover (%): 95

Invasive Plant Cover (%): Pc Below Riprap

Meander Survey Comments (Use Additional Sheets As Necessary):

SAVAGE MORNING GLORY ATTACK

Photo 31
30

Revegetation Monitoring Field Form

1.5 Mile Reach, GE/Housatonic River Site, Pittsfield, MA

Observer(s):_____ Date: _____
Phase: _____ Flow @ Coltsville (cfs)_____ Weather: _____

Planting Area Location:_____
Riverbank Length (ft): _____ Avg width (ft):_____
Planting Area (sf):_____ 10-20% Area (sf):_____
Comments:

Random Sample Location Number:_____ Riverbank length (ft):_____ Width (ft):20
Slope length (ft):7 Sample Area (sf): _____

Plant Survivorship:

Trees	*Quantity (live)*	*Total*	*Shrubs*	*Quantity (live)*	*Total*
Black Willow			Red-osier Dogwood	1111	
Silver Maple			Silky Dogwood		
Eastern Cottonwood	V 1		Winterberry Holly		
Box Elder	11		Chokecherry		
			Northern Arrowwood		

Total Live Trees:_____ **Total Live Shrubs:**_____

Herbaceous Cover (%): 60

Invasive Plant Cover (%): 0, PL Below RR

Meander Survey Comments (Use Additional Sheets As Necessary):

MORNING GLORY DAMAGE

WOODLOT ALTERNATIVES, INC.

Ph 28
Ph 26
Ph 27

Revegetation Monitoring Field Form

1.5 Mile Reach, GE/Housatonic River Site, Pittsfield, MA

Observer(s):_____ Date: _____
Phase: _____ Flow @ Coltsville (cfs)_____ Weather: _____

Planting Area Location:_____
Riverbank Length (ft): _____ Avg width (ft):_____
Planting Area (sf):_____ 10-20% Area (sf):_____
Comments:

Random Sample Location Number:_____ Riverbank length (ft):20 Width (ft):2
Slope length (ft):8 Sample Area (sf): _____

Plant Survivorship:

Trees	*Quantity (live)*	*Total*	*Shrubs*	*Quantity (live)*	*Total*
Black Willow			Red-osier Dogwood	1 1 1	
Silver Maple	1 1 1		Silky Dogwood		
Eastern Cottonwood	P		Winterberry Holly		
Box Elder			Chokecherry		
			Northern Arrowwood		

Total Live Trees:_____ **Total Live Shrubs:**_____

Herbaceous Cover (%):70

Invasive Plant Cover (%):0

Meander Survey Comments (Use Additional Sheets As Necessary):

LOCATION IMMEDIATELY DS OF ACM SWALE

WOODLOT ALTERNATIVES, INC

PH 25
24 DONE

Revegetation Monitoring Field Form

1.5 Mile Reach, GE/Housatonic River Site, Pittsfield, MA

Observer(s):_____ Date: _____
Phase: _____ Flow @ Coltsville (cfs)_____ Weather: _____

Planting Area Location:_____
Riverbank Length (ft): _____ Avg width (ft):_____
Planting Area (sf):_____ 10-20% Area (sf):_____
Comments:

Random Sample Location Number:_____ Riverbank length (ft):20 Width (ft):____
Slope length (ft):7 Sample Area (sf): _____

Plant Survivorship:

Trees	*Quantity (live)*	*Total*	*Shrubs*	*Quantity (live)*	*Total*
Black Willow	1		Red-osier Dogwood	5 111	
Silver Maple	1		Silky Dogwood		
Eastern Cottonwood			Winterberry Holly		
Box Elder	11		Chokecherry		
			Northern Arrowwood		

Total Live Trees:_____ **Total Live Shrubs:**_____

Herbaceous Cover (%): 85

Invasive Plant Cover (%): 0

Meander Survey Comments (Use Additional Sheets As Necessary):

WOODLOT ALTERNATIVES, INC.

