# UT BEAR CREEK (Weaver/McLeod) EEP #92347 -- Chatham County
# 2012 Stream Restoration Monitoring Report -- Year 3 of 5

**North Carolina Department of Environment and Natural Resources**
**Ecosystem Enhancement Program (NCDENR-EEP)**

**Monitoring Data Collected in 2012 --- Project Constructed in 2009**

**MY-3 Final Report submitted February 13, 2013**

**North Carolina Department of**
**Environment and Natural Resources**
**Ecosystem Enhancement Program**
**1652 Mail Service Center**
**Raleigh, NC 27699-1652**

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**Prepared by:**

**Robert J. Goldstein & Associates, Inc.**
**RJG&A Environmental Consultants**
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**APPENDICES**

# 1.0 Executive Summary

**Goals & Objectives:** The goals of the UT Bear Creek (Weaver/McLeod) #92347 Stream Restoration Project are to improve water quality, reduce excess sedimentation input from channel banks, attenuate floodwater flows, and restore aquatic and riparian habitat. To achieve these goals, the project has the following objectives:

- Reduce nutrient loading from the on-site cattle operation by fencing out cattle and re-vegetating the riparian buffer;
- Restore stable channel dimension, pattern, and profile so that on-site streams will transport watershed flows and sediment loads without aggradation or erosion;
- Improve aquatic habitat by enhancing stream bed variability, providing shaded areas within the channel, and introducing woody debris in the form of rootwads, log vanes, and log sills;
- Enhance wildlife habitat by re-vegetating the riparian buffers with native plants, helping to create a wildlife corridor through existing agricultural lands.

**Project Setting:** The project is located on private farmland in southwestern Chatham County in the Bear Creek community, on the southeast side of NC-902 across the road from Chatham Central High School. It is in the Carolina Slate Belt region of the Piedmont province, in Cape Fear River HUC 03030003-070050 (NC-DWQ sub-basin 03-06-12). It includes stream channel and riparian restoration work on two parallel tributaries of Bear Creek: the Northern UT restored channel length is 3,132 feet, and the Southern UT restored channel length is 1,745 feet. The protected easement along each stream extends from the NC-902 right-of-way downstream (southeastward) to their respective confluences with Bear Creek. The adjacent land is pasture on both sides of the two restored tributaries.

**Vegetation Condition:** Vegetation monitoring plot data were collected in September to October 2012. Eight of the 12 plots had at least 320 surviving planted trees per acre, and the average density of surviving planted trees among the 12 plots is 371 trees per acre (Table 7). The four plots that did not meet the 320 trees/acre buffer success threshold (plots 1, 2, 4 and 9) had 202, 162, 243, and 162 surviving planted trees per acre, respectively. However, native volunteer tree seedlings (mostly green ash) are abundant in all plots, and the total density of native trees and shrubs (planted plus volunteers) ranges from 769 to 4452 per acre. Chinese privet, the only non-native woody plant recorded in the plots, was present in three plots. It comprised 7 to 8% of total woody stems in plots 2 and 4, and 25% of woody stems in plot 3, all in the upper portion of the northern tributary where it has apparently spread from the roadside.

Tree growth appears stunted in several vegetation plots and in some areas outside of the plots, especially in the upper segments along both tributaries, apparently due to dense clayey subsoil and lack of topsoil in these areas. Outside of the monitoring plots, more

than half of the problem areas mapped as "low planted stem density" in 2011 now have adequate total woody stem density (volunteer trees plus surviving planted trees) and were thus removed from "problem areas" on the CCPV maps. The currently mapped problem areas (Dec 2012) where planted and volunteer stems combined are below the target density (five areas along the Northern UT and two along the Southern UT) have been re-labeled as "low woody stem density."

Several large trees in the riparian forest near Bear Creek south of the Northern UT have fallen on the easement fence and broken the wires and connectors. There are currently no livestock held on the adjacent pasture, and no livestock damage was observed, but fence repair should be completed prior to releasing any livestock in the adjacent pasture.

**Stream Channel Condition:** RJG&A staff collected cross-section, longitudinal, and pebble data in September and October 2012. Overall the project appears to have met its morphological goals, and its profile parameters closely mirror the design criteria. Four segments of stream-bank erosion along the Northern UT noted in 2010 and 2011 appear stable, with no further erosion damage noted. One of these segments now has sufficient perennial vegetation including Salix and Juncus that it is no longer a "problem area." The other three segments have mostly annual vegetation , and are still identified as problem areas (total 150 lin.ft). The Southern UT has no channel problem areas.

**Wetland Hydrology:** In Chatham County wetland hydrologic success requires that soils be saturated for at least 27 days (12.5% of the growing season, April through October). Data downloaded from gauge 138BDBD7 (western well, near easement fence) indicates that soils were saturated within 12 inches of the surface for 30 days; gauge 9BEA457 (eastern well, near stream) indicates that soils were saturated within 12 inches of the surface for 28 days. Both gauges meet the hydrologic success criteria. The crest gauge installed along the Northern UT was checked during spring annual assessment and the fall data collection. Based on the cork levels in the crest gauge, field examination for evidence of over-bank flow, and precipitation records at the Siler City Airport (SILR) precipitation gage, there does not appears to have been any flow event exceeding bankfull in the past year. Hydrologic data are summarized in Appendix E.

**Supporting Data Availability:** Summary information/data related to the occurrence of items such as beaver or encroachment and statistics related to performance of various project and monitoring elements can be found in the tables and figures in the report appendices. Narrative background and supporting information formerly found in these reports can be found in the Baseline Monitoring Report (formerly Mitigation Plan) and in the Mitigation Plan (formerly the Restoration Plan) documents available on EEP's website. All raw data supporting the tables and figures in the appendices is available from EEP upon request.

# 2.0 Methodology

Monitoring methodologies follow the current EEP-provided templates and guidelines (Lee *et al* 2008; NC-EEP 2011). Photographs were taken with an Olympus digital camera. A Trimble Geo XT handheld mapping-grade GPS unit was used to collect cross section endpoints, vegetation corners, stream photo points, and problem area locations. All problem areas identified in the fall 2011 and spring 2012 versions of the CCPV were re-evaluated in October 2012.

## 2.1 Stream Methodology

Longitudinal stationing along each UT was assigned in ArcMap using the as-built centerline data collected in May 2009, beginning with 10+00 at the upper end of each restored stream. Nine permanent cross sections (six along the Northern UT and three along the Southern UT) were selected and staked during April 2010. Geomorphology data for monitoring year 3 were collected during September to October 2012 using a South Total Station for the longitudinal profiles and a Nikon automatic level for the cross sections. Data collection methods employed were a combination of those specified in the project Mitigation Plan and standard regulatory guidance and procedures documents including the USACE *Stream Mitigation Guidelines*, US Forest Service's *Stream Channel Reference Sites*, and *Applied River Morphology* (USACE, 2003; Harrelson et al., 1994; Rosgen, 1996). Photographs facing downstream were taken at each cross section. Stream bed particle distribution was assessed using the Wolman pebble count method.

## 2.2 Vegetation Methodology

Twelve representative vegetation survey plots (seven along the Northern UT and five along the Southern UT) were selected and installed in April 2010. The four corners of each 10 x 10 meter plot are marked with metal conduit pipe. Vegetation data for monitoring year 3 were collected between September 12 and October 26, 2012.

Level 1 (planted woody stems) and Level 2 (volunteer woody stems) data collection was performed in all plots, pursuant to the most recent CVS/EEP protocol (Lee *et al* 2008). Within each plot, each planted woody stem location (x and y) was recorded, and height and live stem diameter were recorded for each stem location. All planted stems were identified with pink flagging. Vegetation was identified using Weakley (2010). Photos were taken of each vegetation plot from the 0,0 corner.

## 2.3 Hydrology

**Wetlands:** Daily groundwater level data were collected from two Remote Data Systems automated groundwater monitoring gauges installed in the enhanced riparian wetland adjacent to the Northern UT in April 2010 in accordance with USACE guidance (USACE 2000). These gauge data were plotted against precipitation data from the Siler City

Airport ECONet station (SILR). Wetland gauge and precipitation data and graphs are provided in Appendix E of this monitoring report.

**Streams:** The UT to Bear Creek restoration includes One PVC crest gauge was installed in 2010 at Station 3280 along the Northern UT to verify the on-site occurrence of bankfull events. The crest gauge was evaluated during the spring and fall data collection visits, and the site was assessed for evidence of bankfull events. Dates of potential bankfull events were inferred using precipitation data from the Siler City Airport ECONet station (SILR) (NC CRONOS, 2010). Results are provided in Appendix E.

# 3.0 References


Harrelson, Cheryl, C. L. Rawlins, and John Potpondy. (1994). *Stream Channel Reference Sites: An Illustrated Guide to Field Technique.* USDA, Forest Service. General Technical Report RM-245.

Lee, Michael T., Peet, Robert K., Roberts, Steven D., Wentworth, Thomas R. (2008). *CVS-EEP Protocol for Recording Vegetation version 4.2, October 2008*. Retrieved September 2011, from: http://cvs.bio.unc.edu/methods.htm

NC-DENR Ecosystem Enhancement Program. (2011*). Monitoring Report Template and Guidance version 1.4., November 2011* . Retrieved September 2011, from: http://portal.ncdenr.org/web/eep/fd-forms-templates

Radford, A.E., H.E. Ahles, and C.R. Bell (1968). *Manual of the Vascular Flora of the Carolinas*. University of North Carolina Press. Chapel Hill, NC.

Robert J. Goldstein & Associates, Inc. (2010). *Baseline Monitoring Document and As-built Baseline Report UT to Bear Creek(#92347)*. August 13, 2010.

Rosgen, D. L. (1996) *Applied River Morphology*. Wildland Hydrology Books, Pagosa Springs, CO.

Rosgen, D.L. (1997). "A Geomorphological Approach to Restoration of Incised Rivers. In *Proceedings of the Conference on Management of Landscapes Disturbed by Channel Incision*, ed. S.S.Y. Wang, E.J. Langendoen and F.B. Shields, Jr. University of Mississippi Press, Oxford, MS.

USACOE (2003) *Stream Mitigation Guidelines*. USACOE, USEPA, NCWRC, NCDENR-DWQ

Weakley, Alan (2010). *Flora of the Carolinas, Virginia, Georgia, and Surrounding Areas*. Retrieved March 2011 from: http://www.herbarium.unc.edu/flora.htm.

**Responses to EEP Review Comments on Draft 2012 Monitoring Report**

Comments from Perry Sugg, 30 Jan 2013: EEP has conducted our review of the referenced MY03 (2012) monitoring report and has the following comments.

Executive Summary

- Veg: since the buffer area is generating buffer restoration credits (for the Randleman Reservoir), vegetation success criteria should be tied to those success criteria. Buffer restoration success in the strictest sense is defined as 320 planted trees/ac at the end of 5 years. Report planted trees/ac as basis for success, but also report total trees/ac to reflect actual conditions.
- Veg: note small stand of privet. No need to note Asian spiderwort in text.

**RJGA Response: We revised the Vegetation Condition paragraph in the Executive Summary to address density of surviving planted trees (rather than all planted woody stems) relative to the 320 planted trees per acre criterion for buffer restoration. We also addressed total woody stem density (planted plus volunteers) to demonstrate that the four plots not meeting the criterion have abundant volunteer tree seedlings to adequately mitigate the lower survival rate of planted trees in these plots. We also discussed the relative density of exotic Chinese privet in the three plots where it was recorded.**

Tables CVS Data Table

- Revise/replace Table 7 (Veg Plot Attribute Table) and Table 9 (Planted/Total Stem Counts) with appropriate CVS tables once you upload data to CVS using new tool.

**RJGA Response: Tables 7 and 9 are revised using the data entry tool v. 2.3.1**

Please make revisions to the *2012 Final Monitoring Report – Year 3* as described above and submit 2 hardcopies of the revised Final report along with e-files. Include a response to comment letter as well.

If you have any questions about the CVS tool please contact Melonie Allen at (919) 707-8540 or melonie.allen@ncdenr.org. Feel free to call me as well.
Thank you.

Perry Sugg
EEP Project Manager
(919) 707-8937
perry.sugg@ncdenr.gov

# Appendix A. Project Vicinity Map and Background Tables

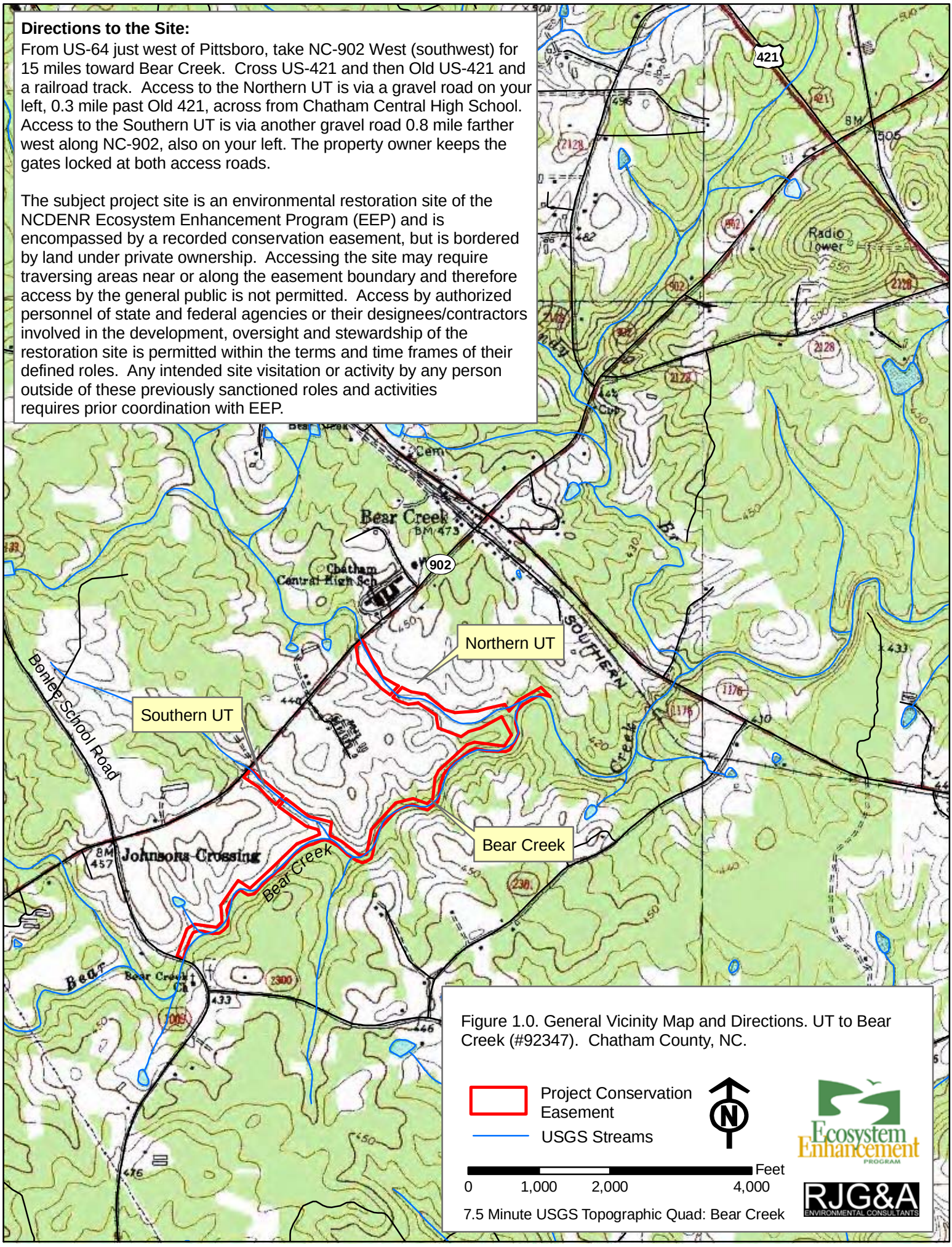



Figure 1.0. General Vicinity Map and Directions. UT to Bear Creek (#92347). Chatham County, NC.

| Table 1.0. Project Restoration Components<br>UT Bear Creek (Weaver/McLeod) Stream Restoration - Project #92347 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Project Component or Reach ID** | **Existing Feet/Acres** | **Restoration Level** | **Approach** | **Footage or Acreage** | **Stationing** | **Mitigation Ratio** | **Ratio Multplier** | **Mitigation Units** | **Comment** |
| | 4.66 | R | -- | 4.66 ac. | -- | 1:1 | 1 | 4.66 | Vegetative Plantings to pasture areas within 50 feet of creek where density of existing vegetation is less than 100 stems/acre. |
| Northern UT to Bear Creek Buffer | 0.78 | E | -- | 0.78 ac. | -- | 2:1 | 0.5 | 0.39 | Vegetative Plantings to pasture areas within 50 feet of creek where density of existing vegetation is greater than 100 stems/acre, but less than 200 stems/acre |
| | 2.32 | R | -- | 2.32 ac. | -- | 1:1 | 1 | 2.32 | Vegetative Plantings to pasture areas within 50 feet of creek where density of existing vegetation is less than 100 stems/acre. |
| Southern UT to Bear Creek Buffer | 0.42 | E | -- | 0.42 ac. | -- | 2:1 | 0.5 | 0.21 | Vegetative Plantings to pasture areas within 50 feet of creek where density of existing vegetation is greater than 100 stems/acre, but less than 200 stems/acre |
| | | | PI | 550 ft. | 10+00-15+50 | 1:1 | 1 | 550 | |
| | | | PII | 125 ft. | 15+50-16+75 | 1:1 | 1 | 125 | |
| | | | PI | 225 ft. | 16+75-19+00 | 1:1 | 1 | 225 | |
| | | | PII | 350 ft. | 19+50-23+00 | 1:1 | 1 | 350 | |
| | | | PI | 1,675 ft. | 23+00-39+75 | 1:1 | 1 | 1,675 | |
| Northern UT to Bear Creek | 2,832 | R | PII | 157 ft. | 39+75-41+32 | 1:1 | 1 | 157 | Restore channel on new location |
| | | | PI | 1,298 ft. | 10+00-16+67<br>17+19-23+50 | 1:1 | 1 | 1,298 | |
| Southern UT to Bear Creek | 1,635 | R | PII | 395 ft. | 23+50-27+45 | 1:1 | 1 | 395 | Restore channel on new location |
| Riparian Wetland along Northern UT | 0.49 | E | -- | 0.39 ac. | -- | 2:1 | 0.5 | 0.2 | Supplemental plantings to existing wetlands |

**Table 1.1. Component Summations**
**UT Bear Creek (Weaver/McLeod) Stream Restoration - Project #92347**

| Restoration Level | Stream (lin.ft) | Riparian Wetland (acre) | | Non-Ripar (acre) | Upland (acre) | Buffer (acre) | BMP |
|---|---|---|---|---|---|---|---|
| | | Riverine | Non-Riverine | | | | |
| Restoration | 4,775 | | | | | 6.98 | |
| Enhancement | | 0.39 | | | | | |
| Enhancement I | | | | | | 1.2 | |
| Enhancement II | | | | | | | |
| Creation | | | | | | | |
| Preservation | | | | | | | |
| HQ Preservation | | | | | | | |
| | | | | | | | |
| **Totals (Feet/Acres)** | **4,775** | **0.39** | | **0** | **0** | **8.18** | **0** |
| **MU Totals** | **4,775** | **0.2** | | **0** | **0** | **7.58** | **0** |

Non-Applicable

| Table 2. Project Activity and Reporting History<br>UT Bear Creek (Weaver/McLeod) Stream Restoration - Project #92347 | | |
|---|---|---|
| | | |
| Elapsed Time Since Grading Complete: 3 yrs 7 months | | |
| Elapsed Time Since Planting Complete: 3 yrs 6 Months | | |
| Number of Reporting Years[1]: 3 | | |
| **Activity or Deliverable** | **Data Collection Complete** | **Completion or Delivery** |
| Restoration Plan | U | Jul-07 |
| Final Design – Construction Plans | U | Jan-08 |
| Construction | NA | Apr-09 |
| Containerized, bare root and B&B plantings for entire project | NA | Apr-09 |
| Mitigation Plan / As-built (Year 0 Monitoring – baseline) | Apr-10 | Aug-10 |
| Year 1 Monitoring | Nov-10 | Dec-10 |
| Year 2 Monitoring | Aug-Sep 2011 | Sep-11 |
| Year 3 Monitoring | Sep-Oct 2012 | Dec-12 |

| Table 3. Project Contacts Table<br><br>UT of Bear Creek Stream Restoration - Project #92347 | |
|---|---|
| **Designer** | Ko & Associates, P.C.<br>1011 Schaub Drive, Suite 202<br>Raleigh, North Carolina 27606<br>R. Kevin Williams, PE, (919) 851-6066 |
| **Construction Contractor** | Land Mechanics Designs, Inc.<br>126 Circle G Lane<br>Willow Spring, NC 27592-9671<br>(919) 639-6132 |
| **Survey Contractor** | Stewart Proctor<br>319 Chapanoke Road, Suite 106<br>Raleigh NC 27603<br>(919) 779-1855 |
| **Planting Contractor** | Habitat Assessment and Restoration Program<br>301 McCullough Drive, 4th Floor<br>Charlotte, NC 28262<br>(704) 841-2841 |
| **Seeding Contractor** | Land Mechanics Designs, Inc.<br>126 Circle G Lane<br>Willow Spring, NC 27592-9671<br>(919) 639-6132 |
| **Seed Mix Sources** | Unknown |
| **Nursery Stock Suppliers** | Arborgen aka South Carolina Super Tree Nursery<br>Cure Nursery<br>Foggy Mountain Nursery<br>Virginia Department of Forestry |
| **Monitoring Performers** | Robert J. Goldstein & Associates<br>1221 Corporation Parkway, Ste. 100<br>Raleigh NC 27610<br>Gerald Pottern, (919) 872-1174 |

**Table 4. Project Attribute Table: UT Bear Creek Weaver-McLeod (NCEEP #92347)**

| | |
|---|---|
| Project County | Chatham |
| Physiographic Region | Piedmont |
| Ecoregion | Carolina Slate Belt |
| Project River Basin | Cape Fear |
| USGS HUC for Project (14 digit) | 03030003 070050 |
| NCDWQ Sub-basin for Project | 03-06-12 |
| Within extent of EEP Watershed Plan? | Cape Fear River Basin Restoration Priorities (2009) and Upper and Middle Rocky River Watershed Plan (2005) |
| WRC Hab Class (Warm, Cool, Cold) | Warm |
| % of project easement fenced or demarcated | 100% |
| Beaver activity observed during design phase? | No |

**Restoration Component Attribute Table**

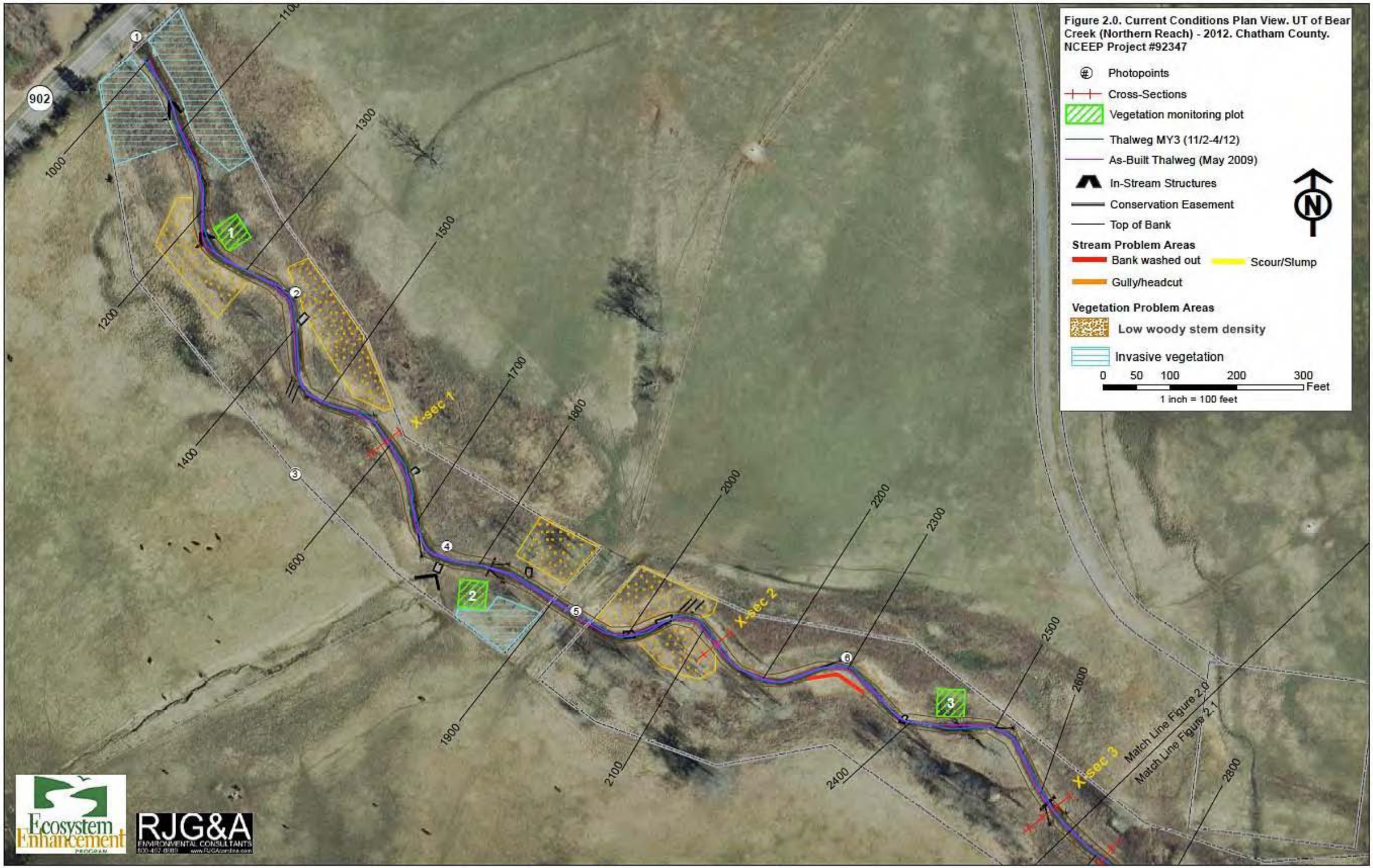
| | Bear Creek | Northern UT to Bear Cr | Southern UT to Bear Cr | Northern UT Wetland |
|---|---|---|---|---|
| Drainage area | 25.0 sq mi | 2.36 sq mi | 0.34 sq mi | NA |
| Stream order | 4th | 2nd | 1st | NA |
| Restored length (feet) | -- | 3132 | 1,745 | 0.4 acres |
| Perennial or Intermittent | Perennial | Perennial | Perennial | NA |
| Watershed type (Rural, Urban, Developing etc.) | Rural | Rural | Rural | NA |
| Watershed LULC Distribution (e.g.) | | | | |
| Residential | 3% | 7% | 6% | NA |
| Commercial | 1% | 1% | 0% | NA |
| Ag-Row Crop | 3% | 1% | 2% | NA |
| Ag-Livestock | 30% | 28% | 51% | NA |
| Forested | 52% | 54% | 35% | NA |
| Shrub/Scrub/Early Successional | 11% | 9% | 6% | NA |
| Watershed impervious cover (%) | 2% | 3% | 2% | NA |
| NCDWQ AU/Index number | 17-43-16 | 17-43-16 | 17-43-16 | NA |
| NCDWQ classification | C | C | C | NA |
| 303d listed? | No | No | No | NA |
| Upstream of a 303d listed segment? | No | No | No | NA |
| Reasons for 303d listing or stressor | NA | NA | NA | NA |
| Total acreage of easement | 15.48 | 11.75 | 4.65 | NA |
| Total vegetated acreage within the easement | 12.15 | 1.58 | 0.55 | NA |
| Total planted acreage as part of the restoration | 3.23 | 11.75 | 4.56 | 0.4 |
| Rosgen classification of pre-existing channel | NA | E4/F4 | E4/F4 | NA |

| | Bear Creek | Northern UT to Bear Cr | Southern UT to Bear Cr | Northern UT Wetland |
|---|---|---|---|---|
| | | | | |
| Rosgen Classification of As-Built | NA | C4/C5 | C4/C5 | NA |
| Valley type | VIII | VIII | VIII | NA |
| Valley slope | 0.1% | 0.4% | 1% | NA |
| Valley side slope range (e.g. 2-3.%) | 3-15% | 3-4% | 3-11% | NA |
| Valley toe slope range (e.g. 2-3.%) | 1-20% | 7-8% | 3-5% | NA |
| Cowardin classification | R3UBH | R3UBH | R3UBH | PSS1B |
| Trout waters designation | NA | NA | NA | NA |
| Species of concern, endangered etc.? (Y/N) | No | No | No | No |
| Dominant soil series and characteristics | | | | |
| Series | Georgeville | Chewacla | Cid-Lignum | Chewacla |
| Depth | 0-80 | 0-80 | 0-80 | 0-80 |
| Clay % | 5-40 | 5-40 | 10-50 | 5-40 |
| K | 0.17-0.37 | 0.24-0.37 | 0.24-.043 | 0.24-0.37 |
| T | 5 | 5 | 2 | 5 |

Use N/A for items that may not apply. Use "-" for items that are unavailable and "U" for items that are unknown.