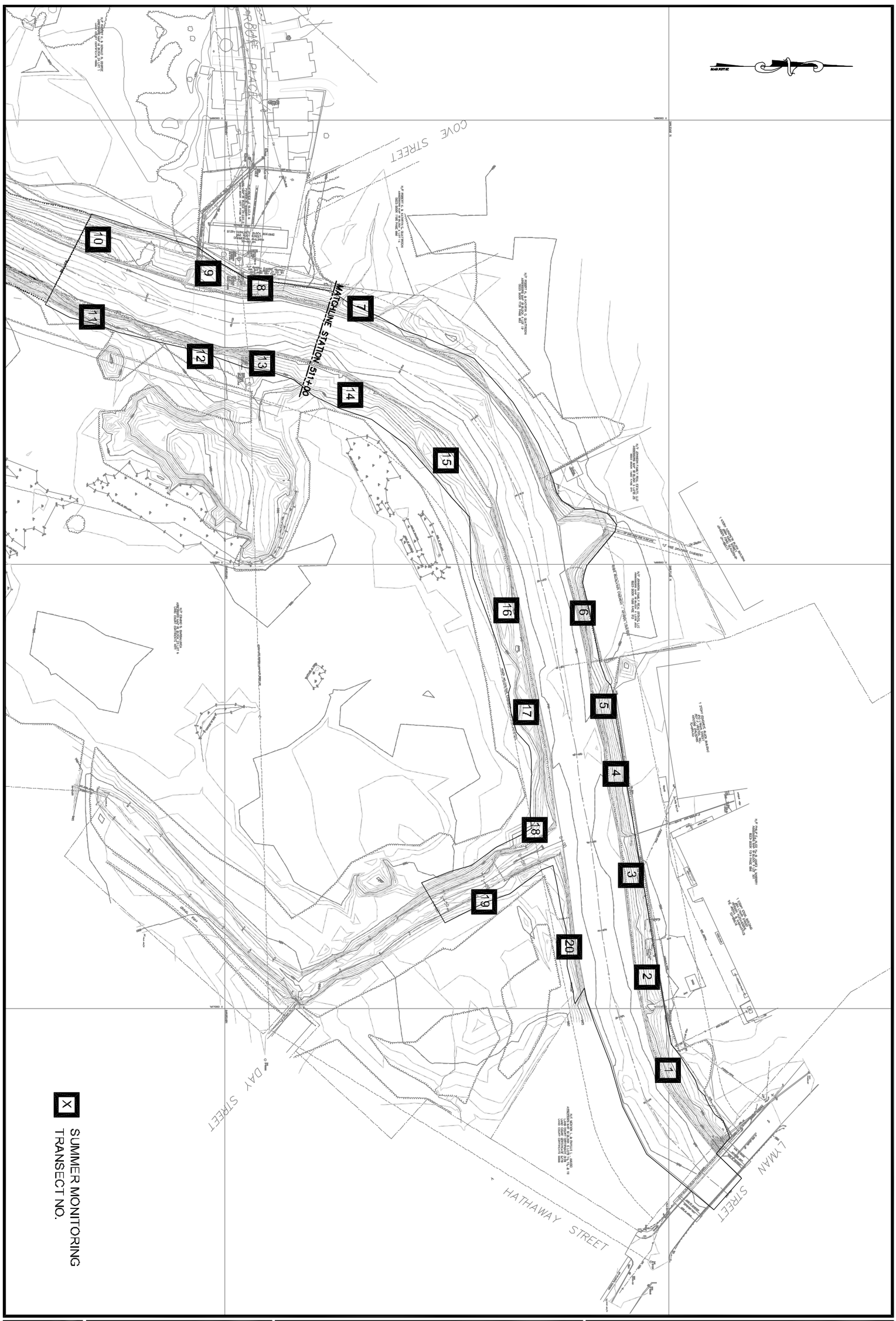

FIGURE: 4	DATE: May 2006	PREPARED BY: WOODLOT ALTERNATIVES, INC. ENVIRONMENTAL CONSULTANTS	PROJECT: 1.5 MILE REMOVAL ACTION ENVIRONMENTAL REMEDIATION CONTRACT GE/HOUSATONIC RIVER SITE PITTSFIELD, MASSACHUSETTS
	SCALE: 1" = 100'		SHEET TITLE: 2005 VEGETATION MONITORING MONITORING TRANSECT LOCATIONS SUMMER 2005
	PROJ. NO. 104141		