## Appendix B. Visual Assessment Data

| | |
|---|---|
| Figure 2.0-2.2 | Current Conditions Plan View (CCPV) |
| Table 5.0 | Visual Morphological Stability Assessment |
| Table 6.0 | Vegetation Condition Assessment Table |
| e-Table | Stream Problem Areas Inventory Table |
| e-Table | Vegetation Problem Areas Inventory Table |
| Figures 3.0-3.8 | Stream Station Photos |
| e-Photos | Stream Problem Area Photos |
| Figures 4.0-4.5 | Vegetation Monitoring Plot Photos |
| e-Photos | Vegetation Problem Area Photos |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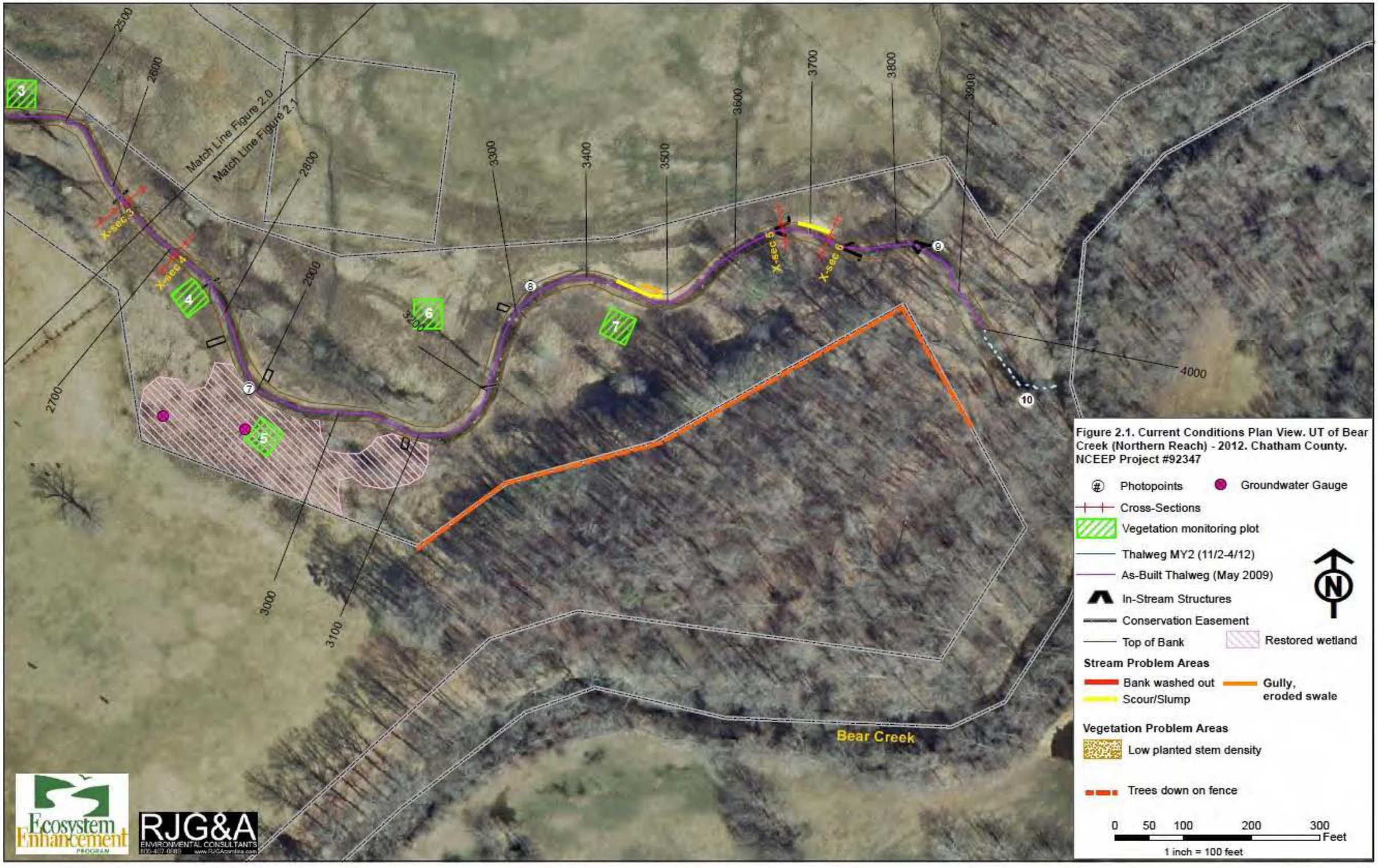
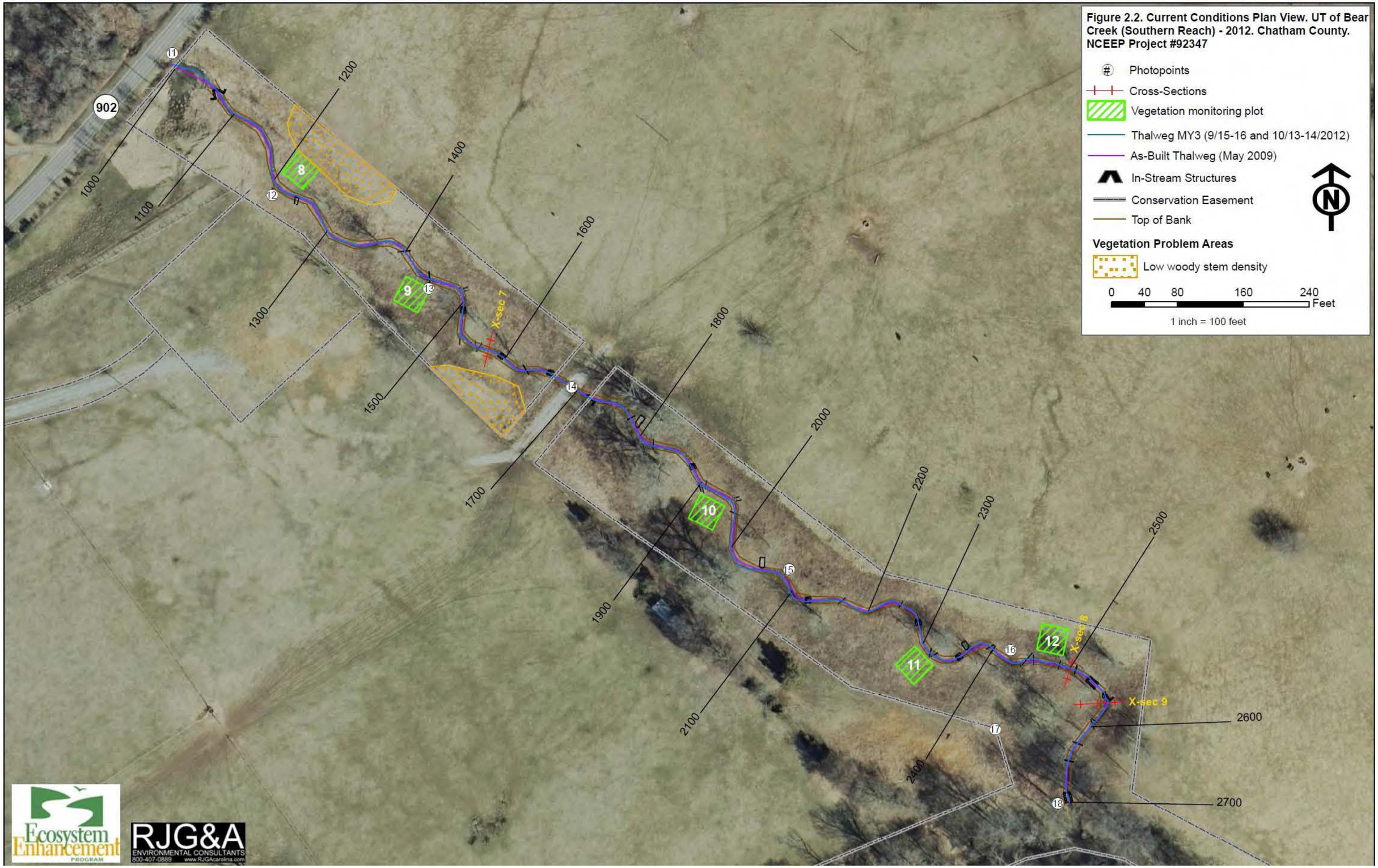
2600
2800
X-sec 1
X-sec 2
X-sec 3
Match Line Figure 2.0
Match Line Figure 2.1
Figure 2.0. Current Conditions Plan View. UT of Bear Creek (Northern Reach) - 2012. Chatham County. NCEEP Project #92347
Photopoints
Cross-Sections
Vegetation monitoring plot
Thalweg MY3 (11/2-4/12)
As-Built Thalweg (May 2009)
In-Stream Structures
Conservation Easement
Top of Bank
N
Stream Problem Areas
Bank washed out
Scour/Slump
Gully/headcut
Vegetation Problem Areas
Low woody stem density
Invasive vegetation
0 50 100 200 300
Feet
1 inch = 100 feet
Ecosystem Enhancement Program
RJG&A
ENVIRONMENTAL CONSULTANTS


Match Line Figure 2.0
Match Line Figure 2.1
X-sec 3
X-sec 4
X-sec 5
X-sec 6
Bear Creek
Figure 2.1. Current Conditions Plan View. UT of Bear Creek (Northern Reach) - 2012. Chatham County. NCEEP Project #92347
Photopoints
Groundwater Gauge
Cross-Sections
Vegetation monitoring plot
Thalweg MY2 (11/2-4/12)
As-Built Thalweg (May 2009)
In-Stream Structures
Conservation Easement
Top of Bank
Restored wetland
Stream Problem Areas
Bank washed out
Gully, eroded swale
Scour/Slump
Vegetation Problem Areas
Low planted stem density
Trees down on fence
0 50 100 200 300 Feet
1 inch = 100 feet
Ecosystem Enhancement Program
RJG&A
ENVIRONMENTAL CONSULTANTS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12
X-sec 7
X-sec 8
X-sec 9
Figure 2.2. Current Conditions Plan View. UT of Bear Creek (Southern Reach) - 2012. Chatham County. NCEEP Project #92347
Photopoints
Cross-Sections
Vegetation monitoring plot
Thalweg MY3 (9/15-16 and 10/13-14/2012)
As-Built Thalweg (May 2009)
In-Stream Structures
Conservation Easement
Top of Bank
Vegetation Problem Areas
Low woody stem density
0 40 80 160 240
Feet
1 inch = 100 feet
N
Ecosystem Enhancement PROGRAM
RJG&A
ENVIRONMENTAL CONSULTANTS
800-407-0889 www.RJGAcarolina.com

**UT Bear Creek (Weaver/McLeod) – EEP Project #92347 - 2012 (MY-3)**

**Table 5.0** **Visual Stream Morphology Stability Assessment**
**Reach ID** **Northern UT**
**Assessed Length** **2,975**

| Major Channel Category | Channel Sub-Category | Metric | Number Stable, Performing as | Total Number in As-built | Number of Unstable Segments | Amount of Unstable Footage | % Stable, Performing as Intended | Number with Stabilizing Woody | Footage with Stabilizing Woody | Adjusted % for Stabilizing Woody |
|---|---|---|---|---|---|---|---|---|---|---|
| **1. Bed** | 1. **Vertical Stability** (Riffle and Run units) | 1. Aggradation - Bar formation/growth sufficient to significantly deflect flow laterally (not to include point bars) | | | 0 | 0 | 100% | | | |
| | | 2. Degradation - Evidence of downcutting | | | 0 | 0 | 100% | | | |
| | **2. Riffle Condition** | 1. Texture/Substrate - Riffle maintains coarser substrate | 25 | 25 | | | 100% | | | |
| | **3. Meander Pool Condition** | 1. Depth Sufficient (Max Pool Depth : Mean Bankfull Depth ≥ 1.6) | 30 | 31 | | | 97% | | | |
| | | 2. Length appropriate (>30% of centerline distance between tail of upstream riffle and head of downstrem riffle) | 31 | 31 | | | 100% | | | |
| | 4.**Thalweg Position** | 1. Thalweg centering at upstream of meander bend (Run) | 31 | 31 | | | 100% | | | |
| | | 2. Thalweg centering at downstream of meander (Glide) | 31 | 31 | | | 100% | | | |
| | | | | | | | | | | |
| **2. Bank** | **1. Scoured/Eroding** | Bank lacking vegetative cover resulting simply from poor growth and/or scour and erosion | | | 4 | 150 | 95% | 0 | 0 | 95% |
| | **2. Undercut** | Banks undercut/overhanging to the extent that mass wasting appears likely. Does NOT include undercuts that are modest, appear sustainable and are providing habitat. | | | 0 | 0 | 100% | 0 | 0 | 100% |
| | **3. Mass Wasting** | Bank slumping, calving, or collapse | | | 0 | 0 | 100% | | 0 | 100% |
| | | | | **Totals** | 4 | 150 | 95% | 0 | 0 | 95% |
| **3. Engineered Structures** | **1. Overall Integrity** | Structures physically intact with no dislodged boulders or logs. | 22 | 22 | | | 100% | | | |
| | **2. Grade Control** | Grade control structures exhibiting maintenance of grade across the sill. | 10 | 10 | | | 100% | | | |
| | **2a. Piping** | Structures lacking any substantial flow underneath sills or arms. | 10 | 10 | | | 100% | | | |
| | **3. Bank Protection** | Bank erosion within the structures extent of influence does not exceed 15%. (See guidance for this table in EEP monitoring guidance document) | 22 | 22 | | | 100% | | | |
| | **4. Habitat** | Pool forming structures maintaining ~ Max Pool Depth : Mean Bankfull Depth ratio ≥ 1.6 Rootwads/logs providing some cover at base-flow. | 22 | 22 | | | 100% | | | |

**UT Bear Creek (Weaver/McLeod) – EEP Project #92347 - 2012 (MY-3)**

**Table 5.1** **Visual Stream Morphology Stability Assessment**
**Reach ID** **Southern UT**
**Assessed Length** **1,700**

| Major Channel Category | Channel Sub-Category | Metric | Number Stable, Performing as | Total Number in As-built | Number of Unstable Segments | Amount of Unstable Footage | % Stable, Performing as Intended | Number with Stabilizing Woody | Footage with Stabilizing Woody | Adjusted % for Stabilizing Woody |
|---|---|---|---|---|---|---|---|---|---|---|
| **1. Bed** | 1. **Vertical Stability** (Riffle and Run units) | 1. Aggradation - Bar formation/growth sufficient to significantly deflect flow laterally (not to include point bars) | | | 0 | 0 | 100% | | | |
| | | 2. Degradation - Evidence of downcutting | | | 0 | 0 | 100% | | | |
| | **2. Riffle Condition** | 1. Texture/Substrate - Riffle maintains coarser substrate | 27 | 27 | | | 100% | | | |
| | **3. Meander Pool Condition** | 1. Depth Sufficient (Max Pool Depth : Mean Bankfull Depth ≥ 1.6) | 48 | 48 | | | 100% | | | |
| | | 2. Length appropriate (>30% of centerline distance between tail of upstream riffle and head of downstrem riffle) | 48 | 48 | | | 100% | | | |
| | 4.**Thalweg Position** | 1. Thalweg centering at upstream of meander bend (Run) | 48 | 48 | | | 100% | | | |
| | | 2. Thalweg centering at downstream of meander (Glide) | 48 | 48 | | | 100% | | | |
| | | | | | | | | | | |
| **2. Bank** | **1. Scoured/Eroding** | Bank lacking vegetative cover resulting simply from poor growth and/or scour and erosion | | | 0 | 0 | 100% | 0 | 0 | 100% |
| | **2. Undercut** | Banks undercut/overhanging to the extent that mass wasting appears likely. Does NOT include undercuts that are modest, appear sustainable and are providing habitat. | | | 0 | 0 | 100% | 0 | 0 | 100% |
| | **3. Mass Wasting** | Bank slumping, calving, or collapse | | | 0 | 0 | 100% | | 0 | 100% |
| | | | | **Totals** | 0 | 0 | 100% | 0 | 0 | 100% |
| **3. Engineered Structures** | **1. Overall Integrity** | Structures physically intact with no dislodged boulders or logs. | 32 | 32 | | | 100% | | | |
| | **2. Grade Control** | Grade control structures exhibiting maintenance of grade across the sill. | 28 | 28 | | | 100% | | | |
| | **2a. Piping** | Structures lacking any substantial flow underneath sills or arms. | 28 | 28 | | | 100% | | | |
| | **3. Bank Protection** | Bank erosion within the structures extent of influence does not exceed 15%. (See guidance for this table in EEP monitoring guidance document) | 32 | 32 | | | 100% | | | |
| | **4. Habitat** | Pool forming structures maintaining ~ Max Pool Depth : Mean Bankfull Depth ratio ≥ 1.6 Rootwads/logs providing some cover at base-flow. | 32 | 32 | | | 100% | | | |

## Table 6 Vegetation Condition Assessment. UT Bear Creek (Weaver/McLeod) EEP# 92347- 2012 (MY-3)

**Planted Acreage[1]** **18.2**

| Vegetation Category | Definitions | Mapping Threshold | CCPV Depiction | Number of Polygons | Combined Acreage | % of Planted Acreage |
|---|---|---|---|---|---|---|
| **1. Bare Areas** | Very limited cover of both woody and herbaceous material. | 0.1 acres | Pattern and Color | 0 | 0.00 | 0.0% |
| **2. Low Stem Density Areas** | Woody stem densities clearly below target levels based on MY3, 4, or 5 stem count criteria. | 0.1 acres | orange stipules | 7 | 0.85 | 4.7% |
| | | | **Total** | 7 | 0.85 | 4.7% |
| **3. Areas of Poor Growth Rates or Vigor** | Areas with woody stems of a size class that are obviously small given the monitoring year. | none | Pattern and Color | 0 | 0.00 | 0.0% |
| | | | **Cumulative Total** | 7 | 0.85 | 4.7% |

**Easement Acreage[2]** **30.35**

| Vegetation Category | Definitions | Mapping Threshold | CCPV Depiction | Number of Polygons | Combined Acreage | % of Easement Acreage |
|---|---|---|---|---|---|---|
| **4. Invasive Areas of Concern[4]** | Areas or points (if too small to render as polygons at map scale). | 1000 SF | Pattern and Color | 3 | 0.35 | 1.2% |
| | | | | 0 | | |
| **5. Easement Encroachment Areas[3]** | Areas or points (if too small to render as polygons at map scale). | NA | Pattern and Color | 0 | 0.00 | 0.0% |

1 = Enter the planted acreage within the easement. This number is calculated as the easement acreage minus any existing mature tree stands that were not subject to supplemental planting of the understory, the channel acreage, crossings or any other elements not directly planted as part of the project effort.

2 = The acreage within the easement boundaries.

3 = Encroachment may occur within or outside of planted areas and will therefore be calculated against the overall easement acreage. In the event a polygon is cataloged into items 1, 2 or 3 in the table and is the result of encroachment, the associated acreage should be tallied in the relevant item (i.e., item 1,2 or 3) as well as a parallel tally in item 5.

4 = Invasives may occur in or out of planted areas, but still within the easement and will therefore be calculated against the overall easement acreage. Invasives of concern/interest are listed below. The list of high concern spcies are those with the potential to directly outcompete native, young, woody stems in the short-term (e.g. monitoring period or shortly thereafter) or affect the community structure for existing, more established tree/shrub stands over timeframes that are slightly longer (e.g. 1-2 decades). The low/moderate concern group are those species that generally do not have this capacity over the timeframes discussed and therefore are not expected to be mapped with regularity, but can be mapped, if in the judgement of the observer their coverage, density or distribution is suppressing the viability, density, or growth of planted woody stems. Decisions as to whether remediation will be needed are based on the integration of risk factors by EEP such as species present, their coverage, distribution relative to native biomass, and the practicality of treatment. For example, even modest amounts of Kudzu or Japanese Knotweed early in the projects history will warrant control, but potentially large coverages of Microstegium in the herb layer will not likley trigger control because of the limited capacities to impact tree/shrub layers within the timeframes discussed and the potential impacts of treating extensive amounts of ground cover. Those species with the "watch list" designator in gray shade are of interest as well, but have yet to be observed across the state with any frequency. Those in *red italics* are of particular interest given their extreme risk/threat level for mapping as points where isolated specimens are found, particularly ealry in a projects monitoring history. However, areas of discreet, dense patches will of course be mapped as polygons. The symbology scheme below was one that was found to be helpful for symbolzing invasives polygons, particulalry for situations where the conditon for an area is somewhere between isolated specimens and dense, discreet patches. In any case, the point or polygon/area feature can be symbolized to describe things like high or low concern and species can be listed as a map inset, in legend items if the number of species are limited or in the narrative section of the executive summary.

**Problem Areas Inventory Tables: UT Bear Creek (Weaver/McLeod) #92347 - MY3 (2012)**

**Stream Problem Areas - Northern UT**

| Problem | North UT Station | Suspected Cause | Photo # |
|---|---|---|---|
| Bank erosion, RB lateral widening inside bend | 2250-2320 | Coir gone, lack of woody vegetation | 7 |
| Bank scour, slumping, and gully at swale outlet, LB | 3435-3490 | Coir gone, lack of woody vegetation | 8 |
| Bank scour, LB | 3680-3705 | Coir gone, lack of woody vegetation | 9 |
| | | | |

**Stream Problem Areas - Southern UT**

| Problem | South UT Station | Suspected Cause | Photo # |
|---|---|---|---|
| No Problem along Southern UT | NA | NA | |
| | | | |

**Vegetation Problem Areas - Northern UT**

| Problem | North UT Station | Suspected Cause | Photo # |
|---|---|---|---|
| *Ligustrum sinense* invading upper reach (RB+LB) | 1000-1100 RB 1000-1170 LB | *Ligustrum* abundant in roadside scrub along NC-902 | |
| *Murdannia keisak* dense in many riffles and run/pool edges | 1200 & scattererd throughout | *Murdannia* abundant in channel upstream of NC-902 | 10 |
| Low woody stem density and/or poor vigor (RB) | 1180-1310 | Soil dense/clayey, poor root growth | 1 |
| Low woody stem density and/or poor vigor (LB) | 1350-1550 | Soil dense/clayey, poor root growth | 2 |
| Low woody stem density and/or poor vigor (LB) | 1820-1900 | Soil dense/clayey, Fescue dominant | 3 |
| Abundant *Ligustrum sinense* invading (RB) | 1830-1900 | Stump/root sprouts and new seedlings | |
| Low woody stem density and/or poor vigor (LB) | 1950-2100 | Soil dense/clayey, poor root growth | 4 |
| Low woody stem density and/or poor vigor (RB) | 2020-2150 | Soil dense/clayey, poor root growth | 5 |
| Broken fence wires (RB) in forest near Bear Creek confluence | 3100-4000 | Large trees fallen on fence in Bear Creek riparian buffer | |

**Vegetation Problem Areas - Southern UT**

| Problem | South UT Station | Suspected Cause | Photo # |
|---|---|---|---|
| Low woody stem density and/or poor vigor (RB) | 1190-1290 RB | Soil dense/clayey, poor root growth | 11 |
| Low woody stem density and/or poor vigor (RB) | 1160-1340 LB | Soil dense/clayey, poor root growth | 12 |
| Low woody stem density and/or poor vigor (RB) | 1540-1650 RB | Soil dense/clayey, poor root growth | 13 |
| | | | |

**Figure 3.0 Stream Photo-Point Stations 1 and 2 - Northern UT Bear Creek Project #92347- MY3 (2012)**

Photo-Point 1: Northern UT facing Downstream from NC 902 (Sta. 10+00)

3/25/2010

10/29/2012

Photo-Point 2: Northern UT facing Downstream (Sta. 13+60)

3/24/2010

10/27/2012

**Figure 3.1. Stream Photo-Point Stations 3 and 4 - Northern UT Bear Creek Project #92347- MY3 (2012)**

Photo-Point 3: Northern UT facing Upstream from easement fence corner (Sta. 15+30)

3/24/2010

9/213/2012

Photo-Point 4: Northern UT facing South across stream toward floodplain swale outlet (Sta. 17+55)

3/24/2010

9/13/2012

**Figure 3.2. Stream Photo-Point Stations 5 and 6 - Northern UT Bear Creek Project #92347- MY3 (2012)**

Photo-Point 5: Northern UT facing Downstream at Cattle Crossing (Sta. 19+30)

3/24/2010

10/27/2012

Photo-Point 6: Northern UT facing Upstream (Sta. 22+95)

3/24/2010

10/27/2012

**Figure 3.3. Stream Photo-Point Stations 7 and 8 - Northern UT Bear Creek Project #92347- MY3 (2012)**

Photo-Point 7: Northern UT facing Downstream (Sta. 28+95)

3/24/2010

10/29/2012

Photo-Point 8: Northern UT facing Upstream (Sta. 33+30)

3/24/2010

10/29/2012

**Figure 3.4 Stream Photo-Point Stations 9 and 10 - Northern UT Bear Creek Project #92347- MY3 (2012)**

Photo-Point 9: Northern UT facing Upstream (Sta. 38+50)

3/24/2010

10/29/2012

Photo-Point 10: Northern UT facing Upstream just above Bear Creek confluence (Sta. 39+75)

3/24/2010

9/27/2012

**Figure 3.5 Stream Photo-Point Stations 11 and 12 - Southern UT Bear Creek Project #92347- MY3 (2012)**

Photo-Point 11: Southern UT facing Downstream from NC 902 (Sta. 10+00)

3/25/2010

10/13/2012

Photo-Point 12: Southern UT facing Downstream (Sta. 12+10)

3/25/2010

10/13/2012

**Figure 3.6 Stream Photo-Point Stations 13 and 14 - Southern UT Bear Creek Project #92347- MY3 (2012)**

Photo-Point 13: Southern UT facing Upstream (Sta. 14+45)

3/25/2010

10/13/2012

Photo-Point 14: Southern UT facing Downstream (Sta. 16+90)

3/25/2010

10/13/2012

**Figure 3.7 Stream Photo-Point Stations 15 and 16 - Southern UT Bear Creek Project #92347- MY3 (2012)**

Photo-Point 15: Southern UT facing Downstream (Sta. 20+80)

3/25/2010

10/29/2012

Photo-Point 16: Southern UT facing Downstream (Sta. 24+20)

3/25/2010

9/12/2012

**Figure 3.8 Stream Photo-Point Stations 17 and 18 - Southern UT Bear Creek Project #92347- MY3 (2012)**

Photo-Point 17: Southern UT facing Upstream from easement fence corner (Sta. 24+25)

3/25/2010

9/12/2012

Photo-Point 18: Southern UT facing Upstream from Bear Creek confluence (Sta. 27+00)

3/25/2010

9/12/2012

**Problem Area Photos - Northern UT Bear Creek (Weaver/McLeod) #92347 - MY3 (2012)**

1. N-sta-1220.RB.face dnstr.Low Woody Stem Density

2. N-sta-1260.LB. face dnstr.Low Woody Stem Density

3. N-sta-1850.LB.face upstr.Low Woody Stem Dens, Fescue

4. N-sta-2040.LB.face upstr.Low Woody Stem Density

5. N-sta-2050.RB.face dnstr.Low Woody Stem Density

6. N-sta-2080.RB Erosion Healing, Salix (Remove from CCPV)

7. N-sta-2300.RB Erosion.Herb Cover but No Woody

8. N-sta-3470.LB Erosion.Thin Herb Cover, No Woody

9. N-sta-3700.LB Erosion.Thin Herb Cover, Min Woody

10. N-sta-1200.Murdannia keisak invasive aquatic weed

**Problem Area Photos - Southern UT Bear Creek (Weaver/McLeod) #92347 - MY3 (2012)**

11. S-sta-1230.RB.face dnstr.Low Woody Stem Density

12. S-sta-1280.LB.face upstr.Low Woody Dens, Fescue

13. S-sta-1580.RB.face dnstr.Low Woody Stem Density

**Figure 4.0 Vegetation Monitoring Plot Photos - UT Bear Creek Stream Restoration - MY3 (2012) - Project #92347**

VP 1 (Northern UT Sta. 12+20)

4/14/2010

10/27/2012

VP 2 (Northern UT Sta. 18+15)

4/14/2010

10/27/2012

**Figure 4.1 Vegetation Monitoring Plot Photos - UT Bear Creek Stream Restoration - MY3 (2012) - Project #92347**

VP 3 (Northern UT Sta. 24+35)

4/14/2010

10/27/2012

VP 4 (Northern UT Sta. 27+75)

4/14/2010

10/27/2012

**Figure 4.2 Vegetation Monitoring Plot Photos - UT Bear Creek Stream Restoration - MY3 (2012) - Project #92347**

VP 5 (Northern UT Sta. 29+50)

4/14/2010

10/27/2012

VP 6 (Northern UT Sta. 31+10)

4/14/2010

10/27/2012

**Figure 4.3 Vegetation Monitoring Plot Photos - UT Bear Creek Stream Restoration - MY3 (2012) - Project #92347**

VP 7 (Northern UT Sta. 33+75)

4/14/2010

10/29/2012

VP 8 (Southern UT Sta. 12+00)

4/15/2010

9/15/2012

**Figure 4.4 Vegetation Monitoring Plot Photos - UT Bear Creek Stream Restoration - MY3 (2012) - Project #92347**

VP 9 (Southern UT Sta. 14+45)

4/15/2010

10/13/2012

VP 10 (Southern UT Sta. 19+35)

4/15/2010

10/29/2012

**Figure 4.5 Vegetation Monitoring Plot Photos - UT Bear Creek Stream Restoration - MY3 (2012) - Project #92347**

VP 11 (Southern UT Sta. 23+25)

4/15/2010

10/29/2012

VP 12 (Southern UT Sta. 24+55)

4/15/2010

9/12/2012

## Appendix C. Vegetation Plot Data

**Table 7a. Vegetation Plot Mitigation Success Summary**

| UT to Bear Creek (Weaver/McLeod) #92347 | | | | | | | |
|---|---|---|---|---|---|---|---|
| Year 3 (12-Sep-2012 to 27-Dec-2012) -- Vegetation Plot Summary Information | | | | | | | |
| Plot # | Riparian Buffer Stems[1] | Stream/ Wetland Stems[2] | Live Stakes | Invasives | Volunteers[3] | Total[4] | Unknown Growth Form |
| **1** | 5 | 5 | 1 | 0 | 60 | **66** | 0 |
| **2** | 4 | 4 | 0 | 4 | 48 | **52** | 0 |
| **3** | 11 | 11 | 0 | 15 | 49 | **60** | 0 |
| **4** | 6 | 6 | 0 | 4 | 47 | **53** | 0 |
| **5** | 21 | 32 | 0 | 0 | 78 | **110** | 0 |
| **6** | 10 | 10 | 0 | 0 | 53 | **63** | 0 |
| **7** | 8 | 8 | 0 | 0 | 44 | **52** | 0 |
| **8** | 9 | 9 | 0 | 0 | 10 | **19** | 0 |
| **9** | 4 | 4 | 0 | 0 | 28 | **32** | 0 |
| **10** | 8 | 9 | 0 | 0 | 25 | **34** | 0 |
| **11** | 10 | 12 | 0 | 0 | 38 | **50** | 0 |
| **12** | 14 | 15 | 0 | 0 | 73 | **88** | 0 |

## Wetland/Stream Vegetation Totals (per acre)

| Plot # | Stream/ Wetland Stems[2] | Volunteers[3] | Total[4] | Success Criteria Met? |
|---|---|---|---|---|
| **1** | 202 | 2428 | 2671 | No |
| **2** | 162 | 1942 | 2104 | No |
| **3** | 445 | 1983 | 2428 | Yes |
| **4** | 243 | 1902 | 2145 | No |
| **5** | 1295 | 3157 | 4452 | Yes |
| **6** | 405 | 2145 | 2550 | Yes |
| **7** | 324 | 1781 | 2104 | Yes, barely |
| **8** | 364 | 405 | 769 | Yes |
| **9** | 162 | 1133 | 1295 | No |
| **10** | 364 | 1012 | 1376 | Yes |
| **11** | 486 | 1538 | 2023 | Yes |
| **12** | 607 | 2954 | 3561 | Yes |
| **Project Avg** | **422** | **1865** | **2212** | **Yes** |

**Table 7b. Vegetation Plot Mitigation Success Summary**

## Riparian Buffer Vegetation Totals (per acre)

| Plot # | Riparian Buffer Stems[1] | Success Criteria Met? |
|---|---|---|
| **1** | 202 | No |
| **2** | 162 | No |
| **3** | 445 | Yes |
| **4** | 243 | No |
| **5** | 850 | Yes |
| **6** | 405 | Yes |
| **7** | 324 | Yes, barely |
| **8** | 364 | Yes |
| **9** | 162 | No |
| **10** | 324 | Yes, barely |
| **11** | 405 | Yes |
| **12** | 567 | Yes |
| **Project Avg** | **371** | **Yes** |

| **Stem Class** | **characteristics** |
|---|---|
| [1]Buffer Stems | Native planted hardwood trees. NOT including shrubs, pines, vines, live-stakes. |
| [2]Stream/Wetland Stems | Native planted hardwood trees + shrubs. NOT including live-stakes or vines |
| [3]Volunteer Stems | Volunteer native woody trees + shrubs, not planted. NOT including vines or exotics. |
| [4]Total Stems | Planted + Volunteer native woody trees + shrubs + live stakes. NOT vines or exotics. |

**Color for Density success criteria**

Exceeds requirements by 10%

Exceeds requirements, but by less than 10%

Fails to meet requirements, by less than 10%

Fails to meet requirements by more than 10%

**Table 8. Vegetation Metadata**
**UT Bear Creek (Weaver/McLeod) EEP #92347**

| | |
|---|---|
| **Report Prepared By** | Sean Doig |
| **Date Prepared** | 11/25/2012 22:02 |
| | |
| | |
| **database name** | UTBear_2012.mdb |
| **database location** | D:\Sean\EEP\Bear Creek\MY2_2012 |
| **computer name** | UNC-L3AM972 |
| **file size** | 36683776 |

**DESCRIPTION OF WORKSHEETS IN THIS DOCUMENT---**

| | |
|---|---|
| **Metadata** | Description of database file, the report worksheets, and a summary of project(s) and project data. |
| **Proj, planted** | Each project is listed with its PLANTED stems per acre, for each year. This excludes live stakes. |
| **Proj, total stems** | Each project is listed with its TOTAL stems per acre, for each year. This includes live stakes, all planted stems, and all natural/volunteer stems. |
| **Plots** | List of plots surveyed with location and summary data (live stems, dead stems, missing, etc.). |
| **Vigor** | Frequency distribution of vigor classes for stems for all plots. |
| **Vigor by Spp** | Frequency distribution of vigor classes listed by species. |
| **Damage** | List of most frequent damage classes with number of occurrences and percent of total stems impacted by each. |
| **Damage by Spp** | Damage values tallied by type for each species. |
| **Damage by Plot** | Damage values tallied by type for each plot. |
| **Planted Stems by Plot and Spp** | A matrix of the count of PLANTED living stems of each species for each plot; dead and missing stems are excluded. |
| **ALL Stems by Plot and spp** | A matrix of the count of total living stems of each species (planted and natural volunteers combined) for each plot; dead and missing stems are excluded. |

**PROJECT SUMMARY---**

| | |
|---|---|
| **Project Code** | 92347 |
| **project Name** | UT to Bear Creek |
| **Description** | Northern and Southern Uts to Bear Creek just east of NC 902. |
| **River Basin** | Cape Fear |
| **length(ft)** | 4877 |
| **stream-to-edge width (ft)** | 50 (average) |
| **area (sq m)** | 45304.23 |
| **Required Plots (calculated)** | 12 |
| **Sampled Plots** | 12 |

**Table 9. CVS Stem Counts, Total and Planted Stems by Plot and Species**
**EEP Project Code 92347. Project Name: UT to Bear Creek**

| | | | Current Plot Data (MY3 2012) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | E92347-01-0001 | | | E92347-01-0002 | | | E92347-01-0003 | | | E92347-01-0004 | | | E92347-01-0005 | | | E92347-01-0006 | | |
| Scientific Name | Common Name | Species Type | PnoLS | P-all | T | PnoLS | P-all | T | PnoLS | P-all | T | PnoLS | P-all | T | PnoLS | P-all | T | PnoLS | P-all | T |
| Acer rubrum | red maple | Tree | | | | | | | | | | | | | | | 1 | | | |
| Aesculus sylvatica | painted buckeye | Shrub | | | | | | | | | | | | | | | | | | |
| Alnus serrulata | hazel alder | Shrub | | | | | | | | | | | | | | | | | | |
| Baccharis halimifolia | eastern baccharis | Shrub | | | 30 | | | 3 | | | 1 | | | 3 | | | | | | |
| Betula nigra | river birch | Tree | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | | | |
| Celtis laevigata | sugarberry | Tree | | | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | | 1 | 1 | 1 |
| Cephalanthus occidentalis | common buttonbush | Shrub | | | | | | | | | | | | | 11 | 11 | 11 | | | |
| Diospyros virginiana | common persimmon | Tree | | | | | | | 1 | 1 | 1 | | | | | | | 1 | 1 | 1 |
| Fraxinus pennsylvanica | green ash | Tree | | | 23 | 2 | 2 | 42 | 3 | 3 | 35 | 1 | 1 | 41 | 18 | 18 | 48 | 2 | 2 | 48 |
| Gleditsia triacanthos | honeylocust | Tree | | | | | | | | | | | | | | | 1 | | | |
| Juglans nigra | black walnut | Tree | | | | | | | | | | | | | | | | | | |
| Ligustrum sinense | Chinese privet | Exotic | | | | | | 4 | | | 15 | | | 4 | | | | | | |
| Liquidambar styraciflua | sweetgum | Tree | | | | | | | | | | | | | | | 14 | | | 3 |
| Nyssa | tupelo | Tree | | | | | | | | | | | | | | | | | | |
| Nyssa sylvatica | blackgum | Tree | | | | | | | 1 | 1 | 1 | 1 | 1 | 1 | | | | | | |
| Platanus occidentalis | American sycamore | Tree | 1 | 1 | 1 | | | | | | | 1 | 1 | 1 | 2 | 2 | 2 | 6 | 6 | 6 |
| Quercus falcata | southern red oak | Tree | | | | | | | | | | | | | | | | | | |
| Quercus lyrata | overcup oak | Tree | 1 | 1 | 1 | | | | | | | | | | | | | | | |
| Quercus michauxii | swamp chestnut oak | Tree | 1 | 1 | 1 | | | | 2 | 2 | 2 | 1 | 1 | 1 | | | | | | |
| Quercus phellos | willow oak | Tree | | | | | | | 1 | 1 | 1 | | | | | | | | | |
| Quercus velutina | black oak | Tree | | | | | | | | | | | | | | | | | | |
| Salix | willow | Shrub or Tree | | | 4 | | | | | | | | | | | | | | | |
| Salix nigra | black willow | Tree | 1 | 2 | 2 | | | | | | 1 | | | | | | | | | |
| Symphoricarpos orbiculatus | coralberry | Shrub | | | 3 | | | 1 | | | | | | | | | | | | 2 |
| Ulmus | elm | Tree | | | | | | | | | | | | | | | | | | |
| Ulmus alata | winged elm | Tree | | | | | | | | | | | | | | | 6 | | | 2 |
| Ulmus americana | American elm | Tree | | | | | | | | | | | | | | | 26 | | | |
| | | **Stem count** | 5 | 6 | 66 | 4 | 4 | 52 | 11 | 11 | 60 | 6 | 6 | 53 | 32 | 32 | 110 | 10 | 10 | 63 |
| | | **size (ares)** | 1 | | | 1 | | | 1 | | | 1 | | | 1 | | | 1 | | |
| | | **size (ACRES)** | 0.02 | | | 0.02 | | | 0.02 | | | 0.02 | | | 0.02 | | | 0.02 | | |
| | | **Species count** | 5 | 5 | 9 | 3 | 3 | 6 | 7 | 7 | 10 | 6 | 6 | 8 | 4 | 4 | 9 | 4 | 4 | 7 |
| | | **Stems per ACRE** | 202.3 | 242.8 | 2671 | 161.9 | 161.9 | 2104 | 445.2 | 445.2 | 2428 | 242.8 | 242.8 | 2145 | 1295 | 1295 | 4452 | 404.7 | 404.7 | 2550 |

**Color for Density success criteria**

Exceeds requirements by 10%

Exceeds requirements, but by less than 10%

Fails to meet requirements, by less than 10%

Fails to meet requirements by more than 10%

| | Current Plot Data (MY3 2012) | | | | | | | | | | | | | | | | | | Annual Means | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | E92347-01-0007 | | | E92347-01-0008 | | | E92347-01-0009 | | | E92347-01-0010 | | | E92347-01-0011 | | | E92347-01-0012 | | | MY3 (2012) | | | MY2 (2011) | | | MY1 (2010) | | |
| Sci Name | PnoLS | P-all | T | PnoLS | P-all | T | PnoLS | P-all | T | PnoLS | P-all | T | PnoLS | P-all | T | PnoLS | P-all | T | PnoLS | P-all | T | PnoLS | P-all | T | PnoLS | P-all | T |
| Ace rub | | | 6 | | | | | | | | | | | | | | | | | | 7 | | | 1 | | | |
| Aes syl | | | | | | | | | | | | | | | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | |
| Aln ser | | | | | | | | | | 1 | 1 | 1 | 2 | 2 | 2 | | | | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Bac hal | | | | | | | | | 1 | | | | | | | | | | | | 38 | | | 18 | | | |
| Bet nig | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 17 | 17 | 17 | 17 | 17 | 17 | 20 | 20 | 20 |
| Cel lae | | | | 1 | 1 | 1 | | | | | | | | | | | | | 5 | 5 | 5 | 5 | 5 | 6 | 2 | 2 | 2 |
| Cep occ | | | | | | | | | | | | | | | | | | | 11 | 11 | 11 | 11 | 11 | 11 | 12 | 12 | 12 |
| Dio vir | 1 | 1 | 1 | 1 | 1 | 1 | | | | | | | 1 | 1 | 1 | 1 | 1 | 1 | 6 | 6 | 6 | 6 | 6 | 7 | | | |
| Fra pen | 1 | 1 | 11 | 2 | 2 | 10 | 1 | 1 | 21 | 3 | 3 | 24 | | | 26 | 8 | 8 | 59 | 41 | 41 | 388 | 41 | 41 | 506 | 40 | 40 | 40 |
| Gle tri | | | | | | | | | | | | | | | | | | | | | 1 | | | 5 | 2 | 2 | 2 |
| Jug nig | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | |
| Lig sin X | | | | | | | | | | | | | | | | | | | | | 23 | | | 7 | | | |
| Liq sty | | | 16 | | | | | | 2 | | | | | | | | | | | | 35 | | | 5 | | | |
| Nyssa | | | | | | | | | | | | | | | | | | | | | | | | | 2 | 2 | 2 |
| Nys syl | | | | | | | | | | | | | | | | | | | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Pla occ | 1 | 1 | 1 | | | | | | | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 16 | 16 | 16 | 16 | 16 | 16 | 15 | 15 | 15 |
| Que fal | | | | | | | | | | | | | | | | | | | | | | 1 | 1 | 1 | 1 | 1 | 1 |
| Que lyr | | | | | | | | | | | | | | | | | | | 1 | 1 | 1 | 1 | 1 | 1 | | | |
| Que mic | 1 | 1 | 1 | 1 | 1 | 1 | | | | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 10 | 10 | 10 | 9 | 9 | 9 | 8 | 8 | 8 |
| Que phe | 2 | 2 | 2 | | | | | | | | | | 5 | 5 | 5 | 2 | 2 | 2 | 10 | 10 | 10 | 10 | 10 | 11 | 9 | 9 | 9 |
| Que vel | | | | | | | | | | | | | | | | | | | | | | 2 | 2 | 2 | | | |
| Salix | | | | | | | | | | | | | | | | | | | | | 4 | | | | | | |
| Sal nig | | | | | | | | | | | | | | | | | | | 1 | 2 | 3 | 1 | 2 | 6 | 1 | 2 | 2 |
| Sym orb | | | | | | | | | 2 | | | | | | 9 | | | 22 | | | 39 | | | 34 | 1 | 1 | 1 |
| Ulmus | | | | | | | | | | | | | | | | | | | | | | | | 19 | | | |
| Ulm ala | | | 12 | 1 | 1 | 1 | | | | | | | | | | | | | 1 | 1 | 21 | | | 5 | 4 | 4 | 4 |
| Ulm ame | | | | | | 2 | | | 3 | | | 4 | | | 3 | | | | | | 38 | | | | | | |
| | 8 | 8 | 52 | 9 | 9 | 19 | 4 | 4 | 32 | 9 | 9 | 34 | 12 | 12 | 50 | 15 | 15 | 88 | 125 | 126 | 679 | 126 | 127 | 694 | 122 | 123 | 123 |
| | 1 | | | 1 | | | 1 | | | 1 | | | 1 | | | 1 | | | 12 | | | 12 | | | 12 | | |
| | 0.02 | | | 0.02 | | | 0.02 | | | 0.02 | | | 0.02 | | | 0.02 | | | 0.30 | | | 0.30 | | | 0.30 | | |
| | 6 | 6 | 9 | 6 | 6 | 7 | 2 | 2 | 6 | 5 | 5 | 6 | 6 | 6 | 9 | 7 | 7 | 8 | 14 | 14 | 22 | 15 | 15 | 24 | 15 | 15 | 15 |
| | 323.7 | 323.7 | 2104 | 364.2 | 364.2 | 768.9 | 161.9 | 161.9 | 1295 | 364.2 | 364.2 | 1376 | 485.6 | 485.6 | 2023 | 607 | 607 | 3561 | 421.5 | 424.9 | 2290 | 424.9 | 428.3 | 2340 | 411.4 | 414.8 | 414.8 |

**Color for Density success criteria**

Exceeds requirements by 10%

Exceeds requirements, but by less than 10%

Fails to meet requirements, by less than 10%

Fails to meet requirements by more than 10%

Bear Creek

**Plot E92347-01-0001** — Please fill in any missing data and fix incorrect data. — **Vegetation Monitoring Data (VMD) Datasheet**

| | | | |
|---|---|---|---|
| VMD Year (1-5): 3 | Date: 26/OCT/12 - / / | Party: GBP | Role: |
| Taxonomic Standard: | | | |
| Taxonomic Standard DATE: | | | |
| Latitude or UTM-N: (dec.deg. or m) | 1883879 | Datum: NAD83/W | |
| Longitude or UTM-E: | 677625 | UTM Zone: ne | |
| Coordinate Accuracy (m): | 1 | X-Axis bearing (deg): 150 | |
| Plot Dimensions: X: | 10 | Y: 10 | ☐ Plot has reverse orientation for X and Y axis (Y is 90 degrees to the right of X |

Notes on plot:

| ID | Species Name | Map char | Source* | X 0.1m | Y 0.1m | Sep 2011 Data ddh 1 mm | Sep 2011 Data Height 1cm* | Sep 2011 Data DBH 1 cm | Notes* | THIS YEAR'S DATA ddh 1mm | Height 1cm* | DBH 1 cm | Re-sprout | Vigor* | Damage* | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 987 | Betula nigra | a | R | 0.1 | 0.2 | 11 | 52.0 | | ☑ | 14 | 98 | — | ☐ | 2 | | |
| 988 | Platanus occidentalis | e | R | 6.9 | 4.1 | 16 | 145.0 | 0.4 | ☐ | — | 220 | 1.0 | ☐ | 3 | | |
| 989 | Quercus velutina | f | R | 8.3 | 0.4 | 3 | 29.0 | | ☐ | | | | ☐ | M | gone | |
| 1280 | Salix nigra | g | R | 9.5 | 7.0 | 32 | 175.0 | 0.5 | ☐ | — | 250 | 1.2 | ☐ | 4 | | |
| 1281 | Salix nigra | b | L | 0.1 | 1.5 | | 196.0 | 0.4 | ☐ | n/a | 215 | 0.9 | ☐ | 3 | | |
| 384 | Quercus michauxii | c | R | 3.0 | 3.8 | 9 | 58.0 | | ☐ | 16 | 91 | — | ☐ | 3 | | |
| 385 | Quercus lyrata | d | R | 4.4 | 6.4 | 8 | 90.0 | | ☐ | — | 172 | 0.4 | ☐ | 3 | | |

*# stems:* 7

New Stems, not included last year, but are obviously planted. If more space needed, use blank PWS (Planted Woody Stems) Form:

| Species Name | Source* | X (m) | Y (m) | ddh 1 mm | Height 1 cm* | DBH 1 cm | Vigor* | Damage* | Notes |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

***Notes by ID:** 987-at 0,0 corner

## Natural Woody Stems - tallied by species

Explanation of cut-off & subsampling**:

**Height Cut-Off** (All stems shorter than this are ignored. If >10cm, explain why to the right.): ☐ 10cm ☐ 50cm ☐ 100cm ☐ 137cm

| Species Name | ☑ c | Seedlings — Height Classes: Sub-Seed | 10 cm-50 cm | 50 cm-100 cm | 100 cm-137 cm | Saplings — DBH: Sub-Sapl | 0-1 cm | 1-2.5 | Trees — DBH: 2.5- | 5- | =10 (write DBH) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Baccharis | | ___ | .. | L | ☒ | ___ | ☒ | | | | |
| Frax pen | | ___ | L | ☒ | L | ___ | . | | | | |
| sympher | | ___ | .. | . | | ___ | | | | | |
| Salix | | ___ | | | . | ___ | . | | | | |
| | | ___ | | | | ___ | | | | | |
| | | ___ | | | | ___ | | | | | |
| | | ___ | | | | ___ | | | | | |

**Required if cut-off >10cm or subsample ? 100%. ●1 ●2 ●3 ●4 ●5 ●6 ●7 ●8 ●9 ●10 Form WS2, ver 9.1

*SOURCE: Tr=Transplant, L=Live stake, B=Ball and burlap, P=Potted, Tu=Tubling, R=bare Root, M=Mechanically, U=Unknown



*VIGOR: 4=excellent, 3=good, 2=fair, 1=unlikely to survive year, 0=dead, M=missing.

*DAMAGE: REMoval, CUT, MOWing, BEAVer, DEER, RODents, INSects, GAME, LIVESTock, Other/Unknown ANIMal, Human TRAMpled, Site Too WET, Site Too DRY, FLOOD, DROUght, STORM, HURRicane, DISeased, VINE Strangulation, UNKNown, specify other.

*HEIGHT PRECISION drops to 10cm if >2.5m and 50cm if >4m.

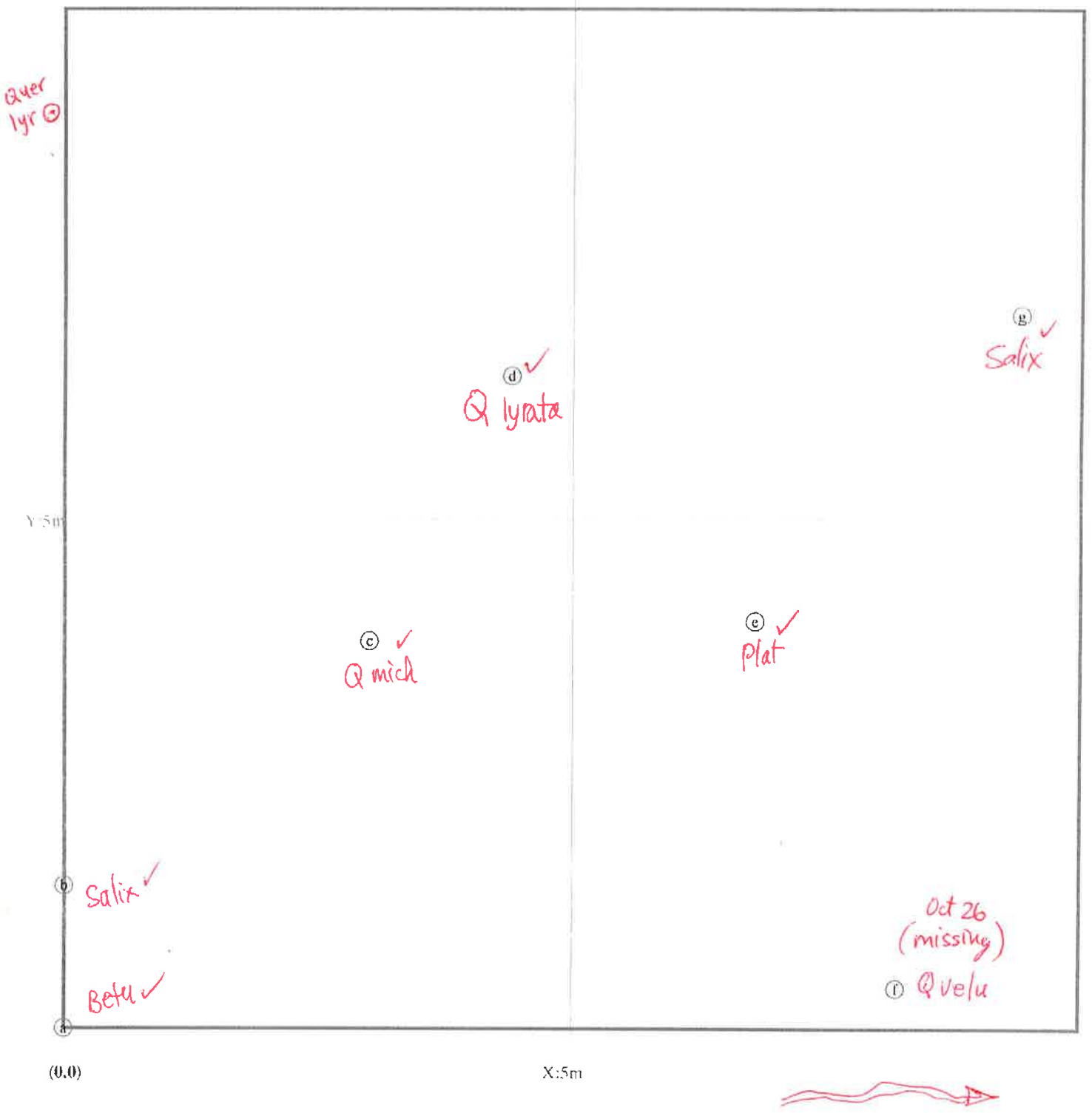
**Map of stems on plot E92347-01-0001**

Oct 26, 2012

X-axis: 150°

N

*# stems: 7*
*map size: LARGE*




*SOURCE: Tr=Transplant, L=Live stake, B=Ball and burlap, P=Potted, Tu=Tubling, R=bare Root, M=Mechanically, U=Unknown



*VIGOR: 4=excellent, 3=good, 2=fair, 1=unlikely to survive year, 0=dead, M=missing.

*DAMAGE: REMoval, CUT, MOWing, BEAVer, DEER, RODents, INSects, GAME, LIVESTock, Other/Unknown ANIMal, Human TRAMpled, Site Too WET, Site Too DRY, FLOOD, DROUght, STORM, HURRicane, DISeased, VINE Strangulation, UNKNown, specify other.

*HEIGHT PRECISION drops to 10cm if >2.5m and 50cm if >4m.

*Printed in the CVS-EEP Entry Tool ver. 2.2.7*

**Plot E92347-01-0002** — Please fill in any missing data and fix incorrect data. — **Vegetation Monitoring Data (VMD) Datasheet**

VMD Year (1-5): 3 | Date: 26 / OCT / 12 - / /

Party: GBP | Role:

Taxonomic Standard:

Taxonomic Standard DATE:

Latitude or UTM-N: (dec.deg. or m) 1884205 | Datum: NAD83/WGS84

Longitude or UTM-E: 677197 | UTM Zone: nc

Coordinate Accuracy (m): 1 | X-Axis bearing (deg): 275

Plot Dimensions: X: 10 | Y: 10 | ☐ Plot has reverse orientation for X and Y axis (Y is 90 degrees to the right of X

Notes on plot:

| ID | Species Name | Map char | Source* | X 0.1m | Y 0.1m | Sep 2011 Data ddh 1 mm | Sep 2011 Data Height 1cm* | Sep 2011 Data DBH 1 cm | Notes* | THIS YEAR'S DATA ddh 1mm | Height 1cm* | DBH 1 cm | Re-sprout | Vigor* | Damage* | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 996 | Betula nigra | e | R | 9.9 | 0.1 | 6 | 43.0 | | ☐ | 8 | 55 | — | ☐ | 2 | | |
| 998 | Fraxinus pennsylvanica | b | R | 2.0 | 4.6 | 4 | 42.0 | | ☐ | 4 | 36 | — | ☐ | 1 | UNK | leader dead |
| 1001 | Fraxinus pennsylvanica | a | R | 1.0 | 9.5 | 6 | 58.0 | | ☐ | 10 | 66 | — | ☐ | 2 | | [redacted] |
| 1002 | Quercus falcata | d | R | 5.0 | 4.0 | 4 | 33.0 | | ☐ | — | — | — | ☐ | 0 | UNK | DEAD |
| 1297 | Celtis laevigata | c | R | 2.5 | 0.1 | 6 | 65.0 | | ☐ | 8 | 65 | — | ☐ | 2 | Deer | tiny leaves |

*# stems:* 5 — New Stems, not included last year, but are obviously planted. If more space needed, use blank PWS (Planted Woody Stems) Form:

| Species Name | Source* | X (m) | Y (m) | ddh 1 mm | Height 1 cm* | DBH 1 cm | Vigor* | Damage* | Notes |
|---|---|---|---|---|---|---|---|---|---|
| Gleditz triacan | ? | 4.0 | 7.5 | — | 205 | 1.1 | 3 | | Vol or Planted ? |
| Gleditz triacan | ? | 2.0 | 7.5 | 9 | 122 | — | 2 | | Vol or Planted ? |
| | | | | | | | | | |

## Natural Woody Stems - tallied by species

Explanation of cut-off & subsampling**:

**Height Cut-Off** (All stems shorter than this are ignored. If >10cm, explain why to the right.): ☐ 10cm ☐ 50cm ☐ 100cm ☐ 137cm

| Species Name | ☑ c | Seedlings — Height Classes: Sub-Seed | 10 cm-50 cm | 50 cm-100 cm | 100 cm-137 cm | Saplings — DBH: Sub-Sapl | 0-1 cm | 1-2.5 | Trees — DBH: 2.5- | 5- | =10 (write DBH) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Frax pennsy | | — | ⊠ : : | ⊠ ⊠ : . | : . | — | | | | | |
| Ligus sinen | | — | : : | . | | — | | | | | |
| Symphor orbic | | — | | . | | — | | | | | |
| Bacchanis | | — | | : | . | — | | | | | |
| | | — | | | | — | | | | | |
| | | — | | | | — | | | | | |
| | | — | | | | — | | | | | |

**Required if cut-off >10cm or subsample ? 100%. ●1 ●2 ●3 ●4 ●5 ●6 ●7 ●8 ●9 ⊠10 Form WS2, ver 9.1

Dense Solidago, Eupator, DogF

*SOURCE: Tr=Transplant, L=Live stake, B=Ball and burlap, P=Potted, Tu=Tubling, R=bare Root, M=Mechanically, U=Unknown



*VIGOR: 4=excellent, 3=good, 2=fair, 1=unlikely to survive year, 0=dead, M=missing.

*DAMAGE: REMoval, CUT, MOWing, BEAVer, DEER, RODents, INSects, GAME, LIVESTock, Other/Unknown ANIMal, Human TRAMpled, Site Too WET, Site Too DRY, FLOOD, DROUght, STORM, HURRicane, DISeased, VINE Strangulation, UNKNown, specify other.

*HEIGHT PRECISION drops to 10cm if >2.5m and 50cm if >4m.

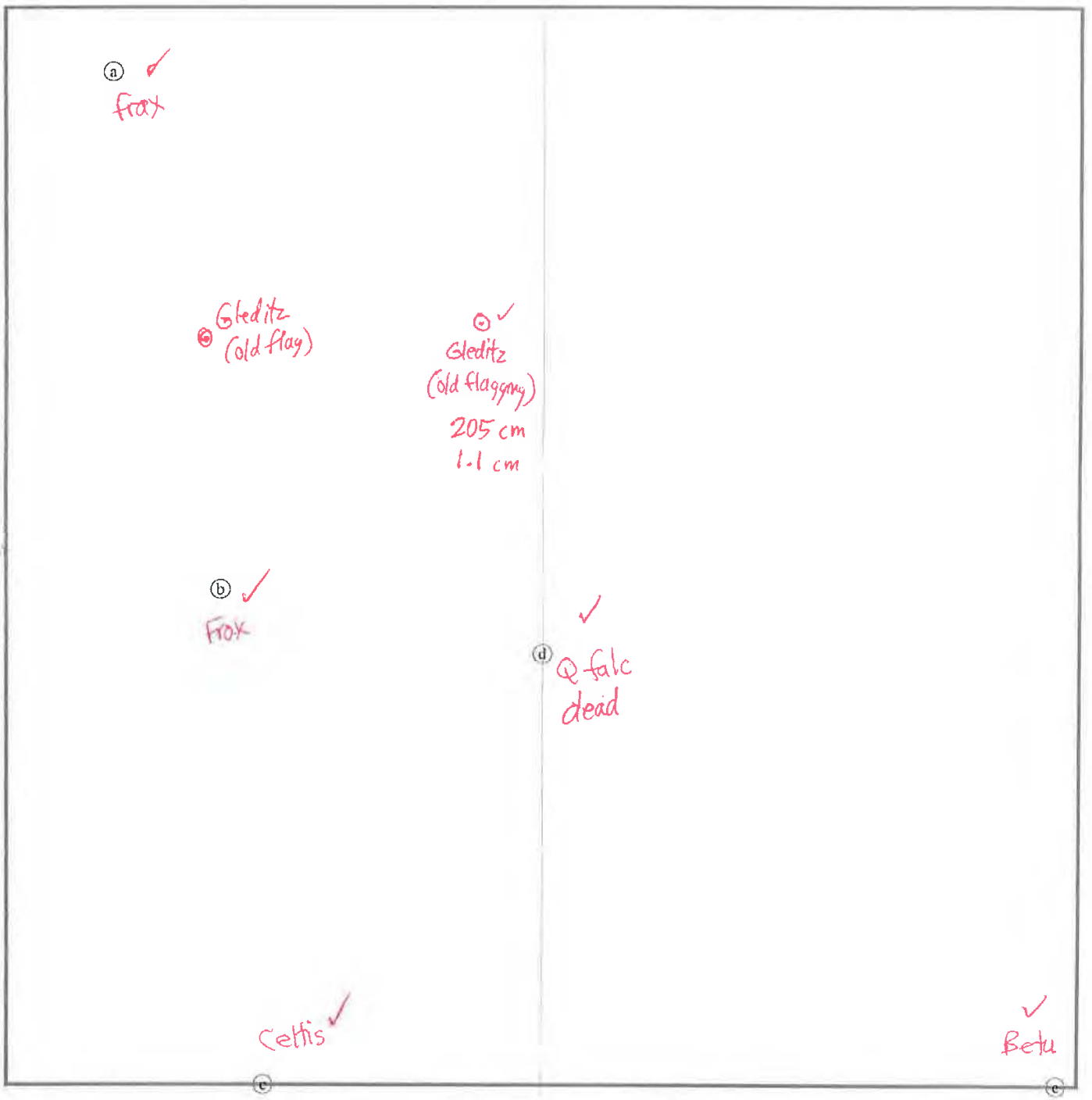
*Printed in the CVS-EEP Entry Tool ver 2.2.7*

## Map of stems on plot E92347-01-0002

X-axis: 275°

*# stems: 5*
*map size: LARGE*

N




*SOURCE: Tr=Transplant, L=Live stake, B=Ball and burlap, P=Potted, Tu=Tubling, R=bare Root, M=Mechanically, U=Unknown



*VIGOR: 4=excellent, 3=good, 2=fair, 1=unlikely to survive year, 0=dead, M=missing.

*DAMAGE: REMoval, CUT, MOWing, BEAVer, DEER, RODents, INSects, GAME, LIVESTock, Other/Unknown ANIMal, Human TRAMpled, Site Too WET, Site Too DRY, FLOOD, DROUght, STORM, HURRicane, DISeased, VINE Strangulation, UNKNown, specify other.