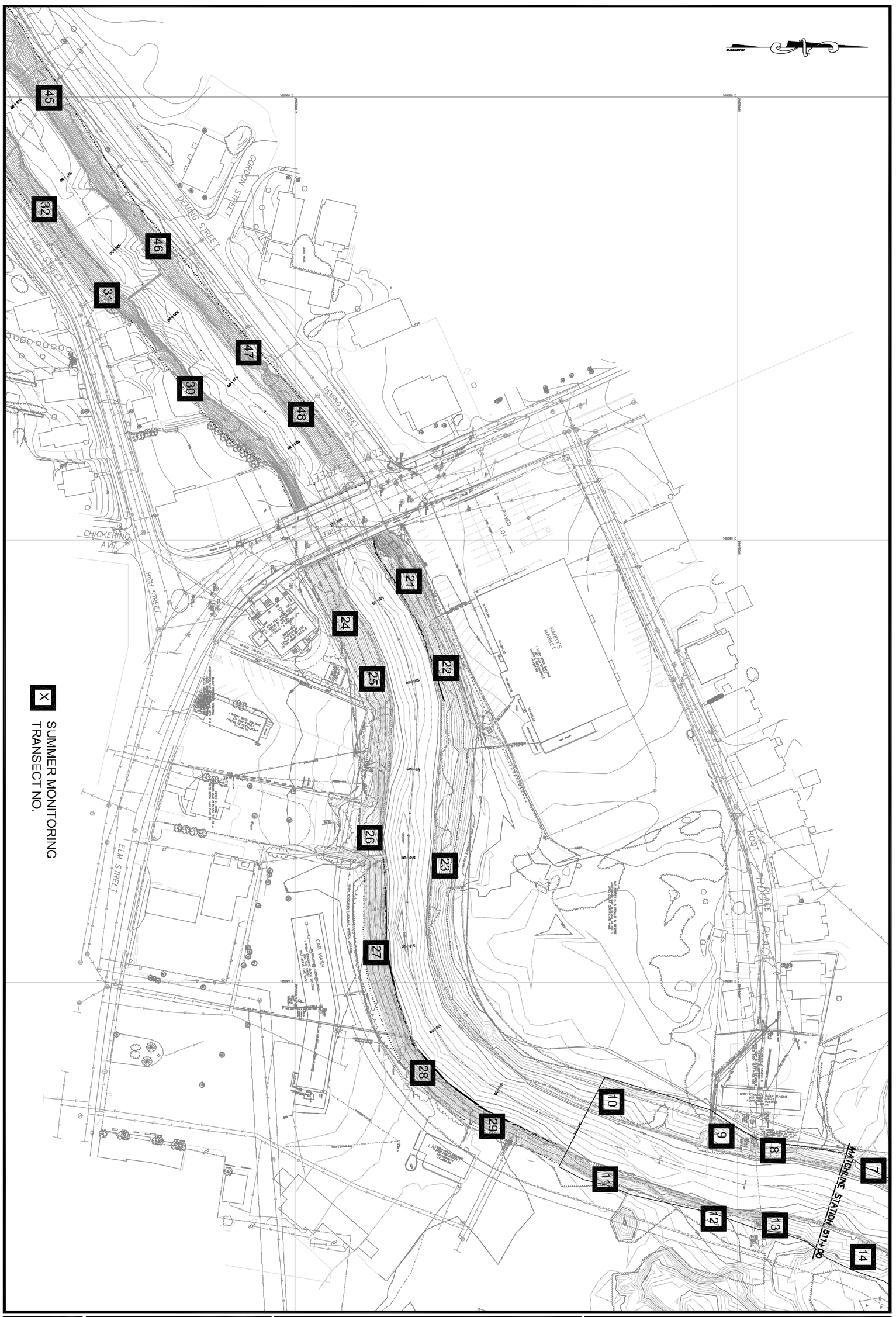

FIGURE: 5	DATE: May 2006	PREPARED BY: WOODLOT ALTERNATIVES, INC. ENVIRONMENTAL CONSULTANTS	PROJECT: 1.5 MILE REMOVAL ACTION ENVIRONMENTAL REMEDIATION CONTRACT GE/HOUSATONIC RIVER SITE PITTSFIELD, MASSACHUSETTS
	SCALE: 1" = 100'		SHEET TITLE: 2005 VEGETATION MONITORING MONITORING TRANSECT LOCATIONS SUMMER 2005
	PROJ. NO. 104141		