*HEIGHT PRECISION drops to 10cm if >2.5m and 50cm if >4m.

0 of 26

**Plot E92347-01-0003** — Please fill in any missing data and fix incorrect data. — **Vegetation Monitoring Data (VMD) Datasheet**

| | | | |
|---|---|---|---|
| VMD Year (1-5): 3 | Date: 26 / OCT / 12 | - / / | Party: / Role: |
| Taxonomic Standard: | | | |
| Taxonomic Standard DATE: | | | |
| Latitude or UTM-N: (dec.deg. or m) | 1884743 | Datum: NAD83/W | |
| Longitude or UTM-E: | 677040 | UTM Zone: nc | |
| Coordinate Accuracy (m): | 1 | X-Axis bearing (deg): 100 | |
| Plot Dimensions: X: | 10 | Y: 10 | ☐ Plot has reverse orientation for X and Y axis (Y is 90 degrees to the right of X |

Notes on plot:

| ID | Species Name | Map char | Source* | X 0.1m | Y 0.1m | Sep 2011 Data ddh 1 mm | Sep 2011 Data Height 1cm* | Sep 2011 Data DBH 1 cm | Notes* | THIS YEAR'S DATA ddh 1mm | Height 1cm* | DBH 1 cm | Re-sprout | Vigor* | Damage* | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1007 | Fraxinus pennsylvanica | b | R | 1.1 | 1.1 | 2 | 22.0 | | ☐ | 3 | 27 | – | ☐ | 1 | | ~~Dead~~ Nearly Dead |
| 1008 | Quercus phellos | c | R | 2.9 | 1.4 | 6 | 64.0 | | ☐ | 9 | 73 | – | ☐ | 2 | | |
| 1009 | Quercus michauxii | g | R | 5.5 | 0.2 | 15 | 85.0 | | ☐ | 23 | 125 | – | ☐ | 3 | DIS | tops fungus |
| 1010 | Betula nigra | l | R | 9.5 | 0.6 | 10 | 51.0 | | ☑ | 8 | 87 | – | ☐ | 2 | | |
| 1011 | Quercus michauxii | h | R | 6.6 | 2.5 | 6 | 30.0 | | ☐ | 4 | 110 | – | ☐ | 1 | | 1 live twig |
| 1012 | Nyssa sylvatica | a | R | 0.4 | 3.1 | 5 | 45.0 | | ☐ | 5 | 10 | – | ☐ | 1 | UNK | 1 live twig @10cm |
| 1013 | Betula nigra | e | R | 3.9 | 4.1 | 12 | 79.0 | | ☐ | 13 | 80 | – | ☐ | 2 | | |
| 1014 | Fraxinus pennsylvanica | j | R | 8.7 | 4.2 | 9 | 48.0 | | ☐ | 11 | 55 | – | ☐ | 2 | | |
| 1015 | Fraxinus pennsylvanica | i | R | 8.0 | 5.4 | 10 | 57.0 | | ☑ | 10 | 58 | – | ☐ | 1 | | 1 live twig |
| 1016 | Celtis laevigata | f | R | 5.2 | 7.0 | 6 | 19.0 | | ☑ | 5 | 30 | – | ☐ | 1 | | |
| 1019 | Diospyros virginiana | d | R | 3.2 | 8.7 | 5 | 33.0 | | ☑ | 4 | 37 | – | ☐ | 1 | | new leader |
| 386 | Fraxinus pennsylvanica | k | R | 9.0 | 8.1 | 3 | 26.0 | | ☐ | – | – | – | ☐ | 0 | | Dead |

*# stems:* 12

New Stems, not included last year, but are obviously planted. If more space needed, use blank PWS (Planted Woody Stems) Form:

| Species Name | Source* | X (m) | Y (m) | ddh 1 mm | Height 1 cm* | DBH 1 cm | Vigor* | Damage* | Notes |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

***Notes by ID:**
1010-leader died
1015-top died
1016-broken
1019-top died

Dry Poor hard soil - even weeds are weak.
Andropogon, Solidago, Dog F

*SOURCE: Tr=Transplant, L=Live stake, B=Ball and burlap, P=Potted, Tu=Tubling, R=bare Root, M=Mechanically, U=Unknown



*VIGOR: 4=excellent, 3=good, 2=fair, 1=unlikely to survive year, 0=dead, M=missing.

*DAMAGE: REMoval, CUT, MOWing, BEAVer, DEER, RODents, INSects, GAME, LIVESTock, Other/Unknown ANIMal, Human TRAMpled, Site Too WET, Site Too DRY, FLOOD, DROUght, STORM, HURRicane, DISeased, VINE Strangulation, UNKNown, specify other.

*HEIGHT PRECISION drops to 10cm if >2.5m and 50cm if >4m.

*Printed in the CVS-EEP Entry Tool ver. 2.2.7*

**Plot (continued): E92347-01-0003**

| ID | Species | map char | source | X (m) | Y (m) | Sep 2011 Data ddh (mm) | Sep 2011 Data Height (cm) | Sep 2011 Data DBH (cm) | Notes* | THIS YEAR'S DATA ddh (mm) | THIS YEAR'S DATA Height (cm) | THIS YEAR'S DATA DBH (cm) | THIS YEAR'S DATA Re-sprout | THIS YEAR'S DATA Vigor* | THIS YEAR'S DATA Damage* | THIS YEAR'S DATA Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

## Natural Woody Stems - tallied by species

Explanation of cut-off & subsampling**:

**Height Cut-Off** (All stems shorter than this are ignored. If >10cm, explain why to the right.): ☐ 10cm ☐ 50cm ☐ 100cm ☐ 137cm

| Species Name | ☑ c | Seedlings — Height Classes: Sub-Seed | 10 cm-50 cm | 50 cm-100 cm | 100 cm-137 cm | Saplings — DBH: Sub-Sapl | 0-1 cm | 1-2.5 | Trees — DBH: 2.5- | 5- | =10 (write DBH) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Bacchars hal | | | | | | | | | | | |
| Frax penns | | | | | | | | | | | |
| Ligust sinen | | | | | | | | | | | |
| Salix nig | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |

**Required if cut-off >10cm or subsample ? 100%.

●1 ●2 ●3 ●4 ●5 ●6 ●7 ●8 ●9 ●10

Form WS2, ver 9.1

*SOURCE: Tr=Transplant, L=Live stake, B=Ball and burlap, P=Potted, Tu=Tubling, R=bare Root, M=Mechanically, U=Unknown



*VIGOR: 4=excellent, 3=good, 2=fair, 1=unlikely to survive year, 0=dead, M=missing.

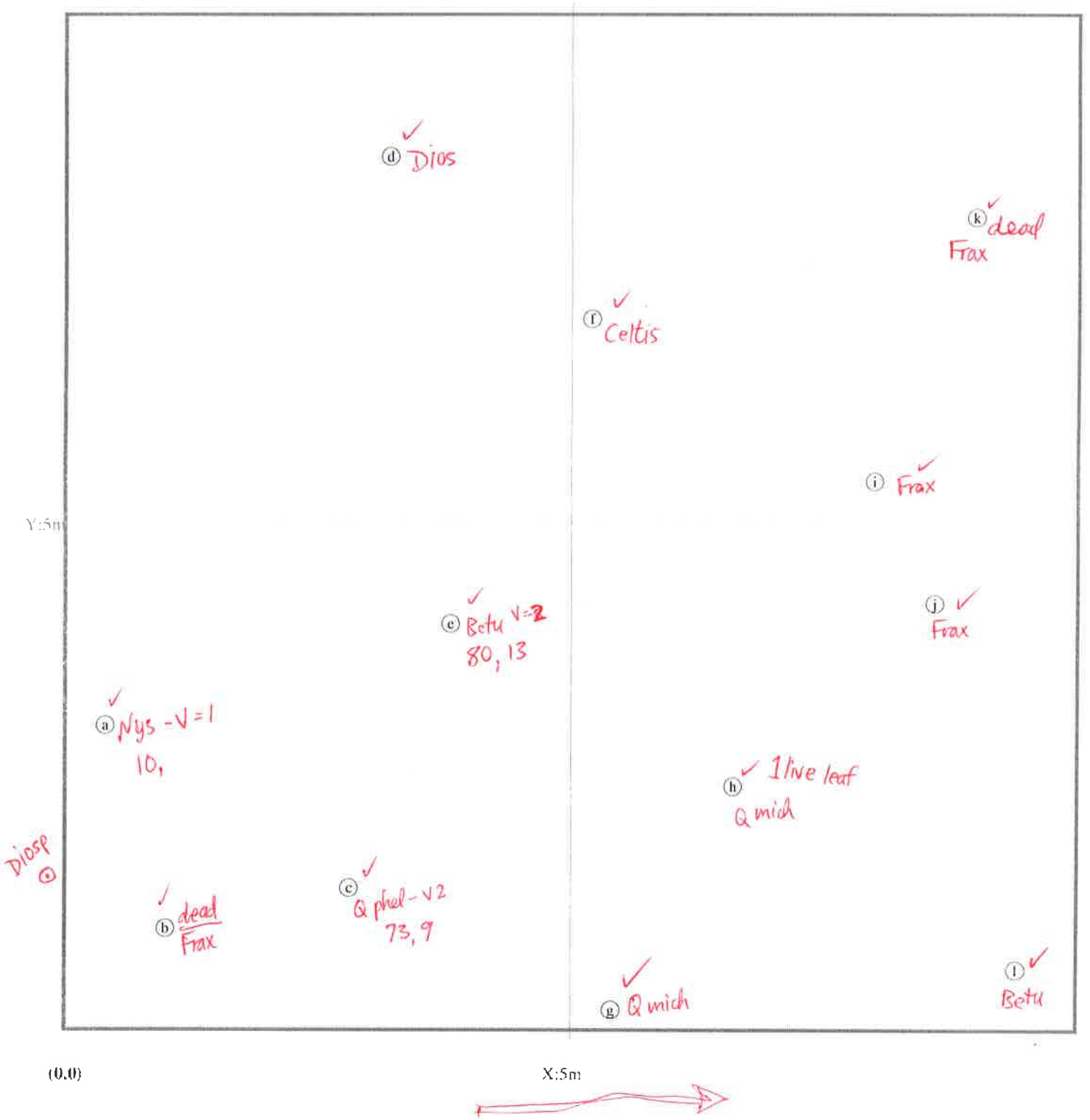
*DAMAGE: REMoval, CUT, MOWing, BEAVer, DEER, RODents, INSects, GAME, LIVESTock, Other/Unknown ANIMal, Human TRAMpled, Site Too WET, Site Too DRY, FLOOD, DROUght, STORM, HURRicane, DISeased, VINE Strangulation, UNKNown, specify other.

*HEIGHT PRECISION drops to 10cm if >2.5m and 50cm if >4m.

## Map of stems on plot E92347-01-0003

X-axis: 100° N

*# stems: 12*
*map size: LARGE*




*SOURCE: Tr=Transplant, L=Live stake, B=Ball and burlap, P=Potted, Tu=Tubling, R=bare Root, M=Mechanically, U=Unknown



*VIGOR: 4=excellent, 3=good, 2=fair, 1=unlikely to survive year, 0=dead, M=missing.

*DAMAGE: REMoval, CUT, MOWing, BEAVer, DEER, RODents, INSects, GAME, LIVESTock, Other/Unknown ANIMal, Human TRAMpled, Site Too WET, Site Too DRY, FLOOD, DROUght, STORM, HURRicane, DISeased, VINE Strangulation, UNKNown, specify other.

*HEIGHT PRECISION drops to 10cm if >2.5m and 50cm if >4m.

**Plot E92347-01-0004** — Please fill in any missing data and fix incorrect data. — **Vegetation Monitoring Data (VMD) Datasheet**

VMD Year (1-5): 3 Date: 26 / Oct / 12 - / /

Party: GBP Role:

Notes on plot:

Taxonomic Standard:

Taxonomic Standard DATE:

Latitude or UTM-N: (dec.deg. or m) 1884972 Datum: NAD83/WGS84

Longitude or UTM-E: 676808 UTM Zone: ne

Coordinate Accuracy (m): 1 X-Axis bearing (deg): 310

Plot Dimensions: X: 10 Y: 10 ☐ Plot has reverse orientation for X and Y axis (Y is 90 degrees to the right of X

| ID | Species Name | Map char | Source* | X 0.1m | Y 0.1m | Sep 2011 Data ddh 1 mm | Height 1cm* | DBH 1 cm | Notes* | THIS YEAR'S DATA ddh 1mm | Height 1cm* | DBH 1 cm | Re-sprout | Vigor* | Damage* | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1025 | Fraxinus pennsylvanica | (c) | R | 8.5 | 0.0 | 20 | 114.0 | *DBH?* | ☐ | — | 168 | 0.6 | ☐ | 3 | | |
| 1026 | Celtis laevigata | (d) | R | 7.4 | 3.0 | 6 | 55.0 | | ☐ | 7 | 56 | — | ☐ | 2 | | |
| 1027 | Quercus michauxii | (b) | R | 4.2 | 2.5 | 15 | 73.0 | | ☐ | 18 | 115 | | ☐ | 3 | | |
| 1028 | Nyssa sylvatica | (a) | R | 1.0 | 3.6 | 5 | 27.0 | | ☐ | 6 | 54 | — | ☐ | 2 | | |
| 1029 | Platanus occidentalis | (f) | R | 9.8 | 3.6 | 22 | 163.0 | 0.5 | ☐ | — | 214 | 1.3 | ☐ | 3 | | |
| 1030 | Betula nigra | (c) | R | 7.2 | 5.8 | 9 | 91.0 | | ☐ | 18 | 135 | — | ☐ | 3 | | |

*# stems:* 6

New Stems, not included last year, but are obviously planted. If more space needed, use blank PWS (Planted Woody Stems) Form:

| Species Name | Source* | X (m) | Y (m) | ddh 1 mm | Height 1 cm* | DBH 1 cm | Vigor* | Damage* | Notes |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

## Natural Woody Stems - tallied by species

Explanation of cut-off & subsampling**:

**Height Cut-Off** (All stems shorter than this are ignored. If >10cm, explain why to the right.): ☐ 10cm ☐ 50cm ☐ 100cm ☐ 137cm

| Species Name | ☑ c | Seedlings — Height Classes: Sub-Seed | 10 cm-50 cm | 50 cm-100 cm | 100 cm-137 cm | Saplings — DBH: Sub-Sapl | 0-1 cm | 1-2.5 | Trees — DBH: 2.5- | 5- | =10 (write DBH) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Frax penns | | ___ | ⊠⊠:. | ⊠:: | :. | ___ | | | | | |
| Ligus sine | | ___ | :. | . | | ___ | | | | | |
| Bacchans | | ___ | | : | . | ___ | | | | | |
| | | ___ | | | | ___ | | | | | |
| | | ___ | | | | ___ | | | | | |
| | | ___ | | | | ___ | | | | | |
| | | ___ | | | | ___ | | | | | |

**Required if cut-off >10cm or subsample ? 100%.

●1 ●2 ●3 ●4 ●5 ●6 ●7 ●8 ●9 ●10

Form WS2, ver 9.1

*SOURCE: Tr=Transplant, L=Live stake, B=Ball and burlap, P=Potted, Tu=Tubling, R=bare Root, M=Mechanically, U=Unknown



*VIGOR: 4=excellent, 3=good, 2=fair, 1=unlikely to survive year, 0=dead, M=missing.

*DAMAGE: REMoval, CUT, MOWing, BEAVer, DEER, RODents, INSects, GAME, LIVESTock, Other/Unknown ANIMal, Human TRAMpled, Site Too WET, Site Too DRY, FLOOD, DROUght, STORM, HURRicane, DISeased, VINE Strangulation, UNKNown, specify other.

*HEIGHT PRECISION drops to 10cm if >2.5m and 50cm if >4m.

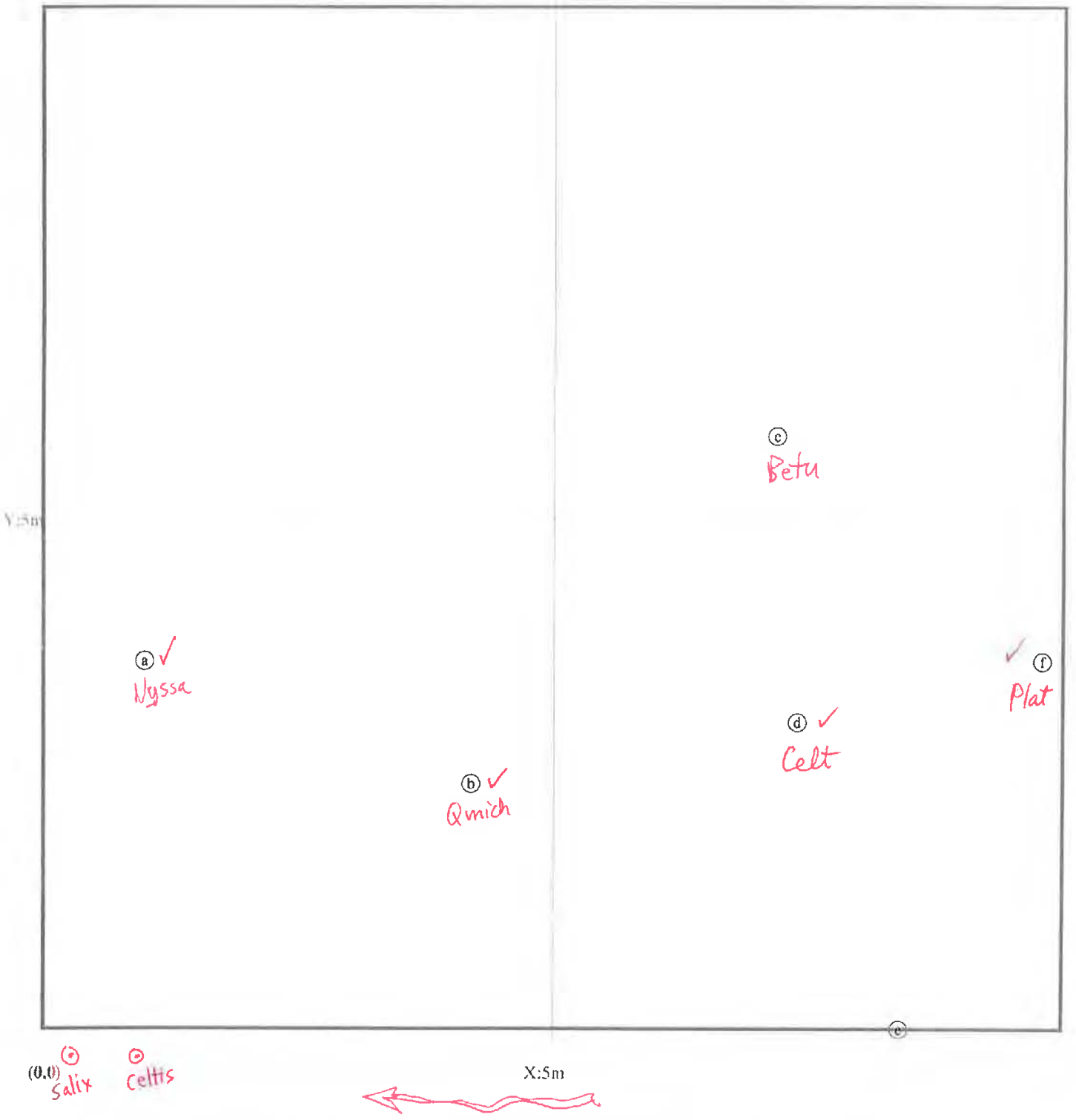
*Printed in the CVS-EEP Entry Tool ver 2.2.7*

## Map of stems on plot E92347-01-0004

X-axis: 310°

*# stems: 6*
*map size: LARGE*

N




*SOURCE: Tr=Transplant, L=Live stake, B=Ball and burlap, P=Potted, Tu=Tubling, R=bare Root, M=Mechanically, U=Unknown



*VIGOR: 4=excellent, 3=good, 2=fair, 1=unlikely to survive year, 0=dead, M=missing.

*DAMAGE: REMoval, CUT, MOWing, BEAVer, DEER, RODents, INSects, GAME, LIVESTock, Other/Unknown ANIMal, Human TRAMpled, Site Too WET, Site Too DRY, FLOOD, DROUght, STORM, HURRicane, DISeased, VINE Strangulation, UNKNown, specify other.

*HEIGHT PRECISION drops to 10cm if >2.5m and 50cm if >4m.

*Printed in the CVS-EEP Entry Tool ver 2.2.7*

**Plot E92347-01-0005** Planted VoLS **Please fill in any missing data and fix incorrect data.** **Vegetation Monitoring Data (VMD) Datasheet**

**VMD Year (1-5):** 3 Date: 27 / SEP / 12 + 26 / OCT / 12 Party: GBP Role:

Notes on plot:

Taxonomic Standard:

Taxonomic Standard DATE:

Latitude or UTM-N: (dec.deg. or m) 1885064 Datum: NAD83/WGS84

Longitude or UTM-E: 676653 UTM Zone: ne

Coordinate Accuracy (m): 1 X-Axis bearing (deg): 295

Plot Dimensions: X: 10 Y: 10 ☐ Plot has reverse orientation for X and Y axis (Y is 90 degrees to the right of X

| ID | Species Name | Map char | Source* | X 0.1m | Y 0.1m | Sep 2011 Data ddh 1 mm | Sep 2011 Data Height 1cm* | Sep 2011 Data DBH 1 cm | Notes* | THIS YEAR'S DATA ddh 1mm | Height 1cm* | DBH 1 cm | Re-sprout | Vigor* | Damage* | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1037 | Fraxinus pennsylvanica | d | R | 1.9 | 1.5 | 9 | 102.0 | DBH? | ☐ | 12 | 130 | — | ☐ | 3 | | |
| 1038 | Cephalanthus occidentalis | f | R | 2.2 | 1.0 | 15 | 77.0 | | ☐ | 10 | 91 | — | ☐ | 3 | | |
| 1039 | Fraxinus pennsylvanica | j | R | 3.2 | 0.4 | 11 | 84.0 | | ☐ | 11 | 94 | — | ☐ | 3 | | |
| 1040 | Fraxinus pennsylvanica | n | R | 4.6 | 0.9 | 20 | 172.0 | 0.6 | ☐ | — | 210 | 1.2 | ☐ | 3 | | |
| 1041 | Fraxinus pennsylvanica | p | R | 5.5 | 1.0 | 21 | 193.0 | 0.7 | ☐ | — | 250 | 1.9 | ☐ | 4 | | |
| 1042 | Fraxinus pennsylvanica | x | R | 7.9 | 1.1 | 27 | 195.0 | 0.9 | ☐ | — | 240 | 1.8 | ☐ | 4 | | |
| 1043 | Platanus occidentalis | ; | R | 9.5 | 0.1 | 21 | 203.0 | 0.9 | ☐ | — | 300 | 2.0 | ☐ | 4 | | |
| 1044 | Fraxinus pennsylvanica | G | R | 9.8 | 0.4 | 30 | 208.0 | 1.4 | ☐ | — | 270 | 1.8 | ☐ | 4 | | |
| 1045 | Fraxinus pennsylvanica | A | R | 8.2 | 2.5 | 27 | 175.0 | 0.7 | ☐ | — | 220 | 1.6 | ☐ | 3 | | |
| 1046 | Cephalanthus occidentalis | v | R | 6.9 | 2.2 | 18 | 115.0 | DBH? | ☐ | 18 | 127 | — | ☐ | 4 | | |
| 1047 | Cephalanthus occidentalis | s | R | 6.0 | 2.6 | *Missing* | | | ☐ | — | — | — | ☐ | 0 | | |
| 1048 | Cephalanthus occidentalis | q | R | 5.1 | 2.5 | 12 | 70.0 | | ☐ | 12 | 80 | — | ☐ | 3 | | |
| 1049 | Cephalanthus occidentalis | k | R | 3.5 | 3.8 | 11 | 87.0 | | ☐ | 13 | 95 | — | ☐ | 3 | | |
| 1050 | Cephalanthus occidentalis | g | R | 2.9 | 3.7 | 11 | 86.0 | | ☐ | 10 | 96 | — | ☐ | 3 | | |
| 1051 | Cephalanthus occidentalis | t | R | 6.1 | 4.0 | 14 | 104.0 | DBH? | ☐ | 14 | 102 | — | ☐ | 3 | | |
| 1052 | Cephalanthus occidentalis | y | R | 7.8 | 4.0 | 19 | 139.0 | 0.2 | ☐ | 19 | 136 | — | ☐ | 3 | | |
| 1053 | Platanus occidentalis | C | R | 9.0 | 4.2 | 15 | 126.0 | DBH? | ☐ | — | 240 | 1.1 | ☐ | 3 | | |
| 1054 | Fraxinus pennsylvanica | D | R | 9.0 | 5.3 | 25 | 197.0 | 0.8 | ☐ | — | 280 | 1.7 | ☐ | 3 | | |
| 1055 | Cephalanthus occidentalis | r | R | 5.9 | 4.6 | 18 | 120.0 | DBH? | ☐ | 18 | 128 | — | ☐ | 4 | | |
| 1056 | Fraxinus pennsylvanica | u | R | 6.0 | 5.1 | 29 | 187.0 | 0.8 | ☐ | — | 260 | 1.7 | ☐ | 4 | | |
| 1057 | Fraxinus pennsylvanica | a | R | 0.3 | 5.6 | 25 | 177.0 | 1.0 | ☐ | — | 240 | 1.7 | ☐ | 4 | | |
| 1058 | Fraxinus pennsylvanica | e | R | 1.9 | 5.2 | 15 | 102.0 | DBH? | ☐ | — | 139 | 0.4 | ☐ | 3 | | |
| 1059 | Fraxinus pennsylvanica | h | R | 3.1 | 5.4 | 20 | 143.0 | 0.5 | ☐ | — | 186 | 1.0 | ☐ | 3 | | |
| 1060 | Cephalanthus occidentalis | B | R | 8.5 | 6.2 | 14 | 93.0 | | ☐ | 14 | 116 | — | ☐ | 3 | | |
| 1061 | Cephalanthus occidentalis | z | R | 8.0 | 6.6 | 25 | 137.0 | 0.1 | ☐ | — | 153 | 0.4 | ☐ | 4 | | |
| 1062 | Cephalanthus occidentalis | m | R | 4.2 | 6.9 | 24 | 128.0 | DBH? | ☐ | 22 | 115 | — | ☐ | 3 | | |
| 1063 | Fraxinus pennsylvanica | i | R | 3.0 | 6.6 | 30 | 197.0 | 0.8 | ☐ | — | 240 | 1.4 | ☐ | 4 | | |
| 1065 | Fraxinus pennsylvanica | c | R | 1.7 | 7.5 | 28 | 203.0 | 0.8 | ☐ | — | 270 | 1.5 | ☐ | 4 | | |
| 1067 | Fraxinus pennsylvanica | w | R | 7.2 | 8.5 | 28 | 210.0 | 1.0 | ☐ | — | 320 | 2.1 | ☐ | 4 | | |
| 1068 | Fraxinus pennsylvanica | F | R | 9.5 | 7.3 | 27 | 143.0 | 0.5 | ☐ | — | 210 | 1.3 | ☐ | 4 | | |
| 1071 | Fraxinus pennsylvanica | l | R | 3.6 | 8.2 | 18 | 94.0 | | ☐ | — | 186 | 0.9 | ☐ | 3 | | |
| 1072 | Fraxinus pennsylvanica | q | R | 5.4 | 9.6 | 17 | 125.0 | DBH? | ☐ | — | 174 | 0.7 | ☐ | 3 | | |

*SOURCE: Tr=Transplant, L=Live stake, B=Ball and burlap, P=Potted, Tu=Tubling, R=bare Root, M=Mechanically, U=Unknown



*VIGOR: 4=excellent, 3=good, 2=fair, 1=unlikely to survive year, 0=dead, M=missing.

*DAMAGE: REMoval, CUT, MOWing, BEAVer, DEER, RODents, INSects, GAME, LIVESTock, Other/Unknown ANIMal, Human TRAMpled, Site Too WET, Site Too DRY, FLOOD, DROUght, STORM, HURRicane, DISeased, VINE Strangulation, UNKNown, specify other.

*HEIGHT PRECISION drops to 10cm if >2.5m and 50cm if >4m.

## Plot (continued): E92347-01-0005

| ID | Species | map char | source | X (m) | Y (m) | Sep 2011 Data ddh (mm) | Height (cm) | DBH (cm) | Notes* | THIS YEAR'S DATA ddh (mm) | Height (cm) | DBH (cm) | Re-sprout | Vigor* | Damage* | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| * 1073 | Betula nigra | (b) | R | 1.3 | 1.7 | 13 | 100.0 | | ☐ | 17 | 118 | — | ☐ | 4 | | |

*# stems:* 33 New Stems, not included last year, but are obviously planted. If more space needed, use blank PWS (Planted Woody Stems) Form:

| Species Name | Source* | X (m) | Y (m) | ddh 1 mm | Height 1 cm* | DBH 1 cm | Vigor* | Damage* | Notes |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

## 0826 Natural Woody Stems - tallied by species

Explanation of cut-off & subsampling**:

**Height Cut-Off** (All stems shorter than this are ignored. If >10cm, explain why to the right.): ☐ 10cm ☐ 50cm ☐ 100cm ☐ 137cm

| Species Name | ☑ c | Seedlings — Height Classes: Sub-Seed | 10 cm-50 cm | 50 cm-100 cm | 100 cm-137 cm | Saplings — DBH: Sub-Sapl | 0-1 cm | 1-2.5 | Trees — DBH: 2.5- | 5- | =10 (write DBH) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Frax pen | | ___ | ☒ | ☐ | | ___ | | | | | |
| Liquid styra | | ___ | | | | ___ | | | | | |
| Ulmus amer | | ___ | ☒ | | | ___ | | | | | |
| Acer rubr | | ___ | | | | ___ | | | | | |
| Ulmus alata | | ___ | | | | ___ | | | | | |
| Gleditsia triac | | ___ | | | | ___ | | | | | |
| | | ___ | | | | ___ | | | | | |

**Required if cut-off >10cm or subsample ? 100%. ●1 ●2 ●3 ●4 ●5 ●6 ●7 ●8 ●9 ●10 Form WS2, ver 9.1

*SOURCE: Tr=Transplant, L=Live stake, B=Ball and burlap, P=Potted, Tu=Tubling, R=bare Root, M=Mechanically, U=Unknown

*VIGOR: 4=excellent, 3=good, 2=fair, 1=unlikely to survive year, 0=dead, M=missing.

*DAMAGE: REMoval, CUT, MOWing, BEAVer, DEER, RODents, INSects, GAME, LIVESTock, Other/Unknown ANIMal, Human TRAMpled, Site Too WET, Site Too DRY, FLOOD, DROUght, STORM, HURRicane, DISeased, VINE Strangulation, UNKNown, specify other.

*HEIGHT PRECISION drops to 10cm if >2.5m and 50cm if >4m.

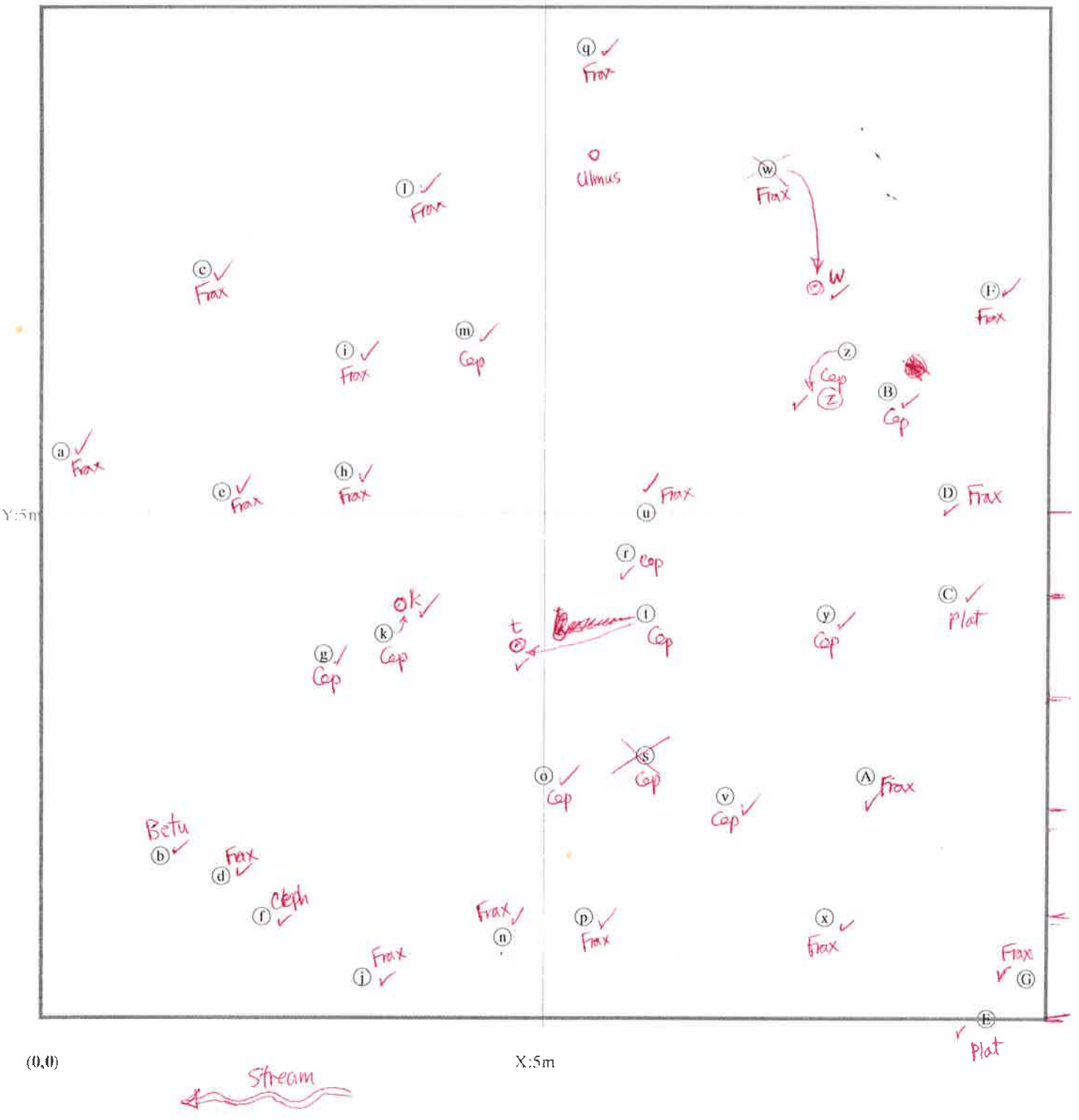
## Map of stems on plot E92347-01-0005

CAPITAL LETTERS represent stems that are different from stems marked with lowercase letters (i.e. "A" is different from "a").

X-axis: 295 °

N

*# stems: 33*
*map size: LARGE*




*SOURCE: Tr=Transplant, L=Live stake, B=Ball and burlap, P=Potted, Tu=Tubling, R=bare Root, M=Mechanically, U=Unknown



*VIGOR: 4=excellent, 3=good, 2=fair, 1=unlikely to survive year, 0=dead, M=missing.

*DAMAGE: REMoval, CUT, MOWing, BEAVer, DEER, RODents, INSects, GAME, LIVESTock, Other/Unknown ANIMal, Human TRAMpled, Site Too WET, Site Too DRY, FLOOD, DROUght, STORM, HURRicane, DISeased, VINE Strangulation, UNKNown, specify other.

*HEIGHT PRECISION drops to 10cm if >2.5m and 50cm if >4m.

*Printed in the CVS-EEP Entry Tool ver. 2.2.7*

## Plot E92347-01-0006

**Please fill in any missing data and fix incorrect data.**

**Vegetation Monitoring Data (VMD) Datasheet**

**VMD Year (1-5):** 3 Date: 28/OCT/12 - / /

Party: GBP Role:

Notes on plot:

Taxonomic Standard:

Taxonomic Standard DATE:

Latitude or UTM-N: (dec.deg. or m) 1885215 Datum: NAD83/W

Longitude or UTM-E: 676777 UTM Zone: nc

Coordinate Accuracy (m): 1 X-Axis bearing (deg): 90

Plot Dimensions: X: 10 Y: 10 ☐ Plot has reverse orientation for X and Y axis (Y is 90 degrees to the right of X

| ID | Species Name | Map char | Source* | X 0.1m | Y 0.1m | Sep 2011 Data ddh 1 mm | Sep 2011 Data Height 1cm* | Sep 2011 Data DBH 1 cm | Notes* | THIS YEAR'S DATA ddh 1mm | Height 1cm* | DBH 1 cm | Re-sprout | Vigor* | Damage* | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1078 | Platanus occidentalis | a | R | 0.4 | 0.4 | 8 | 75.0 | | ☐ | 9 | 77 | — | ☐ | 2 | | |
| 1079 | Platanus occidentalis | d | R | 3.4 | 0.3 | 10 | 96.0 | | ☐ | 12 | 105 | — | ☐ | 2 | | |
| 1080 | Diospyros virginiana | g | R | 6.4 | 0.4 | 6 | 52.0 | | ☐ | 10 | 74 | — | ☐ | 2 | | |
| 1081 | Platanus occidentalis | j | R | 9.4 | 0.4 | 16 | 157.0 | 0.5 | ☐ | — | 188 | 0.8 | ☐ | 3 | | |
| 1082 | Celtis laevigata | i | R | 8.7 | 3.5 | 4 | 28.0 | | ☐ | 4 | 48 | — | ☐ | 2 | | |
| 1083 | Platanus occidentalis | f | R | 5.6 | 3.5 | 10 | 85.0 | | ☐ | 7 | 70 | — | ☒ | 2 | UNK | leader dead |
| 1085 | Platanus occidentalis | k | R | 9.5 | 6.6 | 5 | 54.0 | | ☐ | 9 | 88 | — | ☐ | 3 | | |
| 1086 | Fraxinus pennsylvanica | h | R | 7.1 | 9.2 | 13 | 106.0 | *DBH?* | ☐ | — | 156 | 0.6 | ☐ | 3 | | |
| 1087 | Quercus velutina | c | R | 3.9 | 9.6 | 4 | 34.0 | | ☐ | | | — | ☐ | M | | |
| 1088 | Fraxinus pennsylvanica | b | R | 0.6 | 9.6 | 7 | 56.0 | | ☐ | 7 | 58 | — | ☐ | 2 | | |
| 1090 | Platanus occidentalis | e | R | 3.1 | 6.0 | 4 | 49.0 | | ☑ | 8 | 71 | — | ☐ | 2 | | |

*# stems:* 11

New Stems, not included last year, but are obviously planted. If more space needed, use blank PWS (Planted Woody Stems) Form:

| Species Name | Source* | X (m) | Y (m) | ddh 1 mm | Height 1 cm* | DBH 1 cm | Vigor* | Damage* | Notes |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

***Notes by ID:** 1090-resprout

*SOURCE: Tr=Transplant, L=Live stake, B=Ball and burlap, P=Potted, Tu=Tubling, R=bare Root, M=Mechanically, U=Unknown



*VIGOR: 4=excellent, 3=good, 2=fair, 1=unlikely to survive year, 0=dead, M=missing.

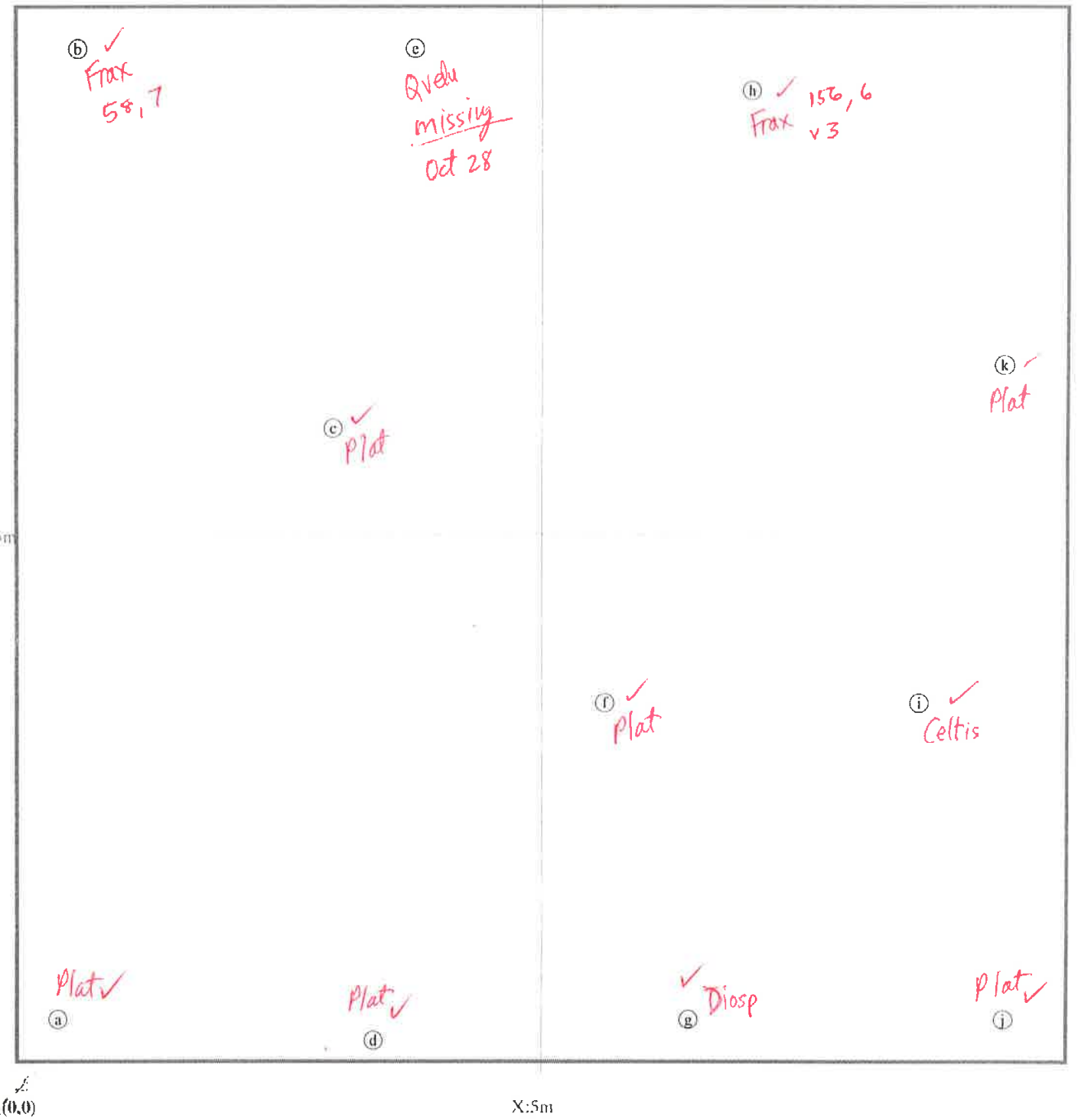
*DAMAGE: REMoval, CUT, MOWing, BEAVer, DEER, RODents, INSects, GAME, LIVESTock, Other/Unknown ANIMal, Human TRAMpled, Site Too WET, Site Too DRY, FLOOD, DROUght, STORM, HURRicane, DISeased, VINE Strangulation, UNKNown, specify other.

*HEIGHT PRECISION drops to 10cm if >2.5m and 50cm if >4m.

## Map of stems on plot E92347-01-0006

X-axis: 90° N

*# stems: 11*
*map size: LARGE*




*SOURCE: Tr=Transplant, L=Live stake, B=Ball and burlap, P=Potted, Tu=Tubling, R=bare Root, M=Mechanically, U=Unknown



*VIGOR: 4=excellent, 3=good, 2=fair, 1=unlikely to survive year, 0=dead, M=missing.

*DAMAGE: REMoval, CUT, MOWing, BEAVer, DEER, RODents, INSects, GAME, LIVESTock, Other/Unknown ANIMal, Human TRAMpled, Site Too WET, Site Too DRY, FLOOD, DROUght, STORM, HURRicane, DISeased, VINE Strangulation, UNKNown, specify other.

*HEIGHT PRECISION drops to 10cm if >2.5m and 50cm if >4m.

*Printed in the CVS-EEP Entry Tool ver. 2.2.7*

**Plot (continued): E92347-01-0006**

| ID | Species | map char | source | X (m) | Y (m) | Sep 2011 Data ddh (mm) | Sep 2011 Data Height (cm) | Sep 2011 Data DBH (cm) | Notes* | THIS YEAR'S DATA ddh (mm) | THIS YEAR'S DATA Height (cm) | THIS YEAR'S DATA DBH (cm) | THIS YEAR'S DATA Re-sprout | THIS YEAR'S DATA Vigor* | THIS YEAR'S DATA Damage* | THIS YEAR'S DATA Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

## Natural Woody Stems - tallied by species

Explanation of cut-off & subsampling**:

**Height Cut-Off** (All stems shorter than this are ignored. If >10cm, explain why to the right.): ☐ 10cm ☐ 50cm ☐ 100cm ☐ 137cm

| Species Name | ☑ c | Seedlings — Height Classes: Sub-Seed | 10 cm-50 cm | 50 cm-100 cm | 100 cm-137 cm | Saplings — DBH: Sub-Sapl | 0-1 cm | 1-2.5 | Trees — DBH: 2.5- | 5- | =10 (write DBH) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Frax pen | | ___ | ☒☒☒ | ☒ | | ___ | | | | | |
| Sympor obtc | | ___ | | | | ___ | | | | | |
| Ulmus alata | | ___ | | | | ___ | | | | | |
| Liquid styra | | ___ | | | | ___ | | | | | |
| | | ___ | | | | ___ | | | | | |
| | | ___ | | | | ___ | | | | | |
| | | ___ | | | | ___ | | | | | |

**Required if cut-off >10cm or subsample ? 100%. ●1 ●2 ●3 ●4 ●5 ●6 ●7 ●8 ●9 ●10 Form WS2, ver 9.

*SOURCE: Tr=Transplant, L=Live stake, B=Ball and burlap, P=Potted, Tu='Tubling, R=bare Root, M=Mechanically, U=Unknown



*VIGOR: 4=excellent, 3=good, 2=fair, 1=unlikely to survive year, 0=dead, M=missing.

*DAMAGE: REMoval, CUT, MOWing, BEAVer, DEER, RODents, INSects, GAME, LIVESTock, Other/Unknown ANIMal, Human TRAMpled, Site Too WET, Site Too DRY, FLOOD, DROUght, STORM, HURRicane, DISeased, VINE Strangulation, UNKNown, specify other.

*HEIGHT PRECISION drops to 10cm if >2.5m and 50cm if >4m.

**Plot E92347-01-0007** — Please fill in any missing data and fix incorrect data. — **Vegetation Monitoring Data (VMD) Datasheet**

VMD Year (1-5): 3 | Date: 28 / OCT / 12 - / / | Party: GBP | Role: | Notes on plot:

Taxonomic Standard:

Taxonomic Standard DATE:

Latitude or UTM-N: (dec.deg. or m) 1885476 | Datum: NAD83/WGS84

Longitude or UTM-E: 676785 | UTM Zone: nc

Coordinate Accuracy (m): 1 | X-Axis bearing (deg): 290

Plot Dimensions: X: 10 | Y: 10 | ☐ Plot has reverse orientation for X and Y axis (Y is 90 degrees to the right of X

| ID | Species Name | Map char | Source* | X 0.1m | Y 0.1m | Sep 2011 Data ddh 1 mm | Sep 2011 Data Height 1cm* | Sep 2011 Data DBH 1 cm | Notes* | THIS YEAR'S DATA ddh 1mm | Height 1cm* | DBH 1 cm | Re-sprout | Vigor* | Damage* | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1094 | Platanus occidentalis | a | R | 0.9 | 1.0 | 10 | 87.0 | | ☐ | 10 | 101 | — | ☐ | 2 | | |
| 1095 | Betula nigra | c | R | 4.4 | 0.9 | 11 | 70.0 | | ☐ | 13 | 94 | — | ☐ | 2 | | |
| 1096 | Betula nigra | b | R | 1.6 | 4.6 | 12 | 85.0 | | ☐ | 18 | 122 | — | ☐ | 3 | | |
| 1097 | Quercus phellos | h | R | 9.2 | 6.9 | 8 | 55.0 | | ☐ | 8 | 60 | — | ☐ | 2 | | |
| 1098 | Quercus phellos | d | R | 3.0 | 8.4 | 6 | 65.0 | | ☐ | 9 | 134 | — | ☐ | 3 | ROD? | chewed at base |
| 1298 | Quercus michauxii | f | R | 6.6 | 4.0 | 10 | 65.0 | | ☐ | 14 | 103 | — | ☐ | 3 | | |
| 1299 | Fraxinus pennsylvanica | e | R | 2.7 | 0.9 | 6 | 50.0 | | ☐ | 7 | 62 | — | ☒ | 2 | | ~~leader dead~~ |
| 387 | Diospyros virginiana | g | R | 8.4 | 0.6 | 5 | 30.0 | | ☐ | 2 | 23 | — | X | 1 | UNK | leader dead |

*# stems:* 8

New Stems, not included last year, but are obviously planted. If more space needed, use blank PWS (Planted Woody Stems) Form.

| Species Name | Source* | X (m) | Y (m) | ddh 1 mm | Height 1 cm* | DBH 1 cm | Vigor* | Damage* | Notes |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

## Natural Woody Stems - tallied by species

Explanation of cut-off & subsampling**:

**Height Cut-Off** (All stems shorter than this are ignored. If >10cm, explain why to the right.): ☐ 10cm ☐ 50cm ☐ 100cm ☐ 137cm

| Species Name | ☑ c | Seedlings — Height Classes: Sub-Seed | 10 cm-50 cm | 50 cm-100 cm | 100 cm-137 cm | Saplings — DBH: Sub-Sapl | 0-1 cm | 1-2.5 | Trees — DBH: 2.5- | 5- | =10 (write DBH) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Liquid styrac | | — | ☒ 1 | | | — | | | | | |
| Ulmus amer | | — | ☒ . | . | | — | | | | | |
| Frax pen | | — | ☐ | : | | — | | | | | |
| Acer rubrum | | — | 1 | | | — | | | | | |
| | | — | | | | — | | | | | |
| | | — | | | | — | | | | | |
| | | — | | | | — | | | | | |

**Required if cut-off >10cm or subsample ? 100%. ●1 ●2 ●3 ●4 ●5 ●6 ●7 ●8 ●9 ●10 Form WS2, ver 9.1

*SOURCE: Tr=Transplant, L=Live stake, B=Ball and burlap, P=Potted, Tu=Tubling, R=bare Root, M=Mechanically, U=Unknown



*VIGOR: 4=excellent, 3=good, 2=fair, 1=unlikely to survive year, 0=dead, M=missing.

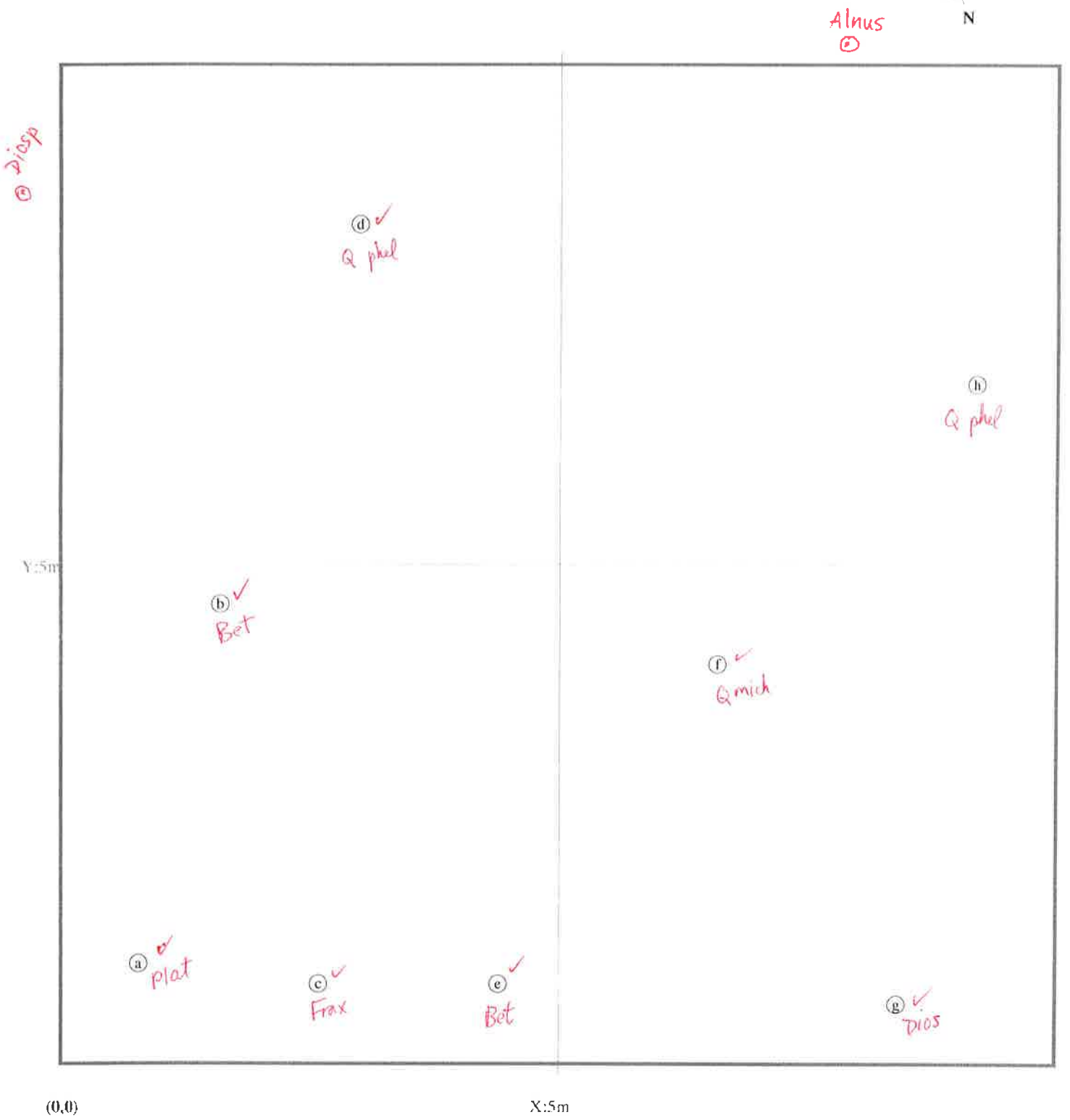
*DAMAGE: REMoval, CUT, MOWing, BEAVer, DEER, RODents, INSects, GAME, LIVESTock, Other/Unknown ANIMal, Human TRAMpled, Site Too WET, Site Too DRY, FLOOD, DROUght, STORM, HURRicane, DISeased, VINE Strangulation, UNKNown, specify other.

*HEIGHT PRECISION drops to 10cm if >2.5m and 50cm if >4m.

## Map of stems on plot E92347-01-0007

X-axis: 290°

*# stems: 8*
*map size: LARGE*




*SOURCE: Tr=Transplant, L=Live stake, B=Ball and burlap, P=Potted, Tu=Tubling, R=bare Root, M=Mechanically, U=Unknown



*VIGOR: 4=excellent, 3=good, 2=fair, 1=unlikely to survive year, 0=dead, M=missing.

*DAMAGE: REMoval, CUT, MOWing, BEAVer, DEER, RODents, INSects, GAME, LIVESTock, Other/Unknown ANIMal, Human TRAMpled, Site Too WET, Site Too DRY, FLOOD, DROUght, STORM, HURRicane, DISeased, VINE Strangulation, UNKNown, specify other.

*HEIGHT PRECISION drops to 10cm if >2.5m and 50cm if >4m.

*Printed in the CVS-EEP Entry Tool ver. 2.2.7*

**Plot E92347-01-0008** — Please fill in any missing data and fix incorrect data. — **Vegetation Monitoring Data (VMD) Datasheet**

VMD Year (1-5): 3 Date: 15 / Sep / 12 - / /

Party: GBP Role:

Notes on plot:

Taxonomic Standard:

Taxonomic Standard DATE:

Latitude or UTM-N: (dec.deg. or m) 1882340 Datum: NAD83/WGS84

Longitude or UTM-E: 675887 UTM Zone: nc

Coordinate Accuracy (m): 1 X-Axis bearing (deg): 130

Plot Dimensions: X: 10 Y: 10 [ ] Plot has reverse orientation for X and Y axis (Y is 90 degrees to the right of X

| ID | Species Name | Map char | Source* | X 0.1m | Y 0.1m | Sep 2011 Data ddh 1 mm | Height 1cm* | DBH 1 cm | Notes* | THIS YEAR'S DATA ddh 1mm | Height 1cm* | DBH 1 cm | Re-sprout | Vigor* | Damage* | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1103 | Betula nigra X = 9.8 | (a) | R | 0.5 | 0.2 | Missing | | | | 5 | 63 | – | | 2 | | |
| 1104 | Betula nigra | (f) | R | 9.9 | 9.0 | 19 | 191.0 | 0.5 | | – | 290 | 1.8 | | 4 | | |
| 1105 | Betula nigra | (b) | R | 1.4 | 9.6 | 15 | 215.0 | 0.8 | | – | 350 | 2.3 | | 4 | | |
| 1107 | Fraxinus pennsylvanica | (c) | R | 4.7 | 2.0 | 7 | 70.0 | | | – | 144 | 0.5 | | | | |
| 388 | Diospyros virginiana | (d) | R | 5.5 | 7.5 | 4 | 63.0 | | | 8 | 95 | – | | 3 | | |
| 389 | Celtis laevigata | (e) | R | 7.0 | 2.0 | 9 | 140.0 | 0.1 | | – | 187 | 0.5 | | 3 | | |

*# stems:* 6

New Stems, not included last year, but are obviously planted. If more space needed, use blank PWS (Planted Woody Stems) Form.

| Species Name | Source* | X (m) | Y (m) | ddh 1 mm | Height 1 cm* | DBH 1 cm | Vigor* | Damage* | Notes |
|---|---|---|---|---|---|---|---|---|---|
| Frax pen g (See map) | | 9.9 | 2.5 | – | 189 | 0.8 | 4 | | |
| Quer mich h | | 2.8 | 1.0 | – | 176 | 0.5 | 3 | | |
| Ulm alata i | | 2.0 | 2.5 | – | 151 | 0.3 | 3 | | |

## Natural Woody Stems - tallied by species

Explanation of cut-off & subsampling**: dense weedy groundcover

Height Cut-Off (All stems shorter than this are ignored. If >10cm, explain why to the right.): ☐ 10cm ☒ 50cm ☒ 100cm ☐ 137cm

| Species Name | ☑ c | Seedlings — Height Classes: Sub-Seed | 10 cm-50 cm | 50 cm-100 cm | 100 cm-137 cm | Saplings — DBH: Sub-Sapl | 0-1 cm | 1-2.5 | Trees — DBH: 2.5- | 5- | =10 (write DBH) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Frax pen | | | | | 5 | | 3 | | | | |
| Ulm amer | | | | | 3 | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |

**Required if cut-off >10cm or subsample ? 100%. ●1 ●2 ●3 ●4 ●5 ●6 ●7 ●8 ●9 ●10 Form WS2, ver 9.1

Solidago, Eupator, 2 m+ high, THICK!
Rubus

*SOURCE: Tr=Transplant, L=Live stake, B=Ball and burlap, P=Potted, Tu=Tubling, R=bare Root, M=Mechanically, U=Unknown



*VIGOR: 4=excellent, 3=good, 2=fair, 1=unlikely to survive year, 0=dead, M=missing.

*DAMAGE: REMoval, CUT, MOWing, BEAVer, DEER, RODents, INSects, GAME, LIVESTock, Other/Unknown ANIMal, Human TRAMpled, Site Too WET, Site Too DRY, FLOOD, DROUght, STORM, HURRicane, DISeased, VINE Strangulation, UNKNown, specify other.

*HEIGHT PRECISION drops to 10cm if >2.5m and 50cm if >4m.

*Printed in the CVS-EEP Entry Tool ver. 2.2.7*

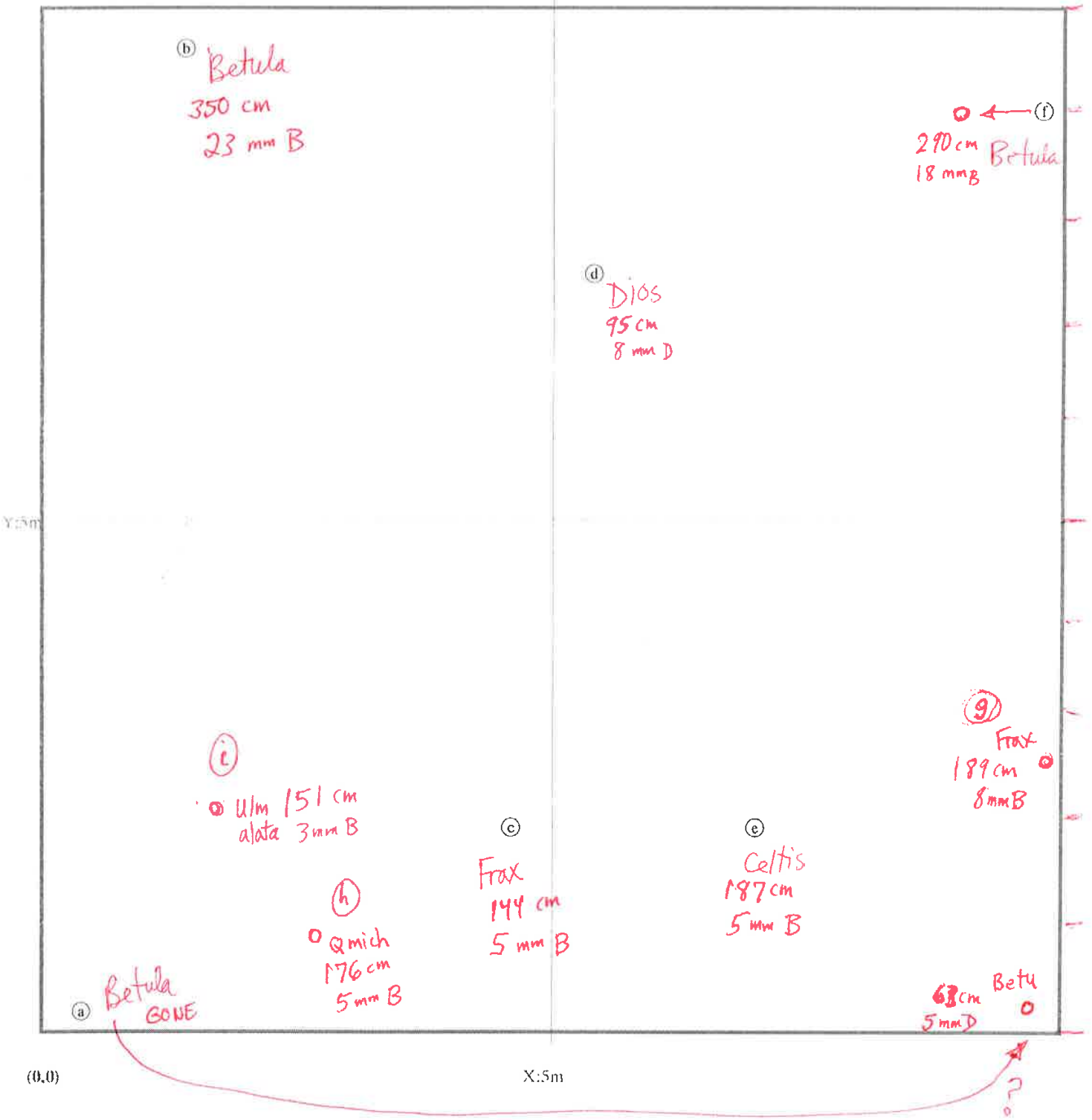
VEG PLOTS 8-12 South Trib

## Map of stems on plot E92347-01-0008

X-axis: 130° N

*# stems: 6*
*map size: LARGE*

Pols - Frax, Ulm amer,




*SOURCE: Tr=Transplant, L=Live stake, B=Ball and burlap, P=Potted, Tu=Tubling, R=bare Root, M=Mechanically, U=Unknown



*VIGOR: 4=excellent, 3=good, 2=fair, 1=unlikely to survive year, 0=dead, M=missing.