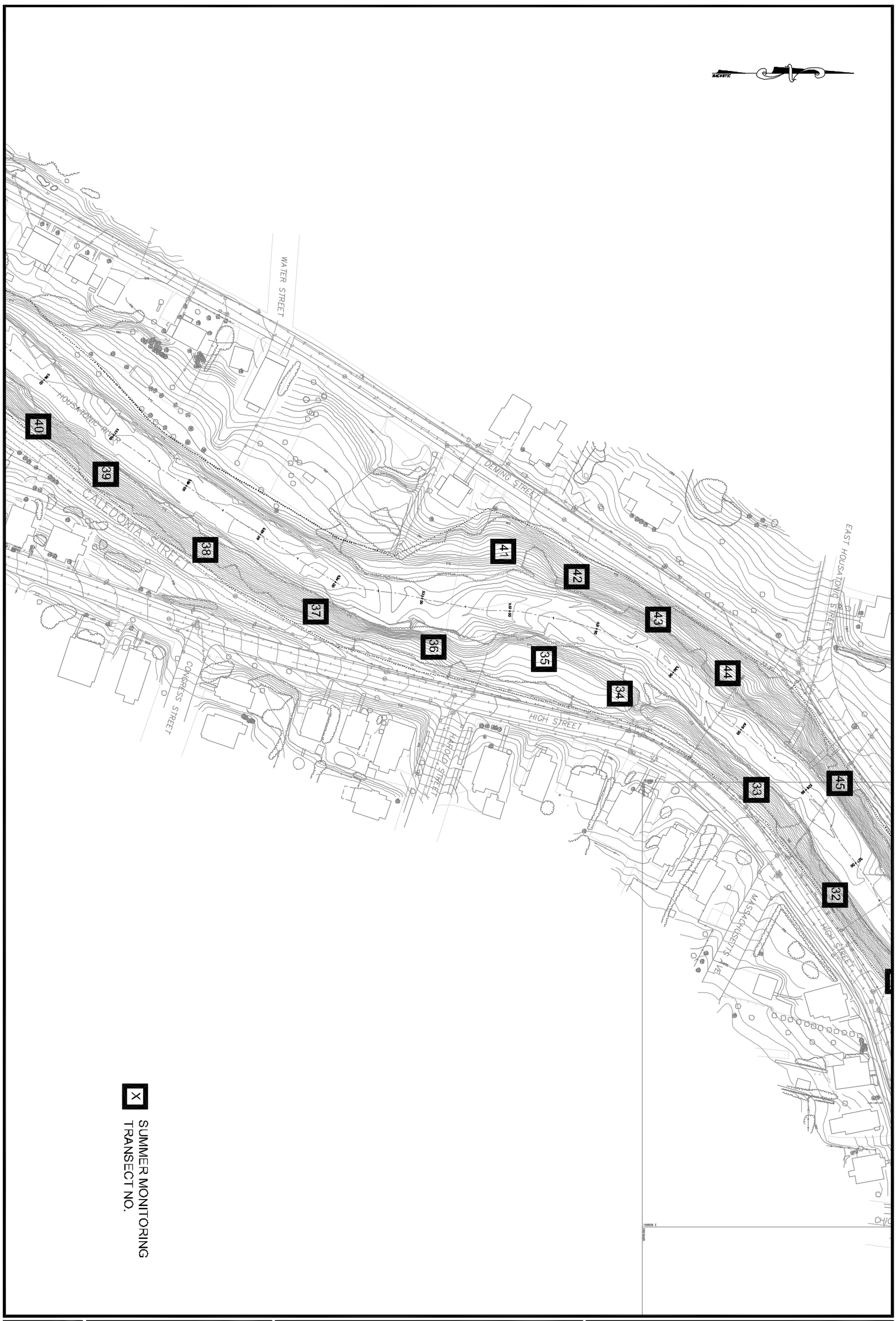

FIGURE: 6	DATE: May 2006	PREPARED BY: WOODLOT ALTERNATIVES, INC. ENVIRONMENTAL CONSULTANTS	PROJECT: 1.5 MILE REMOVAL ACTION ENVIRONMENTAL REMEDIATION CONTRACT GE/HOUSATONIC RIVER SITE PITTSFIELD, MASSACHUSETTS
	SCALE: 1" = 100'		SHEET TITLE: 2005 VEGETATION MONITORING MONITORING TRANSECT LOCATIONS SUMMER 2005
	PROJ. NO. 104141		

Woodlot Alternatives, Inc. Revegetation Monitoring, SSERC 1.5 Mile Reach;
GE/Housatonic River Project, Pittsfield, Massachusetts
Summer 2005