*DAMAGE: REMoval, CUT, MOWing, BEAVer, DEER, RODents, INSects, GAME, LIVESTock, Other/Unknown ANIMal, Human TRAMpled, Site Too WET, Site Too DRY, FLOOD, DROUght, STORM, HURRicane, DISeased, VINE Strangulation, UNKNown, specify other.

*HEIGHT PRECISION drops to 10cm if >2.5m and 50cm if >4m.

*Printed in the CVS-EEP Entry Tool ver. 2.2.7*

**Plot E92347-01-0009** — Please fill in any missing data and fix incorrect data. — Vegetation Monitoring Data (VMD) Datasheet

VMD Year (1-5): 3 | Date: 12 / Sep / 2012 - / /

Party: GR Pottern | Role:

Notes on plot:

Taxonomic Standard:

Taxonomic Standard DATE:

Latitude or UTM-N: (dec.deg. or m) 1882512 | Datum: NAD83/W

Longitude or UTM-E: 675739 | UTM Zone: ne

Coordinate Accuracy (m): 1 | X-Axis bearing (deg): 325

Plot Dimensions: X: 10 | Y: 10 | ☐ Plot has reverse orientation for X and Y axis (Y is 90 degrees to the right of X

| ID | Species Name | Map char | Source* | X 0.1m | Y 0.1m | Sep 2011 Data ddh 1 mm | Height 1cm* | DBH 1 cm | Notes* | THIS YEAR'S DATA ddh 1mm | Height 1cm* | DBH 1 cm | Re-sprout | Vigor* | Damage* | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1112 | Betula nigra | (a) | R | 1.7 | 3.9 | 12 | 91.0 | | ☐ | 18 | 129 | – | ☐ | 3 | deer | |
| 1113 | Betula nigra | (d) | R | 5.7 | 6.1 | 11 | 150.0 | 0.3 | ☐ | – | 250 | 1.3 | ☐ | 4 | | |
| 1114 | Fraxinus pennsylvanica | (c) | R | 4.0 | 8.5 | 10 | 80.0 | | ☐ | 14 | 95 | – | ☐ | 3 | deer | |
| 1115 | Betula nigra | (b) | R | 2.0 | 8.5 | 14 | 138.0 | 0.2 | ☐ | – | 240 | 0.8 | ☐ | 4 | | |

*# stems:* 4 — New Stems, not included last year, but are obviously planted. If more space needed, use blank PWS (Planted Woody Stems) Form:

| Species Name | Source* | X (m) | Y (m) | ddh 1 mm | Height 1 cm* | DBH 1 cm | Vigor* | Damage* | Notes |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

## Natural Woody Stems - tallied by species

Explanation of cut-off & subsampling**: dense weedy groundcover

**Height Cut-Off** (All stems shorter than this are ignored. If >10cm, explain why to the right.): ☐ 10cm ☒ 50cm ☐ 100cm ☐ 137cm

| Species Name | ☑ c | Seedlings — Height Classes: Sub-Seed | 10 cm-50 cm | 50 cm-100 cm | 100 cm-137 cm | Saplings — DBH: Sub-Sapl | 0-1 cm | 1-2.5 | Trees — DBH: 2.5- | 5- | =10 (write DBH) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Frax pennsyl | | — | ☒ | ⁘ | ⁘ | — | • | | | | |
| Lig styrac | | — | ☒ | • | | — | | | | | |
| Ulmus amer | | — | ☒ | ⁘ | | — | | | | | |
| Symphor orbic | | — | ☒ | • | | — | | | | | |
| Bacharis halim | | — | | • | | — | | | | | |
| | | — | | | | — | | | | | |
| | | — | | | | — | | | | | |

**Required if cut-off >10cm or subsample ? 100%. ●1 ●2 ●3 ●4 ●5 ●6 ●7 ●8 ●9 ●10 Form WS2, ver 9.1

*SOURCE: Tr=Transplant, L=Live stake, B=Ball and burlap, P=Potted, Tu=Tubling, R=bare Root, M=Mechanically, U=Unknown



*VIGOR: 4=excellent, 3=good, 2=fair, 1=unlikely to survive year, 0=dead, M=missing.

*DAMAGE: REMoval, CUT, MOWing, BEAVer, DEER, RODents, INSects, GAME, LIVESTock, Other/Unknown ANIMal, Human TRAMpled, Site Too WET, Site Too DRY, FLOOD, DROUght, STORM, HURRicane, DISeased, VINE Strangulation, UNKNown, specify other.

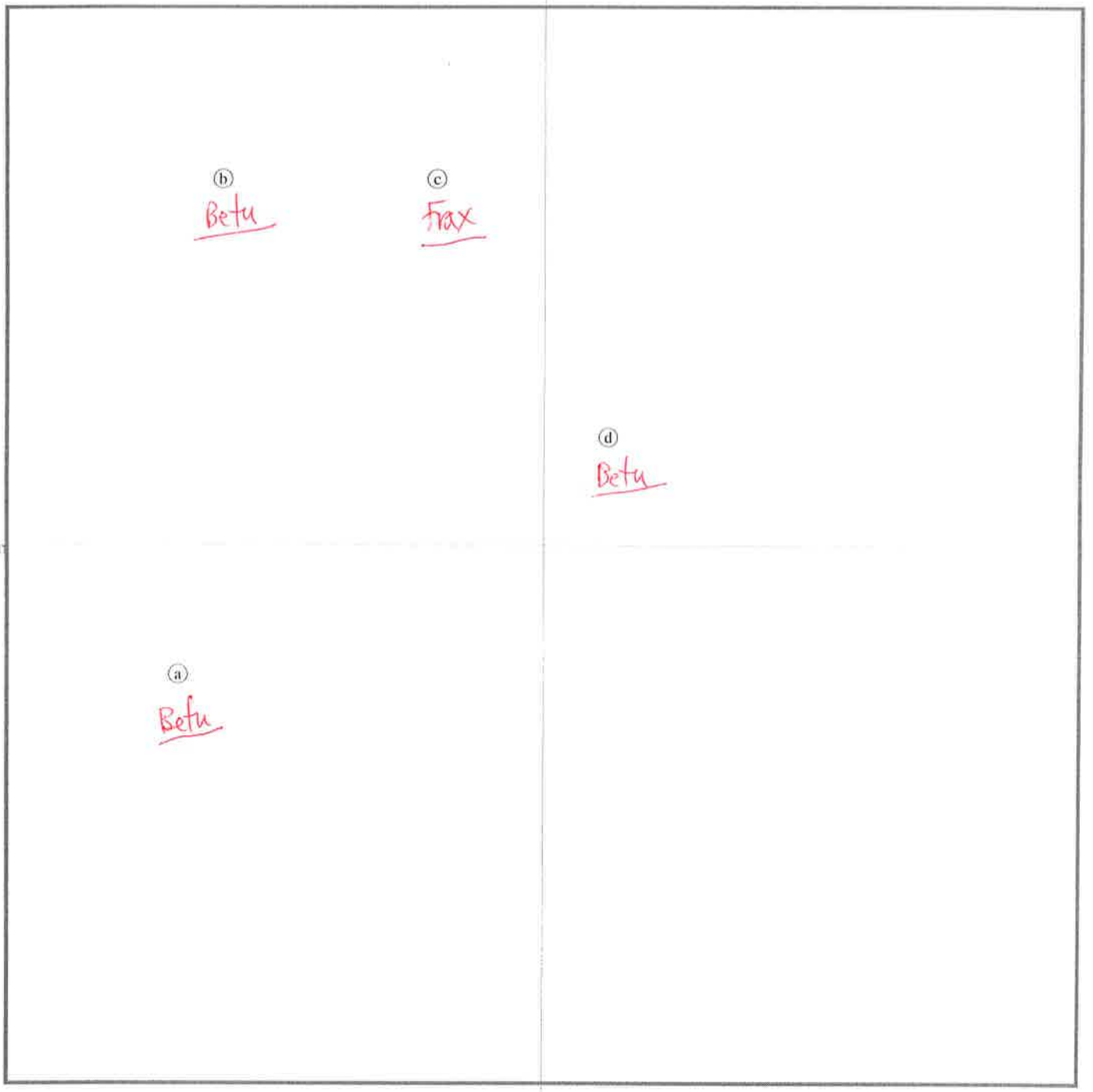
*HEIGHT PRECISION drops to 10cm if >2.5m and 50cm if >4m.

## Map of stems on plot E92347-01-0009

X-axis: 325 °

*# stems: 4*
*map size: LARGE*

N




*SOURCE: Tr=Transplant, L=Live stake, B=Ball and burlap, P=Potted, Tu=Tubling, R=bare Root, M=Mechanically, U=Unknown



*VIGOR: 4=excellent, 3=good, 2=fair, 1=unlikely to survive year, 0=dead, M=missing.

*DAMAGE: REMoval, CUT, MOWing, BEAVer, DEER, RODents, INSects, GAME, LIVESTock, Other/Unknown ANIMal, Human TRAMpled, Site Too WET, Site Too DRY, FLOOD, DROUght, STORM, HURRicane, DISeased, VINE Strangulation, UNKNown, specify other.

*HEIGHT PRECISION drops to 10cm if >2.5m and 50cm if >4m.

*Printed in the CVS-EEP Entry Tool ver. 2.2.7*

**Plot E92347-01-0010** — Please fill in any missing data and fix incorrect data. — **Vegetation Monitoring Data (VMD) Datasheet**

VMD Year (1-5): 3 Date: 13 / Oct / 12 - / /

Party: GBP Role:

Notes on plot:

Taxonomic Standard:

Taxonomic Standard DATE:

Latitude or UTM-N: (dec.deg. or m) 1882875 Datum: NAD83/W

Longitude or UTM-E: 675481 UTM Zone: nc

Coordinate Accuracy (m): 1 X-Axis bearing (deg): 290

Plot Dimensions: X: 10 Y: 10 ☐ Plot has reverse orientation for X and Y axis (Y is 90 degrees to the right of X

| ID | Species Name | Map char | Source* | X 0.1m | Y 0.1m | Sep 2011 Data ddh 1 mm | Height 1cm* | DBH 1 cm | Notes* | THIS YEAR'S DATA ddh 1mm | Height 1cm* | DBH 1 cm | Re-sprout | Vigor* | Damage* | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1119 | Platanus occidentalis | (i) | R | 9.4 | 1.7 | | 320.0 | 2.0 | ☐ | — | 400+ | 5.7 | ☐ | 4 | | |
| 1120 | Fraxinus pennsylvanica | (e) | R | 5.9 | 1.7 | 9 | 82.0 | | ☐ | — | 140 | 0.4 | ☐ | 3 | | |
| 1121 | Fraxinus pennsylvanica | (c) | R | 3.0 | 1.8 | 13 | 114.0 | *DBH?* | ☑ | — | 190 | 1.0 | ☐ | 3 | | |
| 1122 | Fraxinus pennsylvanica | (f) | R | 6.2 | 3.6 | 10 | 100.0 | | ☐ | — | 176 | 0.9 | ☐ | 3 | | |
| 1123 | Betula nigra | (g) | R | 6.2 | 4.6 | 18 | 182.0 | 0.5 | ☐ | — | 195 | 0.5 | ☐ | 0 | | Dead |
| 1124 | Platanus occidentalis | (h) | R | 2.6 | 4.8 | 19 | 180.0 | 0.7 | ☐ | — | 320 | 2-3 | ☐ | 4 | | |
| 1125 | Quercus michauxii | (d) | R | 3.9 | 6.8 | 8 | 48.0 | | ☐ | 14 | 98 | — | ☐ | 2 | Dis | fungus ? |
| 1126 | Quercus michauxii | (h) | R | 8.0 | 6.7 | 10 | 92.0 | | ☐ | — | 143 | 0.5 | ☐ | 3 | | |
| 1127 | Alnus serrulata | (a) | R | 1.1 | 8.2 | 9 | 59.0 | | ☐ | 9 | 55 | — | ☐ | 2 | Deer | |
| 1128 | Betula nigra | (j) | R | 9.5 | 9.5 | 11 | 150.0 | 0.2 | ☐ | — | 270 | 1.5 | ☐ | 3 | | |

*# stems:* 10 New Stems, not included last year, but are obviously planted. If more space needed, use blank PWS (Planted Woody Stems) Form:

| Species Name | Source* | X (m) | Y (m) | ddh 1 mm | Height 1 cm* | DBH 1 cm | Vigor* | Damage* | Notes |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

***Notes by ID:** 1121-resprout

Planted stems 10-13 SAT

Natural stems 10-26 FRI

*SOURCE: Tr=Transplant, L=Live stake, B=Ball and burlap, P=Potted, Tu=Tubling, R=bare Root, M=Mechanically, U=Unknown

*VIGOR: 4=excellent, 3=good, 2=fair, 1=unlikely to survive year, 0=dead, M=missing.

*DAMAGE: REMoval, CUT, MOWing, BEAVer, DEER, RODents, INSects, GAME, LIVESTock, Other/Unknown ANIMal, Human TRAMpled, Site Too WET, Site Too DRY, FLOOD, DROUght, STORM, HURRicane, DISeased, VINE Strangulation, UNKNown, specify other.

*HEIGHT PRECISION drops to 10cm if >2.5m and 50cm if >4m.

**Plot (continued): E92347-01-0010**

| ID | Species | map char | source | X (m) | Y (m) | Sep 2011 Data ddh (mm) | Height (cm) | DBH (cm) | Notes* | THIS YEAR'S DATA ddh (mm) | Height (cm) | DBH (cm) | Re-sprout | Vigor* | Damage* | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

## Natural Woody Stems - tallied by species

**Height Cut-Off** (All stems shorter than this are ignored. If >10cm, explain why to the right.): ☐ 10cm ☐ 50cm ☐ 100cm ☐ 137cm

**Explanation of cut-off & subsampling**:**

| Species Name | ☑ c | Seedlings — Height Classes: Sub-Seed | 10 cm-50 cm | 50 cm-100 cm | 100 cm-137 cm | Saplings — DBH: Sub-Sapl | 0-1 cm | 1-2.5 | Trees — DBH: 2.5- | 5- | =10 (write DBH) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Frax penn | | | | | | | | | | | |
| Ulmus ameri | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |

**Required if cut-off >10cm or subsample ? 100%. ●1 ●2 ●3 ●4 ●5 ●6 ●7 ●8 ●9 ●10

Form WS2, ver 9.1

28 Oct - Vols

Dense Rubus, Solidago, Dog F,

Photo From 10, 10 corner facing E

*SOURCE: Tr=Transplant, L=Live stake, B=Ball and burlap, P=Potted, Tu=Tubling, R=bare Root, M=Mechanically, U=Unknown



*VIGOR: 4=excellent, 3=good, 2=fair, 1=unlikely to survive year, 0=dead, M=missing.

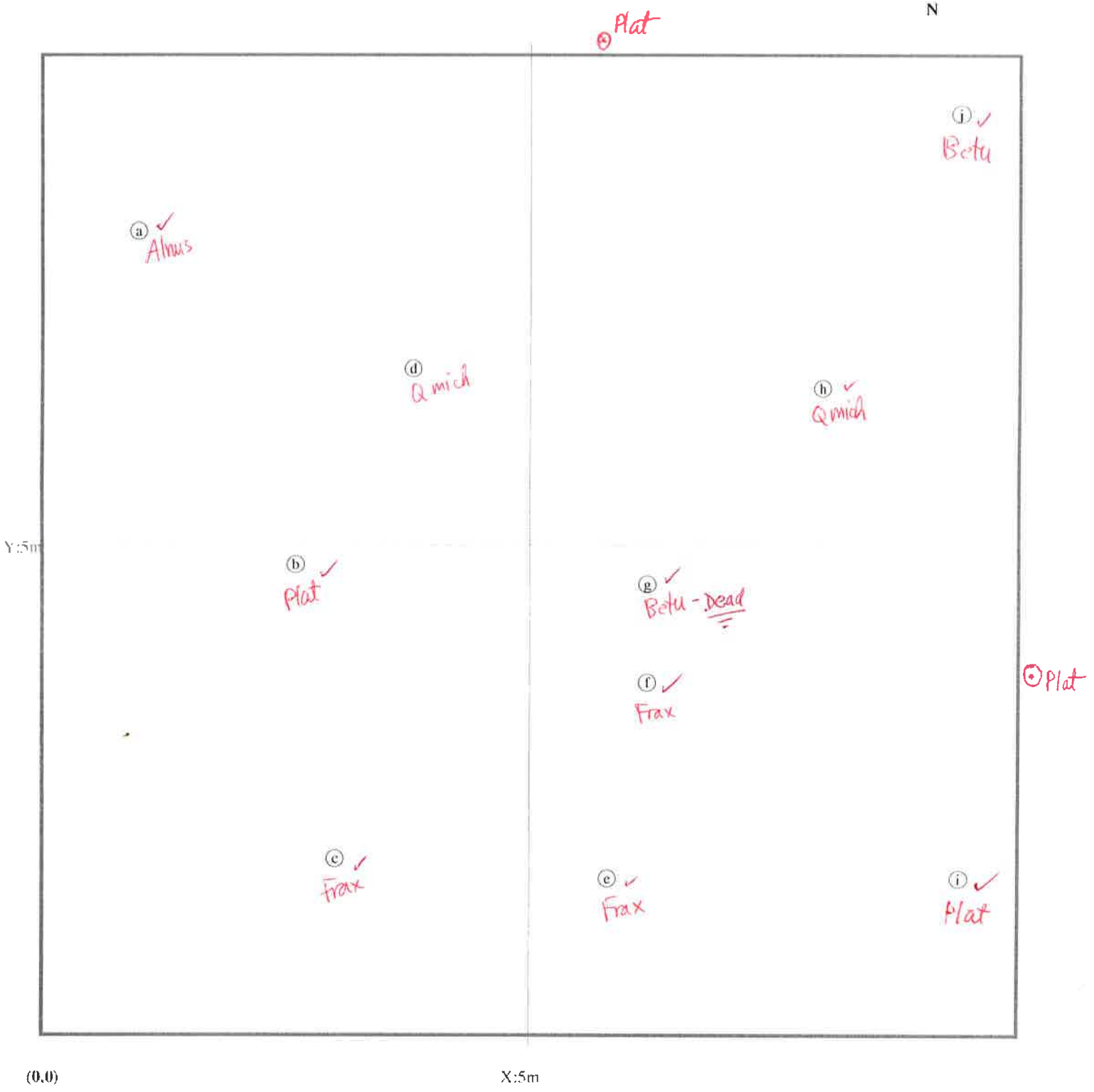
*DAMAGE: REMoval, CUT, MOWing, BEAVer, DEER, RODents, INSects, GAME, LIVESTock, Other/Unknown ANIMal, Human TRAMpled, Site Too WET, Site Too DRY, FLOOD, DROUght, STORM, HURRicane, DISeased, VINE Strangulation, UNKNown, specify other.

*HEIGHT PRECISION drops to 10cm if >2.5m and 50cm if >4m.

## Map of stems on plot E92347-01-0010

X-axis: 290 °

*# stems: 10*
*map size: LARGE*




*SOURCE: Tr=Transplant, L=Live stake, B=Ball and burlap, P=Potted, Tu=Tubling, R=bare Root, M=Mechanically, U=Unknown



*VIGOR: 4=excellent, 3=good, 2=fair, 1=unlikely to survive year, 0=dead, M=missing.

*DAMAGE: REMoval, CUT, MOWing, BEAVer, DEER, RODents, INSects, GAME, LIVESTock, Other/Unknown ANIMal, Human TRAMpled, Site Too WET, Site Too DRY, FLOOD, DROUght, STORM, HURRicane, DISeased, VINE Strangulation, UNKNown, specify other.

*HEIGHT PRECISION drops to 10cm if >2.5m and 50cm if >4m.

**Plot E92347-01-0011** — Please fill in any missing data and fix incorrect data. — **Vegetation Monitoring Data (VMD) Datasheet**

| | | | | | |
|---|---|---|---|---|---|
| **VMD Year (1-5):** | 3 | Date: | 28/OCT/12 | - / / | |
| Taxonomic Standard: | | | | | |
| Taxonomic Standard DATE: | | | | | |
| Latitude or UTM-N: (dec.deg. or m) | 1883130 | Datum: | NAD83/WGS84 | | |
| Longitude or UTM-E: | 675287 | UTM Zone: | ne | | |
| Coordinate Accuracy (m): | 1 | X-Axis bearing (deg): | 315 | | |
| Plot Dimensions: X: | 10 | Y: | 10 | ☐ Plot has reverse orientation for X and Y axis (Y is 90 degrees to the right of X | |

Party: GBP — Role: — Notes on plot:

| ID | Species Name | Map char | Source* | X 0.1m | Y 0.1m | Sep 2011 Data ddh 1 mm | Sep 2011 Data Height 1cm* | Sep 2011 Data DBH 1 cm | Notes* | THIS YEAR'S DATA ddh 1mm | Height 1cm* | DBH 1 cm | Re-sprout | Vigor* | Damage* | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1138 | Quercus phellos | b | R | 0.6 | 0.4 | 4 | 52.0 | | ☐ | 7 | 56 | – | ☐ | 2 | | |
| 1139 | Betula nigra | c | R | 2.9 | 0.4 | 21 | 188.0 | 0.5 | ☐ | – | 340 | 2.4 | ☐ | 4 | | |
| 1140 | Alnus serrulata | h | R | 5.6 | 0.7 | 6 | 30.0 | | ☐ | 6 | 35 | – | ☐ | 2 | | |
| 1141 | Platanus occidentalis | k | R | 9.0 | 0.3 | 8 | 87.0 | | ☐ | 9 | 94 | – | ☐ | 2 | | |
| 1142 | Quercus phellos | e | R | 2.5 | 1.8 | 3 | 30.0 | | ☐ | 4 | 32 | – | ☐ | 2 | | |
| 1143 | Alnus serrulata | j | R | 6.8 | 5.1 | 7 | 37.0 | | ☐ | 7 | 67 | – | ☐ | 2 | Deer | |
| 1144 | Quercus phellos | l | R | 9.1 | 6.5 | 7 | 53.0 | | ☐ | 8 | 53 | – | ☐ | 1 | | base injury |
| 1145 | Platanus occidentalis | i | R | 6.6 | 7.6 | 4 | 40.0 | | ☑ | 5 | 46 | – | X | 1 | | * |
| 1146 | Quercus phellos | f | R | 4.3 | 6.3 | 10 | 77.0 | | ☐ | 10 | 83 | – | ☐ | 2 | | |
| 1147 | Quercus phellos | g | R | 4.4 | 9.4 | 10 | 63.0 | | ☐ | 13 | 108 | – | ☐ | 3 | | |
| 1315 | Quercus michauxii | a | R | 0.1 | 2.8 | 7 | 26.0 | | ☐ | 9 | 88 | – | ☐ | 2 | | |
| 390 | Diospyros virginiana | d | R | 2.5 | 4.4 | 7 | 92.0 | | ☐ | 9 | 121 | – | ☐ | 3 | | |

*# stems:* 12 — New Stems, not included last year, but are obviously planted. If more space needed, use blank PWS (Planted Woody Stems) Form:

| Species Name | Source* | X (m) | Y (m) | ddh 1 mm | Height 1 cm* | DBH 1 cm | Vigor* | Damage* | Notes |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

***Notes by ID:** 1145-top dead

*SOURCE: Tr=Transplant, L=Live stake, B=Ball and burlap, P=Potted, Tu=Tubling, R=bare Root, M=Mechanically, U=Unknown



*VIGOR: 4=excellent, 3=good, 2=fair, 1=unlikely to survive year, 0=dead, M=missing.

*DAMAGE: REMoval, CUT, MOWing, BEAVer, DEER, RODents, INSects, GAME, LIVESTock, Other/Unknown ANIMal, Human TRAMpled, Site Too WET, Site Too DRY, FLOOD, DROUght, STORM, HURRicane, DISeased, VINE Strangulation, UNKNown, specify other.

*HEIGHT PRECISION drops to 10cm if >2.5m and 50cm if >4m.

| Plot (continued): E92347-01-0011 | | | | | Sep 2011 Data | | | Notes* | THIS YEAR'S DATA | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ID | Species | map char | source | X (m) | Y (m) | ddh (mm) | Height (cm) | DBH (cm) | | ddh (mm) | Height (cm) | DBH (cm) | Re-sprout | Vigor* | Damage* | Notes |

## Natural Woody Stems - tallied by species

Explanation of cut-off & subsampling**:

**Height Cut-Off** (All stems shorter than this are ignored. If >10cm, explain why to the right.): ☐ 10cm ☐ 50cm ☐ 100cm ☐ 137cm

| Species Name | ☑ c | SEEDLINGS — HEIGHT CLASSES | | | | SAPLINGS — DBH | | | TREES — DBH | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Sub-Seed | 10 cm-50 cm | 50 cm-100 cm | 100 cm-137 cm | Sub-Sapl | 0-1 cm | 1-2.5 | 2.5- | 5- | =10 (write DBH) |
| Symphor orbic | | ___ | : | L | . | ___ | | | | | |
| Frax pen | | ___ | ☒ | ☒ | : | ___ | | | | | |
| Ulmus amer | | ___ | : | | | ___ | | | | | |
| | | ___ | | | | ___ | | | | | |
| | | ___ | | | | ___ | | | | | |
| | | ___ | | | | ___ | | | | | |
| | | ___ | | | | ___ | | | | | |

**Required if cut-off >10cm or subsample ? 100%. ●1 ●2 ●3 ●4 ●5 ●6 ●7 ●8 ●9 ●10 Form WS2, ver 9.1

*SOURCE: Tr=Transplant, L=Live stake, B=Ball and burlap, P=Potted, Tu=Tubling, R=bare Root, M=Mechanically, U=Unknown



*VIGOR: 4=excellent, 3=good, 2=fair, 1=unlikely to survive year, 0=dead, M=missing.

*DAMAGE: REMoval, CUT, MOWing, BEAVer, DEER, RODents, INSects, GAME, LIVESTock, Other/Unknown ANIMal, Human TRAMpled, Site Too WET, Site Too DRY, FLOOD, DROUght, STORM, HURRicane, DISeased, VINE Strangulation, UNKNown, specify other.

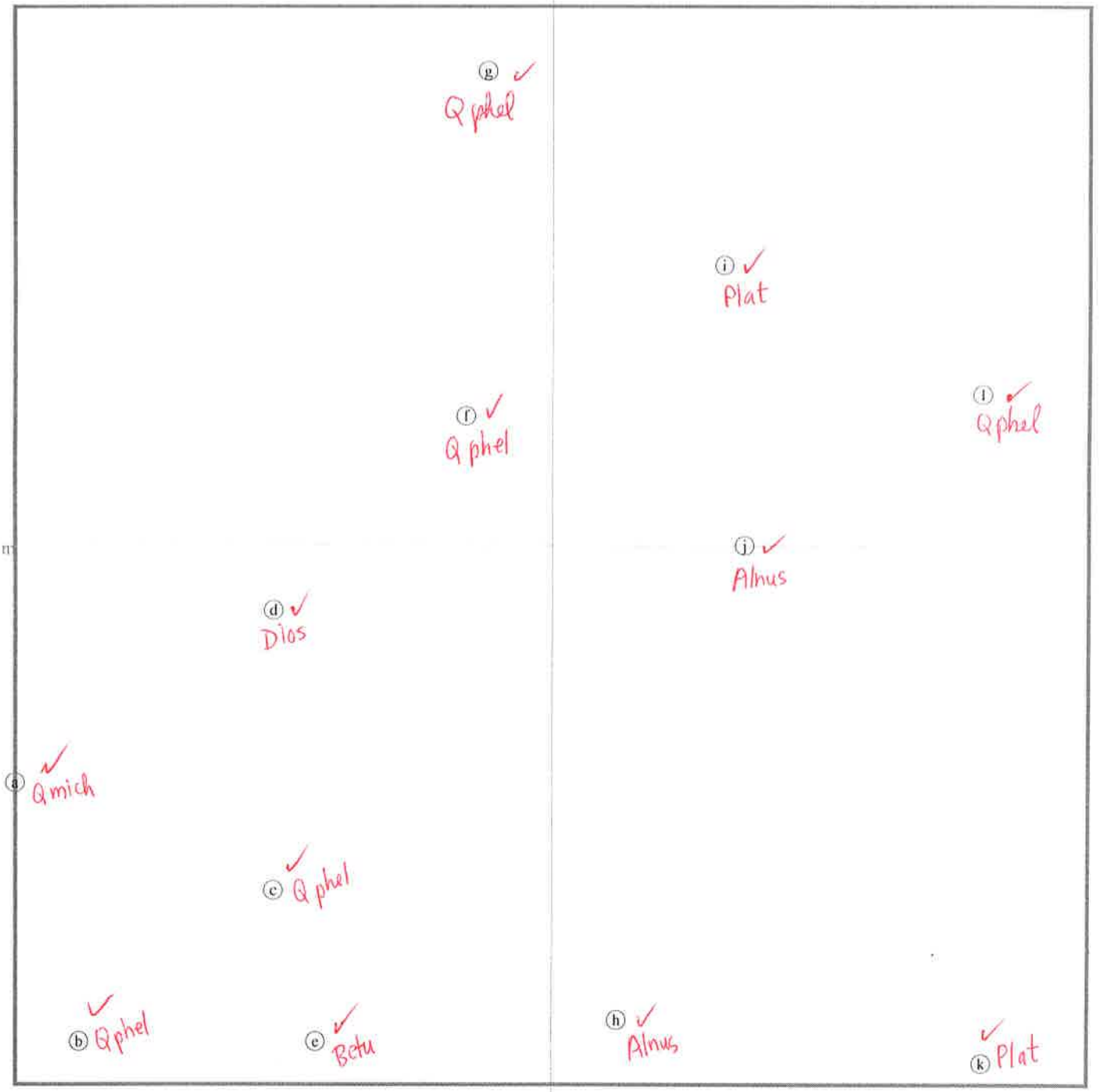
*HEIGHT PRECISION drops to 10cm if >2.5m and 50cm if >4m.