			Dimensions							Trees								Shrubs									Total Plants (Trees + Shrubs)						Herbaceous Veg.		Invasive Plants	
Reach	Bank	Date	*Sample No.*	L (ft)	W (ft)	Area (ft^2)	Slope (xH:1V)	Slope L Corrected for Slope	Area Corrected For Slope	BW	SM	EC	BE	Total Trees	Inverse Tree Density (sq.ft./ Tree)	Plants/ Acre	Percent of Target Density	Percent of Target Density - Monitoring Area	ROD	SD	WH	CC	NA	Total Shrubs	Inverse Shrub Density (sq.ft./ Shrub)	Plants/ Acre	Percent of Target Density	Percent of Target Density - Monitoring Area	Total Plants	Inverse Plant Density (sq.ft./ Plant)	Plants/ Acre	Percent of Target (1430 Plants Per Acre) Density	Arealy-Weighted Coverage by Area and Bank	Arealy-Weighted Coverage by Area	Herb Cover	Herb Cover - Monitoring Area	Percent Invasive Cover	Invasive Sp.
Phase 1	West	8/16/2005	*1*	20	20	400	4	19	388	1	1	3	1	6	67	653	93%		6	4	2	1	1	14	29	1525	209%		20	20	2178	152%			80		0	
Phase 1	West	8/16/2005	*2*	20	15	300	4	15	291	2	0	1	1	4	75	581	83%		4	5	6	1	1	17	18	2468	338%		21	14	3049	213%			98		1	Polygonum cuspidatum
Phase 1	West	8/16/2005	*3*	20	10	200	4	10	194	3	1	1	3	8	25	1742	249%		0	0	0	0	0	0	0	0	0%		8	25	1742	122%			98		0	
Phase 1	West	8/16/2005	*4*	20	13	260	4	13	252	2	1	2	2	7	37	1173	168%		0	0	0	0	0	0	0	0	0%		7	37	1173	82%			100		0	
Phase 1	West	8/16/2005	*5*	20	14	280	4	14	272	1	0	1	0	2	140	311	44%		2	5	1	1	1	10	28	1556	213%		12	23	1867	131%			100		1	Polygonum cuspidatum
Phase 1	West	8/16/2005	*6*	20	16	320	4	16	310	1	3	3	0	7	46	953	136%		0	0	0	0	0	0	0	0	0%		7	46	953	67%			100		1	Phalaris arundinacea (Reed canary grass)
Phase 1	West	8/16/2005	*7*	20	7	140	4	7	136	0	0	0	0	0	0	0	0%		5	4	0	1	2	12	12	3734	511%		12	12	3734	261%			100		0	
Phase 1	West	8/16/2005	*8*	20	17	340	4	16	330	2	3	2	0	7	49	897	128%		0	0	0	0	0	0	0	0	0%		7	49	897	63%			100		0	
Phase 1	West	8/16/2005	*9*	20	25	500	4	24	485	1	1	2	0	4	125	348	50%		5	2	1	1	5	14	36	1220	167%		18	28	1568	110%			100		0	
Phase 1	West	8/16/2005	*10*	20	18	360	4	17	349	1	4	4	0	9	40	1089	156%		0	0	0	0	0	0	0	0	0%		9	40	1089	76%	119%		100		1	Phalaris arundinacea
Phase 1	East	8/16/2005	*11*	20	20	400	4	19	388	1	3	0	5	9	44	980	140%		0	0	0	0	0	0	0	0	0%		9	44	980	69%			100		1	Rhamnus cathartica (Common buckthorn)
Phase 1	East	8/16/2005	*12*	20	20	400	4	19	388	0	2	51	5	58	7	6316	902%		0	2	0	0	0	2	200	218	30%		60	7	6534	457%			100		1	Rosa multiflora (Multiflora rose)
Phase 1	East	8/16/2005	*13*	20	30	600	4	29	582	0	1	17	3	21	29	1525	218%		5	6	0	0	4	15	40	1089	149%		36	17	2614	183%			95		0	
Phase 1	East	8/16/2005	*14*	20	35	700	4	34	679	3	3	13	4	23	30	1431	204%		0	0	0	0	0	0	0	0	0%		23	30	1431	100%			95		1	Phalaris arundinacea
Phase 1	East	8/16/2005	*15*	20	40	800	4	39	776	2	4	7	2	15	53	817	117%		1	0	0	0	0	1	800	54	7%		16	50	871	61%			100		1	Celastrus sp. (Bittersweet)
Phase 1	East	8/16/2005	*16*	20	40	800	4	39	776	3	4	4	5	16	50	871	124%		1	1	0	0	0	2	400	109	15%		18	44	980	69%			100		1	Polygonum cuspidatum
Phase 1	East	8/16/2005	*17*	20	30	600	4	29	582	0	0	1	7	8	75	581	83%		5	9	2	5	3	24	25	1742	239%		32	19	2323	162%			100		0	
Phase 1	East	8/16/2005	*18*	20	15	300	4	15	291	2	0	2	1	5	60	726	104%		2	1	0	0	2	5	60	726	99%		10	30	1452	102%			100		0	
Phase 1	East	8/16/2005	*19*	20	10	200	4	10	194	0	0	0	0	0	0	0	0%		4	3	1	3	2	13	15	2831	388%		13	15	2831	198%			100		0	
Phase 1	East	8/16/2005	*20*	20	8	160	4	8	155	0	0	1	0	1	160	272	39%	**167%**	3	5	0	2	0	10	16	2723	373%	**106%**	11	15	2995	209%	140%	136%	100	98.3%	0	
Trans.	West	8/17/2005	*21*	20	11	220	2	10	197	0	2	1	2	5	44	990	198%		0	2	0	0	0	2	110	396	54%		7	31	1386	113%			100		0	
Trans.	West	8/17/2005	*22*	20	11	220	2	10	197	1	0	3	0	4	55	792	158%		0	3	0	0	0	3	73	594	81%		7	31	1386	113%			100		0	
Trans.	West	8/17/2005	*23*	20	15	300	2	13	268	2	2	3	3	10	30	1452	290%		1	0	1	1	0	3	100	436	60%		13	23	1888	153%	129%		95		0	
Trans.	East	8/17/2005	*24*	20	12	240	2	11	215	1	0	0	0	1	240	182	36%		4	0	0	1	0	5	48	908	124%		6	40	1089	89%			90		0	
Trans.	East	8/17/2005	*25*	20	14	280	2	13	250	1	2	11	4	18	16	2800	560%		4	1	0	1	0	6	47	933	128%		24	12	3734	304%			95		0	
Trans.	East	8/17/2005	*26*	20	12	240	2	11	215	1	1	4	0	6	40	1089	218%		4	0	0	0	0	4	60	726	99%		10	24	1815	148%			100		0	
Trans.	East	8/17/2005	*27*	20	21	420	2	19	376	1	0	0	0	1	420	104	21%		4	4	0	0	0	8	53	830	114%		9	47	933	76%			100		0	
Trans.	East	8/17/2005	*28*	20	17	340	2	15	304	0	1	1	2	4	85	512	102%		4	0	0	4	0	8	43	1025	140%		12	28	1537	125%			95		1	Rosa multiflora
Trans.	East	8/17/2005	*29*	20	13	260	2	12	233	0	0	0	1	1	260	168	34%	**193%**	5	1	0	0	0	6	43	1005	138%	**119%**	7	37	1173	95%	135%	149%	100	97.3%	0	
Phase 2	East	8/17/2005	*30*	20	36	720	3	34	683	0	0	4	1	5	144	303	43%		4	3	2	6	7	22	33	1331	182%		27	27	1634	114%			95		0	
Phase 2	East	8/17/2005	*31*	20	33	660	3	31	626	0	3	2	3	8	83	528	75%		2	3	1	4	2	12	55	792	108%		20	33	1320	92%			100		0	
Phase 2	East	8/17/2005	*32*	20	25	500	3	24	474	0	0	0	4	4	125	348	50%		5	0	0	0	0	5	100	436	60%		9	56	784	55%			100		0	
Phase 2	East	8/17/2005	*33*	20	24	480	3	23	455	0	2	3	4	9	53	817	117%		4	2	2	4	1	13	37	1180	162%		22	22	1997	140%			100		0	
Phase 2	East	8/17/2005	*34*	20	49	980	3	46	930	3	3	7	4	17	58	756	108%		2	0	0	0	0	2	490	89	12%		19	52	845	59%			100		0	
Phase 2	East	8/17/2005	*35*	20	40	800	3	38	759	3	1	8	1	13	62	708	101%		3	0	0	0	0	3	267	163	22%		16	50	871	61%			95		0	
Phase 2	East	8/17/2005	*36*	20	27	540	3	26	512	0	3	1	0	4	135	323	46%		3	1	2	2	5	13	42	1049	144%		17	32	1371	96%			95		0	
Phase 2	East	8/17/2005	*37*	20	15	300	3	14	285	0	2	0	2	4	75	581	83%		3	0	0	0	0	3	100	436	60%		7	43	1016	71%			85		0	
Phase 2	East	8/17/2005	*38*	20	9	180	3	9	171	0	0	1	13	14	13	3388	484%		2	0	0	0	0	2	90	484	66%		16	11	3872	271%			95		0	
Phase 2	East	8/17/2005	*39*	20	11	220	3	10	209	1	0	0	12	13	17	2574	368%		3	0	0	0	0	3	73	594	81%		16	14	3168	222%			100		0	
Phase 2	East	8/17/2005	*40*	20	14	280	3	13	266	0	1	0	6	7	40	1089	156%		4	0	0	0	0	4	70	622	85%		11	25	1711	120%	97%		95		0	
Phase 2	West	8/17/2005	*41*	20	56	1120	3	53	1063	6	4	9	10	29	39	1128	161%		2	0	2	0	2	6	187	233	32%		35	32	1361	95%			100		0	
Phase 2	West	8/17/2005	*42*	20	23	460	3	22	436	1	4	4	0	9	51	852	122%		3	0	0	0	0	3	153	284	39%		12	38	1136	79%			100		0	
Phase 2	West	8/17/2005	*43*	20	25	500	3	24	474	2	1	6	7	16	31	1394	199%		3	0	0	0	0	3	167	261	36%		19	26	1655	116%			95		0	
Phase 2	West	8/17/2005	*44*	20	28	560	3	27	531	5	1	3	2	11	51	856	122%		3	0	2	0	0	5	112	389	53%		16	35	1245	87%			95		0	
Phase 2	West	8/17/2005	*45*	20	16	320	3	15	304	1	0	0	0	1	320	136	19%		4	4	2	6	2	18	18	2450	336%		19	17	2586	181%			95		0	
Phase 2	West	8/17/2005	*46*	20	7	140	3	7	133	0	0	1	2	3	47	933	133%		4	0	0	0	0	4	35	1245	170%		7	20	2178	152%			60		0	
Phase 2	West	8/17/2005	*47*	20	8	160	3	8	152	0	3	0	0	3	53	817	117%		3	0	0	0	0	3	53	817	112%		6	27	1634	114%			70		0	
Phase 2	West	8/17/2005	*48*	20	7	140	3	7	133	1	1	0	2	4	35	1245	178%	**126%**	3	0	0	0	0	3	47	933	128%	**88%**	7	20	2178	152%	108%	107%	85	92.7%	0	