## Map of stems on plot E92347-01-0011

X-axis: 315°

*# stems: 12*
*map size: LARGE*

N




*SOURCE: Tr=Transplant, L=Live stake, B=Ball and burlap, P=Potted, Tu=Tubling, R=bare Root, M=Mechanically, U=Unknown



*VIGOR: 4=excellent, 3=good, 2=fair, 1=unlikely to survive year, 0=dead, M=missing.

*DAMAGE: REMoval, CUT, MOWing, BEAVer, DEER, RODents, INSects, GAME, LIVESTock, Other/Unknown ANIMal, Human TRAMpled, Site Too WET, Site Too DRY, FLOOD, DROUght, STORM, HURRicane, DISeased, VINE Strangulation, UNKNown, specify other.

*HEIGHT PRECISION drops to 10cm if >2.5m and 50cm if >4m.

**Plot E92347-01-0012** — Please fill in any missing data and fix incorrect data. — **Vegetation Monitoring Data (VMD) Datasheet**

VMD Year (1-5): 3 Date: 12 / Sep / 2012 - / /

Party: GB Pottern Role:

Notes on plot:

Taxonomic Standard:

Taxonomic Standard DATE:

Latitude or UTM-N: (dec.deg. or m) 1883256 Datum: NAD83/W

Longitude or UTM-E: 675306 UTM Zone: ne

Coordinate Accuracy (m): 1 X-Axis bearing (deg): 100

Plot Dimensions: X: 10 Y: 10 ☐ Plot has reverse orientation for X and Y axis (Y is 90 degrees to the right of X

| ID | Species Name | Map char | Source* | X 0.1m | Y 0.1m | Sep 2011 Data ddh 1 mm | Height 1cm* | DBH 1 cm | Notes* | THIS YEAR'S DATA ddh 1mm | Height 1cm* | DBH 1 cm | Re-sprout | Vigor* | Damage* | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1148 | Betula nigra | a | R | 0.3 | 0.2 | 8 | 109.0 | DBH? | ☐ | — | 213 | 0.6 | | 4 | | |
| 1149 | Aesculus sylvatica | m | R | 9.7 | 0.7 | 7 | 40.0 | | ☐ | 10 | 47 | — | | 1 | bark | Buds, No Leaf |
| 1150 | Platanus occidentalis | i | R | 4.5 | 2.1 | 17 | 165.0 | 0.6 | ☐ | — | 280 | 2.3 | | 4 | | |
| 1151 | Fraxinus pennsylvanica | o | R | 9.8 | 3.9 | 11 | 81.0 | | ☐ | — | 162 | 0.8 | | 4 | | |
| 1152 | Quercus phellos | n | R | 9.6 | 4.8 | 5 | 70.0 | | ☐ | 5 | 96 | — | | 3 | | |
| 1153 | Diospyros virginiana | j | R | 6.0 | 5.1 | 11 | 125.0 | DBH? | ☐ | — | 188 | 0.9 | | 4 | | |
| 1154 | Fraxinus pennsylvanica | e | R | 1.0 | 5.3 | 12 | 99.0 | | ☐ | — | 186 | 0.8 | | 4 | | |
| 1155 | Fraxinus pennsylvanica | b | R | 0.6 | 2.1 | 8 | 73.0 | | ☐ | 15 | 143 | 0.4 | | 4 | | |
| 1316 | Quercus michauxii | d | R | 1.4 | 2.3 | 9 | 69.0 | | ☐ | 12 | 102 | — | | 2 | shrivel'd | diseased |
| 1317 | Fraxinus pennsylvanica | c | R | 2.5 | 1.3 | 12 | 105.0 | DBH? | ☐ | [redacted] | 189 | 1.2 | | 4 | | |
| 1318 | Fraxinus pennsylvanica | g | R | 4.0 | 1.0 | 7 | 70.0 | | ☐ | 12 | 103 | — | | 3 | Deer | |
| 1319 | Fraxinus pennsylvanica | l | R | 9.0 | 0.5 | 10 | 104.0 | DBH? | ☐ | / | 192 | 0.8 | | 4 | | |
| 1320 | Fraxinus pennsylvanica | f | R | 3.5 | 3.6 | 12 | 106.0 | DBH? | ☐ | — | 169 | 0.8 | | 4 | | |
| 1321 | Fraxinus pennsylvanica | h | R | 4.0 | 8.0 | 9 | 68.0 | | ☐ | 11 | 92 | — | | 4 | | |
| 429 | Quercus phellos | k | R | 8.0 | 8.0 | 9 | 60.0 | | ☐ | 13 | 103 | — | | 4 | | |

*# stems:* 15

New Stems, not included last year, but are obviously planted. If more space needed, use blank PWS (Planted Woody Stems) Form:

| Species Name | Source* | X (m) | Y (m) | ddh 1 mm | Height 1 cm* | DBH 1 cm | Vigor* | Damage* | Notes |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

Dense, tall Solidago, Eupator, Verbesna ~2m+

*SOURCE: Tr=Transplant, L=Live stake, B=Ball and burlap, P=Potted, Tu=Tubling, R=bare Root, M=Mechanically, U=Unknown



*VIGOR: 4=excellent, 3=good, 2=fair, 1=unlikely to survive year, 0=dead, M=missing.

*DAMAGE: REMoval, CUT, MOWing, BEAVer, DEER, RODents, INSects, GAME, LIVESTock, Other/Unknown ANIMal, Human TRAMpled, Site Too WET, Site Too DRY, FLOOD, DROUght, STORM, HURRicane, DISeased, VINE Strangulation, UNKNown, specify other.

*HEIGHT PRECISION drops to 10cm if >2.5m and 50cm if >4m.

**Plot (continued): E92347-01-0012**

| ID | Species | map char | source | X (m) | Y (m) | Sep 2011 Data: ddh (mm) | Height (cm) | DBH (cm) | Notes* | THIS YEAR'S DATA: ddh (mm) | Height (cm) | DBH (cm) | Re-sprout | Vigor* | Damage* | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

## Natural Woody Stems - tallied by species

Explanation of cut-off & subsampling**: Dense weeds up to 1.0 meter

**Height Cut-Off** (All stems shorter than this are ignored. If >10cm, explain why to the right.): ☐ 10cm ☒ 50cm ☒ 100cm ☐ 137cm

| Species Name | ☑ c | SEEDLINGS — HEIGHT CLASSES: Sub-Seed | 10 cm-50 cm | 50 cm-100 cm | 100 cm-137 cm | SAPLINGS — DBH: Sub-Sapl | 0-1 cm | 1-2.5 | TREES — DBH: 2.5- | 5- | =10 (write DBH) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Frax pennsylvan | | ___ | ☒ : | ☒ ☒ : | ☐ | ___ | : | | | | |
| Symphor orbic | | ___ | ☒ : | : | : | ___ | | | | | |
| | | ___ | | | | ___ | | | | | |
| | | ___ | | | | ___ | | | | | |
| | | ___ | | | | ___ | | | | | |
| | | ___ | | | | ___ | | | | | |
| | | ___ | | | | ___ | | | | | |

**Required if cut-off >10cm or subsample ? 100%.

●1 ●2 ●3 ●4 ●5 ●6 ●7 ●8 ●9 ●10

Form WS2, ver 9.1

*SOURCE: Tr=Transplant, L=Live stake, B=Ball and burlap, P=Potted, Tu=Tubling, R=bare Root, M=Mechanically, U=Unknown



*VIGOR: 4=excellent, 3=good, 2=fair, 1=unlikely to survive year, 0=dead, M=missing.

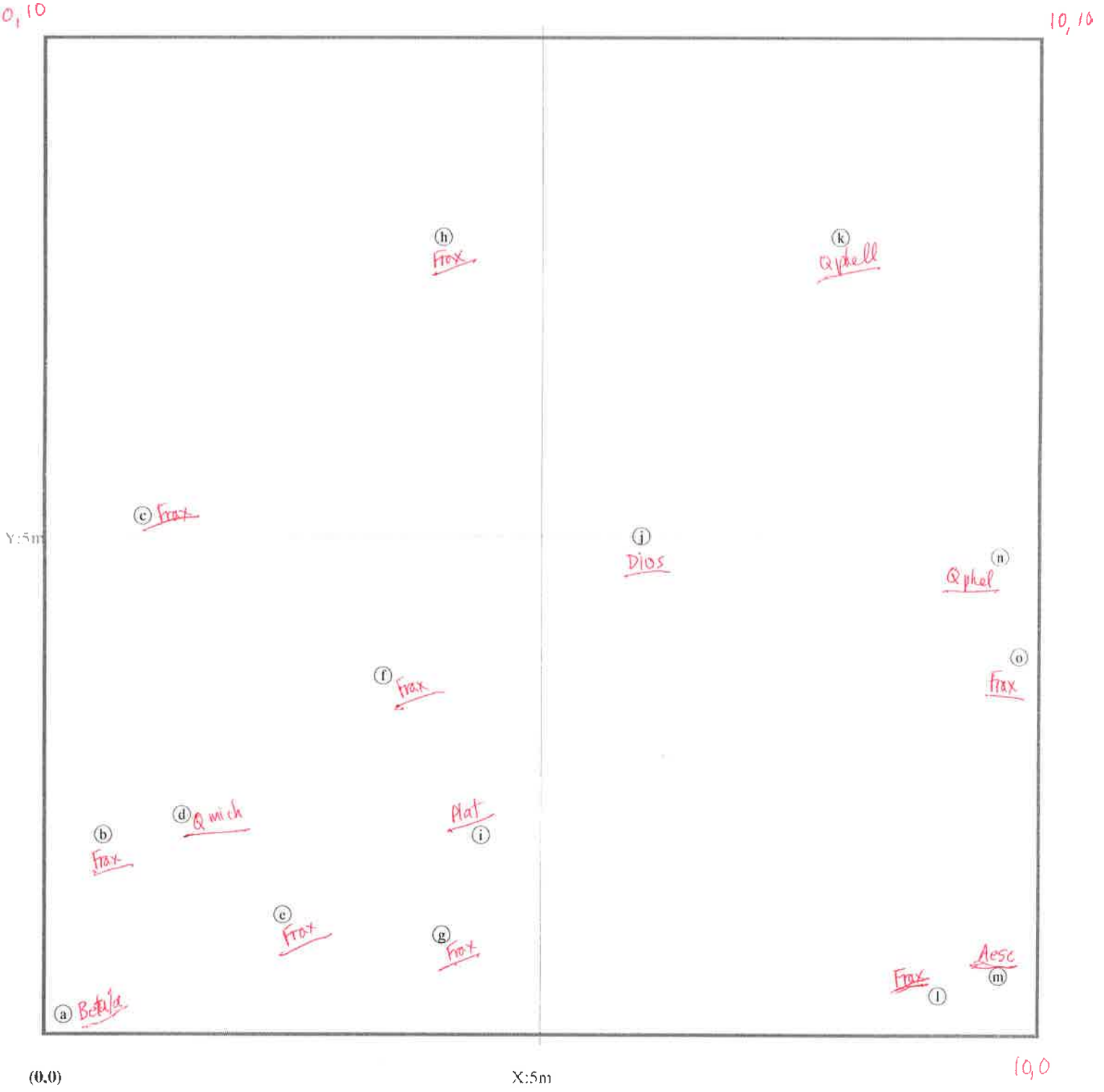
*DAMAGE: REMoval, CUT, MOWing, BEAVer, DEER, RODents, INSects, GAME, LIVESTock, Other/Unknown ANIMal, Human TRAMpled, Site Too WET, Site Too DRY, FLOOD, DROUght, STORM, HURRicane, DISeased, VINE Strangulation, UNKNown, specify other.

*HEIGHT PRECISION drops to 10cm if >2.5m and 50cm if >4m.

## Map of stems on plot E92347-01-0012

X-axis: 100° N

*# stems: 15*
*map size: LARGE*




*SOURCE: Tr=Transplant, L=Live stake, B=Ball and burlap, P=Potted, Tu=Tubling, R=bare Root, M=Mechanically, U=Unknown



*VIGOR: 4=excellent, 3=good, 2=fair, 1=unlikely to survive year, 0=dead, M=missing.

*DAMAGE: REMoval, CUT, MOWing, BEAVer, DEER, RODents, INSects, GAME, LIVESTock, Other/Unknown ANIMal, Human TRAMpled, Site Too WET, Site Too DRY, FLOOD, DROUght, STORM, HURRicane, DISeased, VINE Strangulation, UNKNown, specify other.

*HEIGHT PRECISION drops to 10cm if >2.5m and 50cm if >4m.

*Printed in the CVS-EEP Entry Tool ver. 2.2.7*

## Appendix D. Stream Morphology Survey Data

| | |
|---|---|
| Figures 5.0-5.8 | Cross sections with Annual Overlays |
| e-Tables | Raw cross-section survey data spreadsheets |
| Figures 6.0-6.4 | Longitudinal Profiles with Annual Overlays |
| e-Tables | Raw longitudinal profile survey spreadsheet |
| Figures 7.0-7.8 | Pebble Count Plots with Annual Overlays |
| e-Tables | Raw pebble count data spreadsheets |
| Tables 10.0-10.1 | Baseline Stream Data Summary Table |
| Table 11.0 | Cross-Section Morphology Data Table |
| Table 11.1-11.2 | Stream Reach Morphology Data Table |

Figure 5.0 Cross Section Plots and Photos - Monitoring Year Two - 2011 - UT to Bear Creek Stream Restoration (#92347)

| | |
|---|---|
| **River Basin:** | Cape Fear |
| **Watershed:** | UT to Bear Creek |
| **XS ID** | XS 1 (riffle) |
| **Reach:** | Northern |
| **Date:** | 9/15/2012 |
| **Field Crew:** | G.P. and J.B. |

| Station | Rod Ht. | Elevation | Notes |
|---|---|---|---|
| 0 | 5.12 | 100.00 | on |
| 0 | 5.2 | 99.92 | off |
| 3.5 | 5.86 | 99.26 | |
| 6.5 | 6.02 | 99.10 | |
| 10 | 6.07 | 99.05 | |
| 12.4 | 6.18 | 98.94 | |
| 14.3 | 6.83 | 98.29 | |
| 16 | 7.31 | 97.81 | |
| 16.6 | 7.88 | 97.24 | |
| 18 | 8.16 | 96.96 | |
| 19 | 8.04 | 97.08 | |
| 20.5 | 7.83 | 97.29 | |
| 22.3 | 7.93 | 97.19 | |
| 24 | 7.82 | 97.30 | |
| 25.5 | 7.61 | 97.51 | |
| 26.6 | 7.14 | 97.98 | |
| 28.5 | 6.6 | 98.52 | |
| 30.2 | 6.04 | 99.08 | |
| 33 | 6.05 | 99.07 | |
| 35.5 | 6.24 | 98.88 | |
| 38.5 | 6.06 | 99.06 | |
| 42.3 | 6.21 | 98.91 | |
| 45.4 | 6.22 | 98.90 | |
| 48.5 | 6.17 | 98.95 | |
| 52 | 5.99 | 99.13 | |
| 55.5 | 5.88 | 99.24 | |
| 58.9 | 5.36 | 99.76 | off |
| 58.9 | 5.24 | 99.88 | on |

SUMMARY DATA

| | |
|---|---|
| Bankfull Width (ft) | 20.1 |
| Floodprone Width (ft) | 100.0 |
| Bankfull Mean Depth (ft) | 1.2 |
| Bankfull Max Depth (ft) | 2.1 |
| Bankfull Area ($ft^2$) | 23.3 |
| Width/Depth Ratio | 17.4 |
| Entrenchment Ratio | 5.0 |
| Bank Height Ratio | 1.0 |
| Cross Sectional Area | 71.1 |
| Wetted Perimeter (ft) | 20.84 |
| Hydraulic Radius (ft) | 1.12 |

Stream Type: C

View of cross-section XS-1 looking downstream

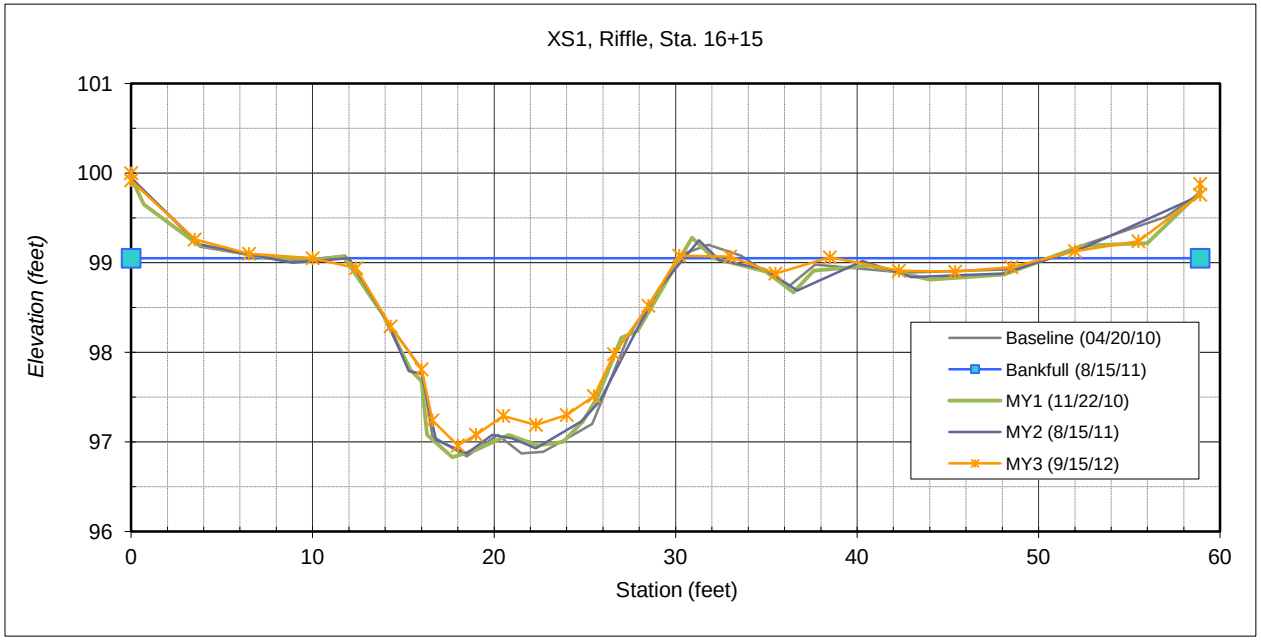


Figure 5.1 Cross Section Plots and Photos - Monitoring Year Two - 2011 - UT to Bear Creek Stream Restoration (#92347)

| | |
|---|---|
| **River Basin:** | Cape Fear |
| **Watershed:** | UT to Bear Creek |
| **XS ID** | XS 2 (riffle) |
| **Reach:** | Northern |
| **Date:** | 9/16/2012 |
| **Field Crew:** | GP and JB |

| Station | Rod Ht. | Elevation | Notes |
|---|---|---|---|
| 0 | 4.24 | 100 | on |
| 0 | 4.32 | 99.92 | off |
| 2 | 4.78 | 99.46 | |
| 5 | 5.17 | 99.07 | |
| 9 | 5.64 | 98.6 | |
| 13 | 5.73 | 98.51 | |
| 14.5 | 5.36 | 98.88 | |
| 16.6 | 5.33 | 98.91 | |
| 19 | 6.22 | 98.02 | |
| 21 | 6.82 | 97.42 | |
| 22.5 | 7.12 | 97.12 | |
| 25 | 7.25 | 96.99 | |
| 26.5 | 7.25 | 96.99 | |
| 28.5 | 7.36 | 96.88 | |
| 30.2 | 7.15 | 97.09 | |
| 32 | 6.34 | 97.9 | |
| 34.5 | 5.62 | 98.62 | |
| 38 | 5.48 | 98.76 | |
| 42 | 5.59 | 98.65 | |
| 46 | 5.4 | 98.84 | |
| 49 | 4.81 | 99.43 | |
| 53.1 | 3.94 | 100.3 | off |
| 53.1 | 3.89 | 100.35 | on |

SUMMARY DATA

| | |
|---|---|
| Bankfull Width (ft) | 20.7 |
| Floodprone Width (ft) | 100.0 |
| Bankfull Mean Depth (ft) | 1.1 |
| Bankfull Max Depth (ft) | 1.8 |
| Bankfull Area ($ft^2$) | 21.7 |
| Width/Depth Ratio | 19.8 |
| Entrenchment Ratio | 4.8 |
| Bank Height Ratio | 1.0 |
| Cross Sectional Area | 76.9 |
| Wetted Perimeter (ft) | 21.51 |
| Hydraulic Radius (ft) | 1.01 |

| | |
|---|---|
| Stream Type: | C |

View of cross-section XS-2 looking downstream

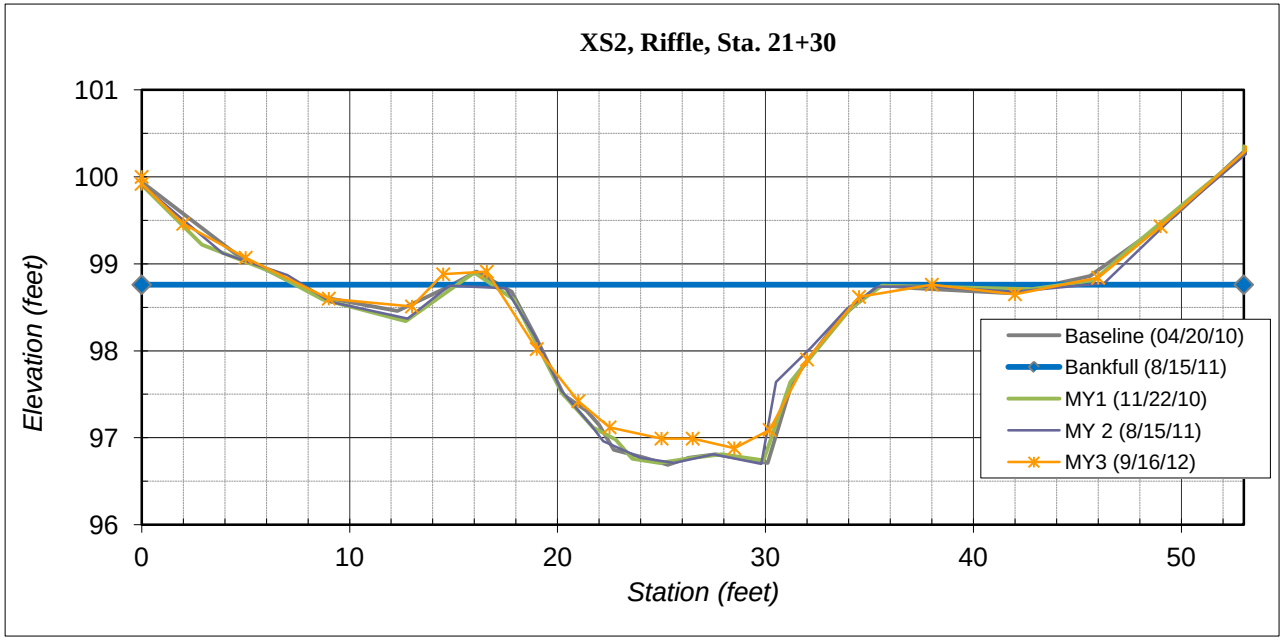


Figure 5.2 Cross Section Plots and Photos - Monitoring Year Two - 2011 - UT to Bear Creek Stream Restoration (#92347)

| | |
|---|---|
| **River Basin:** | Cape Fear |
| **Watershed:** | UT to Bear Creek |
| **XS ID** | XS 3 (pool) |
| **Reach:** | Northern |
| **Date:** | 9/16/2012 |
| **Field Crew:** | GP and JB |

| Station | Rod Ht. | Elevation | Notes |
|---|---|---|---|
| 0 | 5.84 | 100 | on |
| 0 | 5.94 | 99.9 | off |
| 6.9 | 6.31 | 99.53 | |
| 10.7 | 6.54 | 99.3 | |
| 15.4 | 6.5 | 99.34 | |
| 18.9 | 6.51 | 99.33 | |
| 20.8 | 6.48 | 99.36 | |
| 22.2 | 7.08 | 98.76 | |
| 24.6 | 7.73 | 98.11 | |
| 25.1 | 9.66 | 96.18 | |
| 28.1 | 10.24 | 95.6 | |
| 30 | 10.44 | 95.4 | |
| 32.5 | 10.28 | 95.56 | |
| 34.2 | 9.88 | 95.96 | |
| 36.2 | 9.45 | 96.39 | |
| 36.8 | 7.26 | 98.58 | |
| 39.5 | 6.5 | 99.34 | |
| 41.8 | 6.42 | 99.42 | |
| 47.9 | 6.36 | 99.48 | |
| 53.7 | 6.34 | 99.5 | |
| 58.2 | 6.28 | 99.56 | |
| 61.8 | 6.45 | 99.39 | |
| 70.7 | 6.12 | 99.72 | |
| 78.8 | 5.36 | 100.48 | on |
| 78.8 | 5.24 | 100.6 | off |

SUMMARY DATA

| | |
|---|---|
| Bankfull Width (ft) | 20.1 |
| Floodprone Width (ft) | 100.0 |
| Bankfull Mean Depth (ft) | 2.3 |
| Bankfull Max Depth (ft) | 4.0 |
| Bankfull Area ($ft^2$) | 45.9 |
| Width/Depth Ratio | 8.8 |
| Entrenchment Ratio | 5.0 |
| Bank Height Ratio | 1.0 |
| Cross Sectional Area | 84.2 |
| Wetted Perimeter (ft) | 23.73 |
| Hydraulic Radius (ft) | 1.93 |

| | |
|---|---|
| Stream Type: | E |

View of cross-section XS-3 looking downstream

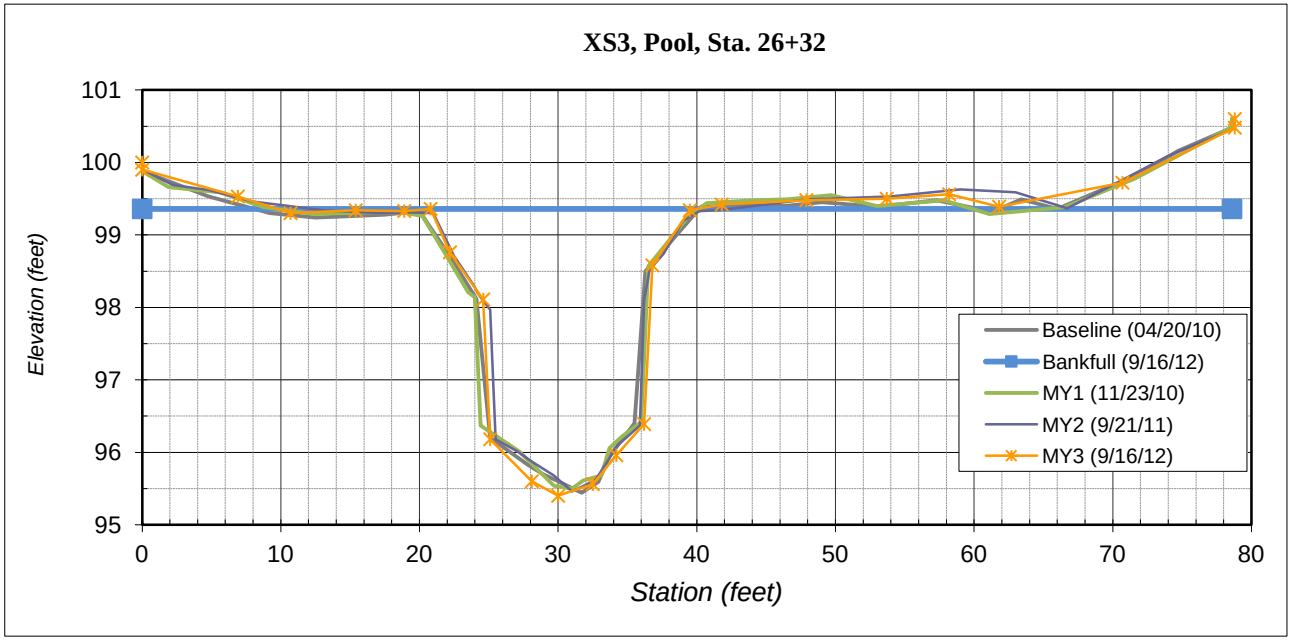


Figure 5.3 Cross Section Plots and Photos - Monitoring Year Two - 2011 - UT to Bear Creek Stream Restoration (#92347)

| | |
|---|---|
| **River Basin:** | Cape Fear |
| **Watershed:** | UT to Bear Creek |
| **XS ID** | XS 4 (riffle) |
| **Reach:** | Northern |
| **Date:** | 9/16/2012 |
| **Field Crew:** | GP and JB |

| Station | Rod Ht. | Elevation | Notes |
|---|---|---|---|
| 0 | 5.19 | 100 | on |
| 0 | 5.3 | 99.89 | off |
| 2.5 | 5.44 | 99.75 | |
| 7 | 5.4 | 99.79 | |
| 12 | 5.43 | 99.76 | |
| 16 | 5.71 | 99.48 | |
| 20 | 5.82 | 99.37 | |
| 22.5 | 5.64 | 99.55 | |
| 24 | 5.55 | 99.64 | |
| 25.5 | 6.08 | 99.11 | |
| 27.4 | 6.91 | 98.28 | |
| 28.5 | 7.49 | 97.7 | |
| 30.1 | 7.67 | 97.52 | |
| 31.8 | 7.74 | 97.45 | |
| 33.3 | 7.68 | 97.51 | |
| 35 | 7.49 | 97.7 | |
| 36.8 | 7.6 | 97.59 | |
| 38 | 7.01 | 98.18 | |
| 40 | 6.4 | 98.79 | |
| 42.5 | 5.64 | 99.55 | |
| 45 | 5.44 | 99.75 | |
| 49 | 5.41 | 99.78 | |
| 53 | 5.6 | 99.59 | |
| 57 | 5.42 | 99.77 | |
| 61 | 5.43 | 99.76 | |
| 69 | 5.06 | 100.13 | off |
| 69 | 5 | 100.19 | on |