Species Legend	
BW = black willow	SD = silky dogwood
SM = silver maple	Red-osier = red-osier dogwood
EC = eastern cottonwood	AW = arrowwood
BE = box elder	WB = winterberry
vines = river grape	CC = chokecherry

Target Planting Densities			
Normal	Trees:	700	per acre
	Shrubs:	730	per acre
	Total	1430	per acre
Geoweb	Trees:	500	per acre
	Shrubs:	730	per acre
	Total	1230	per acre

Monitored Lengths - Summer 2005							
		Phase 1		Transition Phase		Phase 2	
		West	East	West	East	West	East
Start		500+00	502+50	519+75	514+00	522+75	524+00
Stop		506+75	514+00	521+50	521+50	534+00	538+50
Start		509+50	-				
Stop		514+00	-				
Add 300 for drainage ditch			300				
Total		1125	1450	175	750	1125	1450
No. Stations		10	10	3	6	8	11
Station Width		20	20	20	20	21	22
Monitored Length		200	200	60	120	168	242
Percent of Total		18%	14%	34%	16%	15%	17%

Appendix F

Invasive Plant Control Memo Updates

WOODLOT ALTERNATIVES, INC.
ENVIRONMENTAL CONSULTANTS

Memorandum

To: Izabela Zapisek, Weston Solutions, Inc.

From: Todd Chadwell, Woodlot Alternatives, Inc.

Cc: Michael Chelminski, Woodlot Alternatives, Inc.

Date: March 9, 2006

Re: Housatonic 1½-Mile Reach Invasive Species

The following invasive plants were observed on the 1½-Mile Remedial Action Area of the General Electric - Pittsfield/Housatonic River Site during the vegetation monitoring work performed on August 16 and 17, 2005.

Polygonum cuspidatum – Japanese knotweed
Lythrum salicaria – purple loosestrife
Phalaris arundinacea – reed canarygrass
Rhamnus cathartica – common buckthorn
Celastrus orbiculatus – oriental bittersweet
Rosa multiflora – multiflora rose

Purple loosestrife was observed growing in and below planting areas in deposited soils and sediments within rip rap. Where purple loosestrife was found growing in the planting areas, it was removed by the observer; therefore, it does not appear in the Summer 2005 Vegetation Monitoring spreadsheet.

Japanese knotweed was marked with pink flagging to facilitate its future removal.

Although occurrences of invasive plants did not appear to exceed the applicable 5 percent areal coverage performance standard, all noted invasive species were observed in areas adjacent to the planting areas and likely pose a risk for future site invasion. Of the species listed, Japanese knotweed and purple loosestrife pose the greatest risk to restoration plantings in the 1½-Mile Remedial Action Area. It is recommended that populations of Japanese knotweed and purple loosestrife be controlled now while their occurrences are sporadic. This is due to the fact that populations of these plants spread rapidly and, once established, may be very costly to eradicate.

30 Park Drive Topsham, Maine 04086 Phone 207-729-1199 Fax 207-729-2715

Appendix G

Post High Flow Inspection Memos

WOODLOT ALTERNATIVES, INC.
ENVIRONMENTAL CONSULTANTS

Memorandum

To: Joel Lindsay, Weston Solutions, Inc.

From: Michael Chelminski, Woodlot Alternatives, Inc.

Date: April 25, 2005

Re: Post 1,500-CFS Inspection, April 13, 2005

Woodlot Alternatives, Inc. (Woodlot) performed monitoring of riprap, aquatic habitat enhancement structures, and streambank vegetation on the 1½-Mile Reach of the Housatonic River on April 13, 2005, in accordance with the post-1,500-cubic-feet-per-second (cfs) monitoring requirements set forth in accordance with the May 2004 1½-Mile Reach Restoration Monitoring Plan. The monitoring was performed in response to a hydrologic event on April 3, 2005, during which a peak flow of 2,910 cfs was recorded at the USGS stream gaging station on the East Branch of the Housatonic River in Coltsville, Massachusetts (Station No. 01197000).

The flow during the post-event monitoring work was approximately 200-cfs, as recorded at the USGS Coltsville gage. The monitoring work was performed by walking along the riverbank and looking for observable deficiencies in the required features. The monitoring commenced at the upper limit of the Phase 1 Reach immediately downstream of the Lyman Street Bridge, and proceeded downstream through the Phase 2 Area to the limit of completed work in the Phase 3 Area.

No deficiencies in the permanent features were observed during the monitoring work that could be attributed to the peak flows experienced on April 3, 2005. Some minor soil erosion was observed, but this appeared to be the result of upland runoff and not the result of riverine flows. Some previously installed plant stock and tree gages were knocked over, but it is unknown whether this was the result of flooding or of construction activities. Of note is the observed wrack line, which provides a qualitative estimate of the peak flood elevation, that was observed at the top of the riprap at several locations.

1.5 Mile Daily Field Report

Name:	MICHAEL CHELMINSKI	4-13-05 **Date:**	
Team Members:	WOODLOT ALTERNATIVES, INC	**Project:** 1½-Mile	GE Pittsfield, MA 1.5 Mile

Work Performed

Location:

1) Post 1500-cfs Riprap Monitoring

2) Discuss Aquatic Habitat Structure Installation, Phase 3

3) Review Low Plantings w/ Joel Lindsay

4) Review Spring 2005 Phase 2 Plantings

Total Hours Worked:

Materials Received:

Comments:

WOODLOT ALTERNATIVES, INC.
ENVIRONMENTAL CONSULTANTS

Memorandum

To: Joel Lindsay, Weston Solutions, Inc.

From: Michael Chelminski, Woodlot Alternatives, Inc.

Date: October 18, 2005

Re: Post 1,500-CFS Inspection, October 12, 2005

Woodlot Alternatives, Inc. (Woodlot) performed monitoring of riprap, aquatic habitat enhancement structures, and streambank vegetation on the 1½-Mile Reach of the Housatonic River on October 12, 2005, in accordance with the post-1,500-cubic-feet-per-second (cfs) monitoring requirements set forth in the May 2004 1½-Mile Reach Restoration Monitoring Plan. The monitoring was performed in response to a hydrologic event on October 9, 2005, during which a peak flow of 6,510 cfs was recorded at 5:30 AM at the United States Geological Survey (USGS) stream gaging station on the East Branch of the Housatonic River in Coltsville, Massachusetts (Station No. 01197000), as reported on the USGS station website (http://waterdata.usgs.gov/ma/nwis/uv?format=html&period=7&site_no=01197000).

The flow during the post-event monitoring work was approximately 200-cfs, as recorded at the USGS Coltsville gage. The monitoring work was performed by walking along the riverbank and looking for observable effects on the riverbed and riverbank from the high flow event. The monitoring commenced at the upper limit of the Phase 1 Reach immediately downstream of the Lyman Street Bridge, and proceeded downstream through the Phase 2 Area to the limit of completed work in the Phase 3 Area at the Pomeroy Avenue bridge.

Flood-related damage to installed vegetation and riprap was observed during the October 12 site visit. Damage to installed vegetation included trees and tree cages knocked over and/or swept away. Erosion of soil was observed at the base of some plants, along the soil-riprap interface at locations with apparently high flow speeds, and in areas that where herbaceous seed was recently installed. The overall level of soil erosion is considered minor given the extreme nature of the flood event.

Observed damage to installed riprap was generally localized, and included:

1. An area of local scour on the left (East) bank immediately downstream of the temporary dam between the Phase 1 and Transition Phase areas (STA 514+00);
2. Displacement of riprap on both banks adjacent to the downstream termination of the articulated concrete mat (ACM) (STA 524+00); and
3. Sloughing of riprap and underlying soil along the left (East) bank downstream from the ACM (STA 525+50).

30 Park Drive Topsham, Maine 04086 Phone 207-729-1199 Fax 207-729-2715
E-mail: mail@woodlotalt.com Web Site: http://www.woodlotalt.com

Photo 1: Swept Vegetation and Debris, Right (West) Bank in Phase 1 Area

Photo 2: Swept Vegetation and Debris, Left (East) Bank in Phase 1 Area Upstream of Temporary Dam

Photo 3: Scour Along Left (East) Bank Downstream of Temporary Dam in Transition Phase Area

Photo 4: Swept Vegetation and Uprooted Plant Stock, Right (West) Bank in Transition Phase Area

Photo 5: Sloughed Riprap, Left (East) Bank in Phase 2 Area Immediately Downstream of ACM

Photo 6: Sloughed Riprap, Right (West) Bank in Phase 2 Area Immediately Downstream of ACM

Photo 7: Sloughed Riprap, Left (East) Bank in Phase 2 Area Downstream of ACM

Photo 8: Swept Vegetation, Right (West) Bank in Phase 2 Area

Photo 9: Swept Vegetation, Right (West) Bank in Phase 3 Area

Photo 10: Swept Vegetation with Minor Soil Loss at Rock/Soil Interface, Left (East) Bank in Phase 3 Area

Photo 11: Erosion of Soil, Left (East) Bank in Phase 3 Area