SUMMARY DATA

| | |
|---|---|
| Bankfull Width (ft) | 19.6 |
| Floodprone Width (ft) | 100.0 |
| Bankfull Mean Depth (ft) | 1.4 |
| Bankfull Max Depth (ft) | 2.2 |
| Bankfull Area ($ft^2$) | 26.9 |
| Width/Depth Ratio | 14.3 |
| Entrenchment Ratio | 5.1 |
| Bank Height Ratio | 1.0 |
| Cross Sectional Area | 50.4 |
| Wetted Perimeter (ft) | 20.4 |
| Hydraulic Radius (ft) | 1.32 |

| | |
|---|---|
| Stream Type: | C |

View of cross-section XS-4 looking downstream

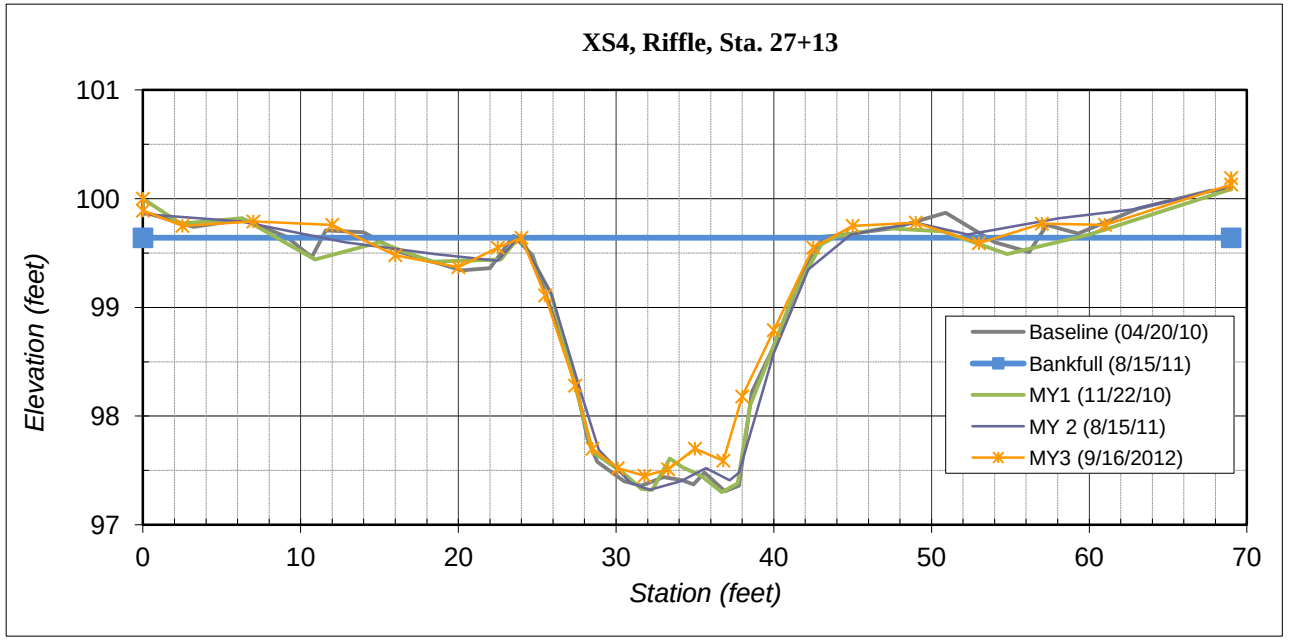


Figure 5.4 Cross Section Plots and Photos - Monitoring Year Two - 2011 - UT to Bear Creek Stream Restoration (#92347)

| | |
|---|---|
| **River Basin:** | Cape Fear |
| **Watershed:** | UT to Bear Creek |
| **XS ID** | XS 5 (pool) |
| **Reach:** | Northern |
| **Date:** | 9/16/2012 |
| **Field Crew:** | GP and JB |

| Station | Rod Ht. | Elevation | Notes |
|---|---|---|---|
| 0 | 4.99 | 100 | on |
| 0 | 5.01 | 99.98 | off |
| 2.7 | 5.47 | 99.52 | |
| 7.9 | 5.36 | 99.63 | |
| 12.5 | 5.52 | 99.47 | |
| 17.1 | 5.99 | 99 | |
| 19.6 | 6.2 | 98.79 | |
| 21.5 | 7.05 | 97.94 | |
| 23.2 | 7.43 | 97.56 | |
| 23.5 | 8.8 | 96.19 | |
| 26.1 | 9.27 | 95.72 | |
| 27.3 | 9.5 | 95.49 | |
| 29.9 | 8.9 | 96.09 | |
| 31.1 | 7.01 | 97.98 | |
| 34.2 | 6.39 | 98.6 | |
| 37.2 | 5.98 | 99.01 | |
| 40.5 | 5.8 | 99.19 | |
| 46.6 | 5.61 | 99.38 | |
| 53 | 5.19 | 99.8 | off |
| 53 | 5.08 | 99.91 | on |

SUMMARY DATA

| | |
|---|---|
| Bankfull Width (ft) | 25.3 |
| Floodprone Width (ft) | 220.0 |
| Bankfull Mean Depth (ft) | 1.4 |
| Bankfull Max Depth (ft) | 3.7 |
| Bankfull Area ($ft^2$) | 34.0 |
| Width/Depth Ratio | 18.8 |
| Entrenchment Ratio | 8.7 |
| Bank Height Ratio | 1.0 |
| Cross Sectional Area | 61.9 |
| Wetted Perimeter (ft) | 27.87 |
| Hydraulic Radius (ft) | 1.22 |

| | |
|---|---|
| Stream Type: | C |

View of cross-section XS-5 looking downstream

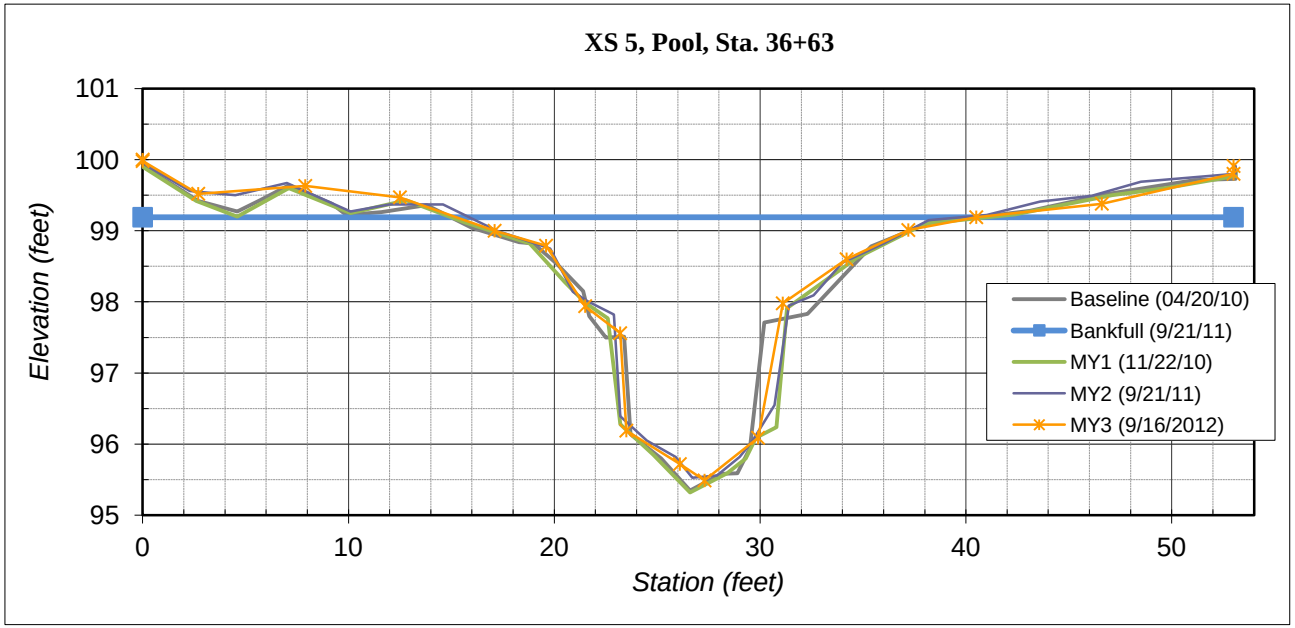


Figure 5.5 Cross Section Plots and Photos - Monitoring Year Two - 2011 - UT to Bear Creek Stream Restoration (#92347)

| | |
|---|---|
| **River Basin:** | Cape Fear |
| **Watershed:** | UT to Bear Creek |
| **XS ID** | XS 6 (riffle) |
| **Reach:** | Northern |
| **Date:** | 9/16/2012 |
| **Field Crew:** | GP and JB |

| Station | Rod Ht. | Elevation | Notes |
|---|---|---|---|
| 0 | 5.43 | 100 | on |
| 0 | 5.56 | 99.87 | off |
| 5 | 5.35 | 100.08 | |
| 10 | 5.65 | 99.78 | |
| 15 | 5.7 | 99.73 | |
| 20 | 5.76 | 99.67 | |
| 23 | 6.1 | 99.33 | |
| 24.7 | 6.79 | 98.64 | |
| 26 | 7.2 | 98.23 | |
| 27.7 | 7.5 | 97.93 | |
| 28.6 | 7.65 | 97.78 | |
| 30.4 | 7.34 | 98.09 | |
| 32.5 | 7.39 | 98.04 | |
| 33.8 | 7.28 | 98.15 | |
| 35 | 7.08 | 98.35 | |
| 36.3 | 7.21 | 98.22 | |
| 37.5 | 6.95 | 98.48 | |
| 39.2 | 6.14 | 99.29 | |
| 41.6 | 5.5 | 99.93 | |
| 44.5 | 5.39 | 100.04 | |
| 48 | 5.48 | 99.95 | |
| 52 | 5.54 | 99.89 | |
| 60.4 | 5.01 | 100.42 | off |
| 60.4 | 4.89 | 100.54 | on |

SUMMARY DATA

| | |
|---|---|
| Bankfull Width (ft) | 20.6 |
| Floodprone Width (ft) | 220.0 |
| Bankfull Mean Depth (ft) | 1.1 |
| Bankfull Max Depth (ft) | 1.9 |
| Bankfull Area ($ft^2$) | 22.9 |
| Width/Depth Ratio | 18.6 |
| Entrenchment Ratio | 10.7 |
| Bank Height Ratio | 1.0 |
| Cross Sectional Area | 33.2 |
| Wetted Perimeter (ft) | 21.2 |
| Hydraulic Radius (ft) | 1.08 |

| | |
|---|---|
| Stream Type: | C |

View of cross-section XS-6 looking downstream

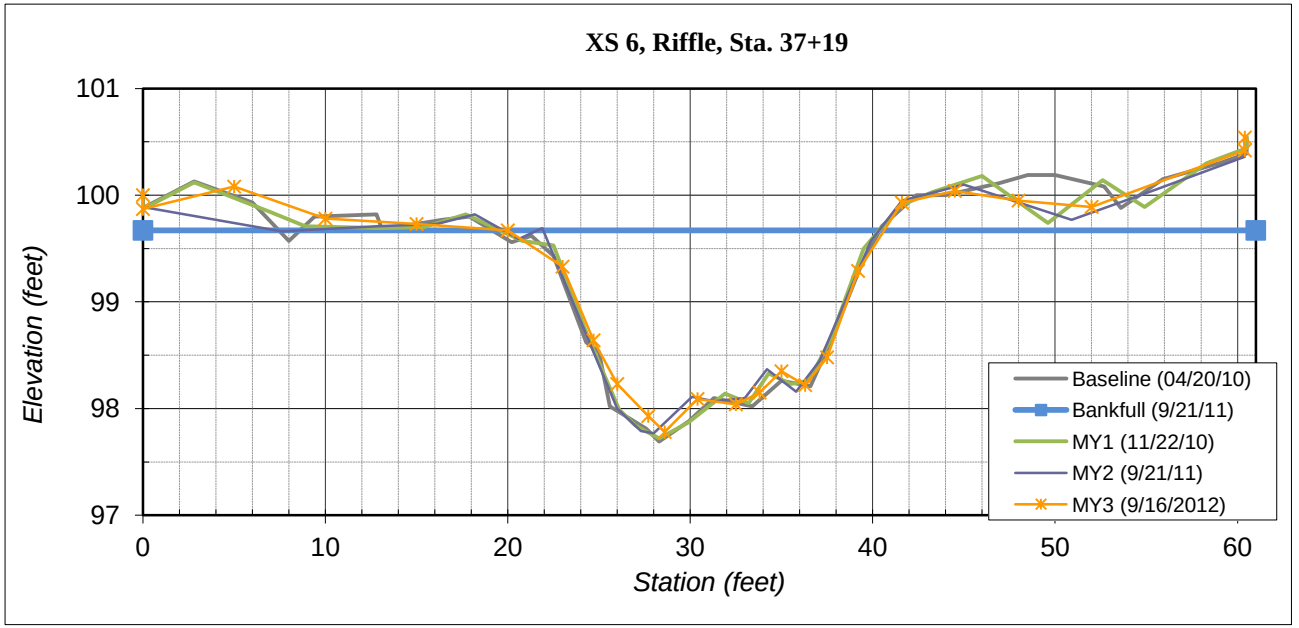


Figure 5.6 Cross Section Plots and Photos - Monitoring Year Two - 2011 - UT to Bear Creek Stream Restoration (#92347)

| | |
|---|---|
| **River Basin:** | Cape Fear |
| **Watershed:** | UT to Bear Creek |
| **XS ID** | XS 7 (riffle) |
| **Reach:** | Southern |
| **Date:** | 9/15/2012 |
| **Field Crew:** | GP and JB |

| Station | Rod Ht. | Elevation | Notes |
|---|---|---|---|
| 0 | 6.75 | 100.00 | on |
| 0 | 6.88 | 99.87 | off |
| 4 | 6.85 | 99.90 | |
| 11 | 7.01 | 99.74 | |
| 14 | 6.93 | 99.82 | |
| 16.7 | 6.96 | 99.79 | |
| 17.7 | 6.94 | 99.81 | |
| 18.85 | 7.27 | 99.48 | |
| 19.85 | 7.66 | 99.09 | |
| 20.8 | 8.34 | 98.41 | |
| 21.6 | 8.41 | 98.34 | |
| 22.4 | 8.37 | 98.38 | |
| 23.1 | 7.75 | 99.00 | |
| 24.7 | 7.36 | 99.39 | |
| 26.2 | 6.98 | 99.77 | |
| 29 | 6.89 | 99.86 | |
| 34 | 7.02 | 99.73 | |
| 38 | 7.01 | 99.74 | |
| 41 | 6.76 | 99.99 | |
| 45.5 | 6.51 | 100.24 | off |
| 45.5 | 6.4 | 100.35 | on |

SUMMARY DATA

| | |
|---|---|
| Bankfull Width (ft) | 10.4 |
| Floodprone Width (ft) | 100.0 |
| Bankfull Mean Depth (ft) | 0.6 |
| Bankfull Max Depth (ft) | 1.5 |
| Bankfull Area ($ft^2$) | 6.2 |
| Width/Depth Ratio | 17.7 |
| Entrenchment Ratio | 9.6 |
| Bank Height Ratio | 1.0 |
| Cross Sectional Area | 13.5 |
| Wetted Perimeter (ft) | 11.13 |
| Hydraulic Radius (ft) | 0.55 |

| | |
|---|---|
| Stream Type: | C |

View of cross-section XS-7 looking downstream

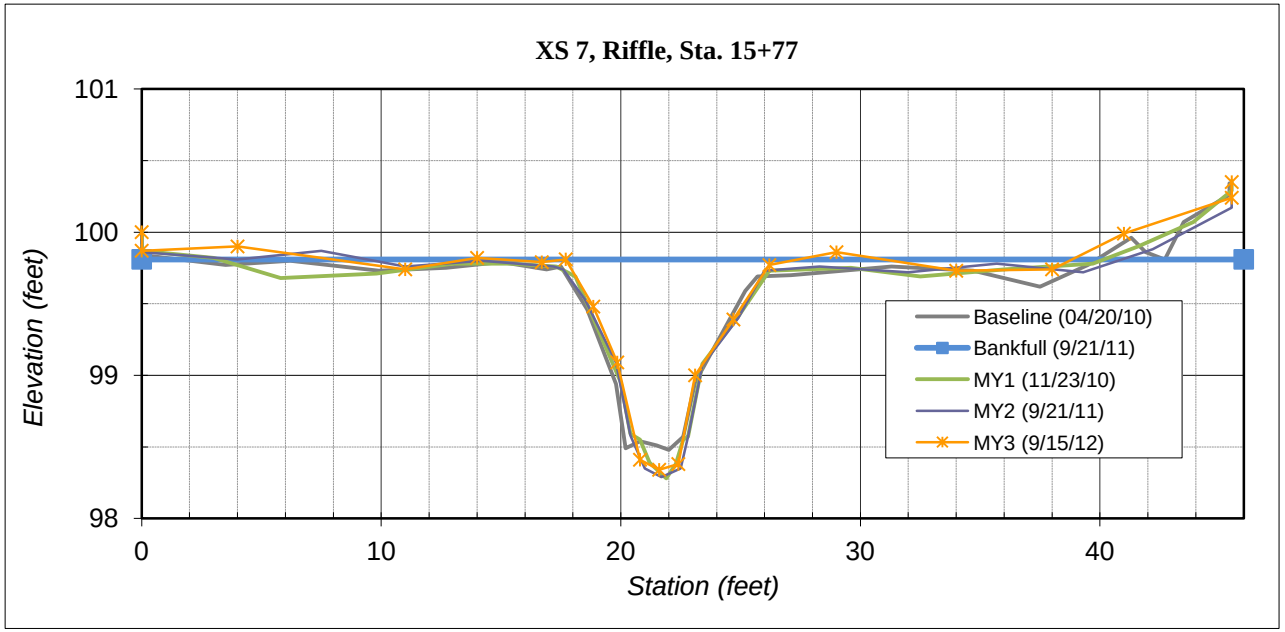


Figure 5.7 Cross Section Plots and Photos - Monitoring Year Two - 2011 - UT to Bear Creek Stream Restoration (#92347)

| | |
|---|---|
| **River Basin:** | Cape Fear |
| **Watershed:** | UT to Bear Creek |
| **XS ID** | XS 8 (riffle) |
| **Reach:** | Southern |
| **Date:** | 9/15/2012 |
| **Field Crew:** | GP and JB |

| Station | Rod Ht. | Elevation | Notes |
|---|---|---|---|
| 0 | 4.12 | 100.00 | on |
| 0 | 4.25 | 99.87 | off |
| 4.1 | 4.74 | 99.38 | |
| 7.5 | 5.42 | 98.70 | |
| 11.6 | 5.75 | 98.37 | |
| 13 | 5.81 | 98.31 | |
| 15.1 | 6.63 | 97.49 | |
| 15.9 | 7.22 | 96.90 | |
| 17 | 7.23 | 96.89 | |
| 18.4 | 7.04 | 97.08 | |
| 19.6 | 6.55 | 97.57 | |
| 21.5 | 5.82 | 98.30 | |
| 23 | 5.78 | 98.34 | |
| 28.9 | 5.58 | 98.54 | |
| 31 | 5.62 | 98.50 | |
| 34 | 5.38 | 98.74 | |
| 37 | 5.35 | 98.77 | |
| 41.6 | 5.28 | 98.84 | off |
| 41.6 | 5.09 | 99.03 | on |

SUMMARY DATA

| | |
|---|---|
| Bankfull Width (ft) | 8.5 |
| Floodprone Width (ft) | 50.0 |
| Bankfull Mean Depth (ft) | 0.8 |
| Bankfull Max Depth (ft) | 1.4 |
| Bankfull Area ($ft^2$) | 7.0 |
| Width/Depth Ratio | 10.3 |
| Entrenchment Ratio | 5.9 |
| Bank Height Ratio | 1.0 |
| Cross Sectional Area | 26.2 |
| Wetted Perimeter (ft) | 9.07 |
| Hydraulic Radius (ft) | 0.77 |

| | |
|---|---|
| Stream Type: | E |

View of cross-section XS-8 looking downstream

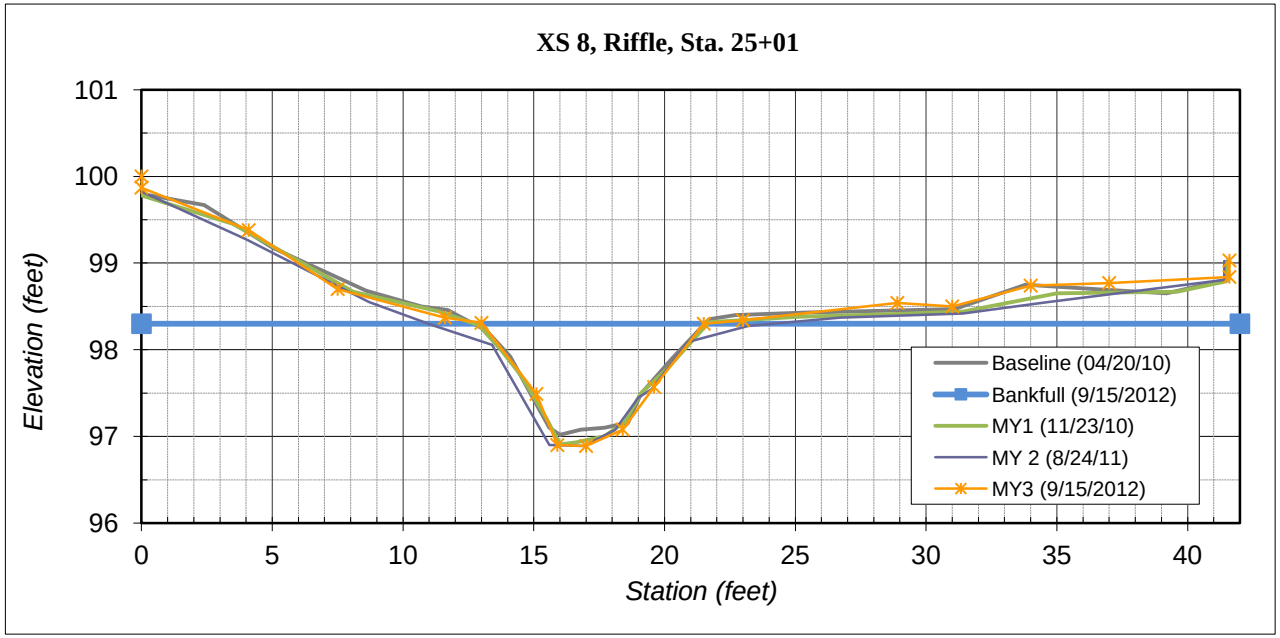


Figure 5.8 Cross Section Plots and Photos - Monitoring Year Two - 2011 - UT to Bear Creek Stream Restoration (#92347)

| | |
|---|---|
| **River Basin:** | Cape Fear |
| **Watershed:** | UT to Bear Creek |
| **XS ID** | XS 9 (pool) |
| **Reach:** | Northern |
| **Date:** | 9/15/2012 |
| **Field Crew:** | GP and JB |

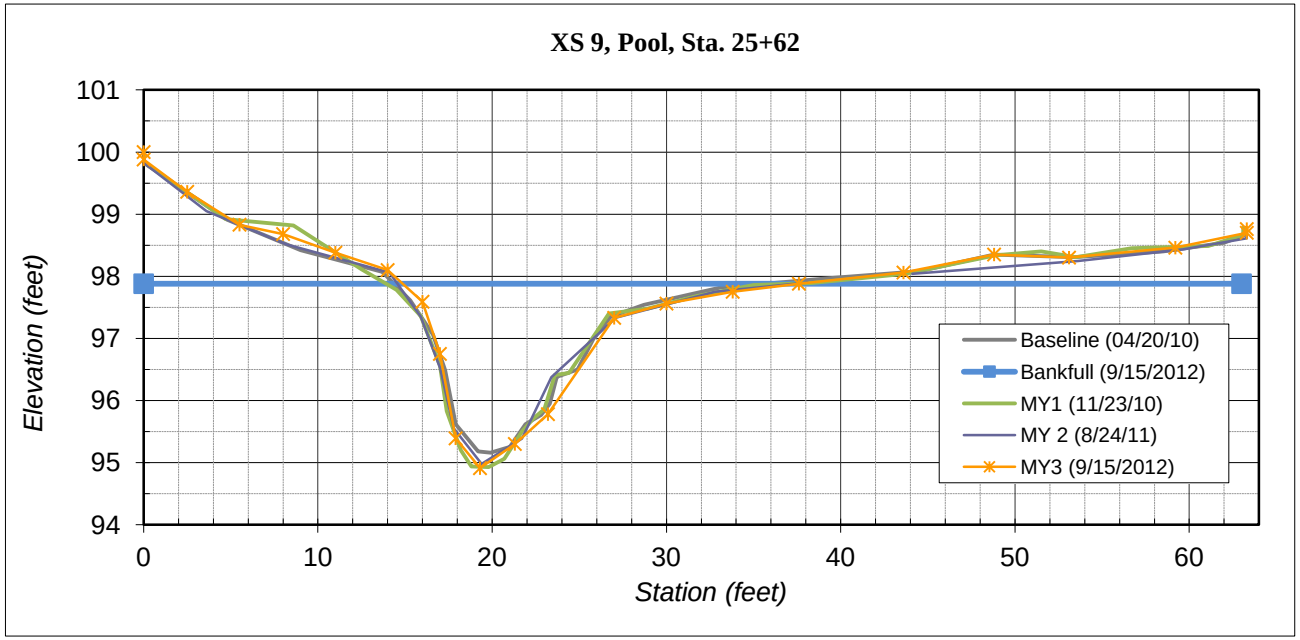
| Station | Rod Ht. | Elevation | Notes |
|---|---|---|---|
| 0 | 4.11 | 100.00 | on |
| 0 | 4.23 | 99.88 | off |
| 2.5 | 4.75 | 99.36 | |
| 5.5 | 5.28 | 98.83 | |
| 8 | 5.43 | 98.68 | |
| 11 | 5.73 | 98.38 | |
| 14 | 6.01 | 98.10 | |
| 16 | 6.52 | 97.59 | |
| 17 | 7.36 | 96.75 | |
| 17.9 | 8.72 | 95.39 | |
| 19.3 | 9.2 | 94.91 | |
| 21.3 | 8.81 | 95.30 | |
| 23.2 | 8.33 | 95.78 | |
| 27 | 6.78 | 97.33 | |
| 30 | 6.55 | 97.56 | |
| 33.8 | 6.36 | 97.75 | |
| 37.6 | 6.23 | 97.88 | |
| 43.6 | 6.05 | 98.06 | |
| 48.8 | 5.76 | 98.35 | |
| 53.1 | 5.81 | 98.3 | |
| 59.2 | 5.65 | 98.46 | |
| 63.3 | 5.41 | 98.7 | off |
| 63.3 | 5.35 | 98.76 | on |

SUMMARY DATA

| | |
|---|---|
| Bankfull Width (ft) | 22.7 |
| Floodprone Width (ft) | 50.0 |
| Bankfull Mean Depth (ft) | 1.1 |
| Bankfull Max Depth (ft) | 3.0 |
| Bankfull Area ($ft^2$) | 23.8 |
| Width/Depth Ratio | 21.8 |
| Entrenchment Ratio | 2.2 |
| Bank Height Ratio | 1.0 |
| Cross Sectional Area | 59.3 |
| Wetted Perimeter (ft) | 24.31 |
| Hydraulic Radius (ft) | 1.0 |

| | |
|---|---|
| Stream Type: | B |

View of cross-section XS-9 looking downstream



## e-Table. Raw Cross Section Survey Data Spreadsheets

**Cross Section:** 1
**Monitoring Year:** Baseline **Date:** 4/20/2010
**Feature:** Riffle

| Station | Rod Ht. | Elevation | Notes |
|---|---|---|---|
| 0 | 4.59 | 100.05 | |
| 0 | 4.64 | 100.00 | |
| 3.8 | 5.41 | 99.23 | |
| 8.7 | 5.58 | 99.06 | |
| 11.8 | 5.51 | 99.13 | TOB/BKF |
| 14.3 | 6.3 | 98.34 | |
| 16 | 6.78 | 97.86 | |
| 16.6 | 7.53 | 97.11 | |
| 18.5 | 7.75 | 96.89 | TW |
| 20.2 | 7.51 | 97.13 | |
| 21.5 | 7.72 | 96.92 | |
| 22.7 | 7.7 | 96.94 | |
| 24.2 | 7.53 | 97.11 | |
| 25.4 | 7.39 | 97.25 | |
| 27.4 | 6.41 | 98.23 | |
| 30.3 | 5.5 | 99.14 | |
| 31.8 | 5.39 | 99.25 | TOB/BKF |
| 33.6 | 5.51 | 99.13 | |
| 36.2 | 5.86 | 98.78 | |
| 37.7 | 5.61 | 99.03 | |
| 42.6 | 5.7 | 98.94 | |
| 48.9 | 5.66 | 98.98 | |
| 52.5 | 5.39 | 99.25 | |
| 57 | 5.08 | 99.56 | |
| 58.9 | 4.81 | 99.83 | |
| 58.9 | 4.68 | 99.96 | |

**Cross Section:** 2
**Monitoring Year:** Baseline **Date:** 4/20/2010
**Feature:** Riffle

| Station | Rod Ht. | Elevation | Notes |
|---|---|---|---|
| 0 | 4.15 | 100.06 | |
| 0 | 4.21 | 100.00 | |
| 4.6 | 5.05 | 99.16 | |
| 8.6 | 5.53 | 98.68 | |
| 12.3 | 5.69 | 98.52 | |
| 14.7 | 5.42 | 98.79 | |
| 16.1 | 5.24 | 98.97 | TOB/BKF |
| 17.8 | 5.47 | 98.74 | |
| 19 | 6.01 | 98.20 | |
| 20.3 | 6.66 | 97.55 | |
| 21.4 | 6.84 | 97.37 | |
| 22 | 7 | 97.21 | on rock |
| 22.7 | 7.29 | 96.92 | |
| 24.2 | 7.38 | 96.83 | |
| 25.3 | 7.46 | 96.75 | TW |
| 26.3 | 7.38 | 96.83 | |
| 27.6 | 7.34 | 96.87 | |
| 29.3 | 7.41 | 96.80 | |
| 30.1 | 7.44 | 96.77 | |
| 31.3 | 6.49 | 97.72 | |
| 33.6 | 5.77 | 98.44 | |
| 35.5 | 5.39 | 98.82 | TOB/BKF |
| 37.2 | 5.43 | 98.78 | |
| 41.9 | 5.49 | 98.72 | |
| 45.6 | 5.29 | 98.92 | |
| 49.7 | 4.59 | 99.62 | |
| 53 | 3.86 | 100.35 | |
| 53 | 3.8 | 100.41 | |

**Cross Section:** 3
**Monitoring Year:** Baseline **Date:** 4/20/2010
**Feature:** Pool

| Station | Rod Ht. | Elevation | Notes |
|---|---|---|---|
| 0 | 4.91 | 100.12 | |
| 0 | 5.03 | 100.00 | |
| 4.8 | 5.38 | 99.65 | |
| 9.2 | 5.61 | 99.42 | |
| 12.5 | 5.67 | 99.36 | |
| 17.5 | 5.63 | 99.40 | |
| 20 | 5.58 | 99.45 | TOB/BKF |
| 22 | 6.15 | 98.88 | |
| 24.1 | 6.79 | 98.24 | |
| 25.1 | 8.71 | 96.32 | |
| 27.8 | 9.08 | 95.95 | |
| 28.9 | 9.21 | 95.82 | |
| 29.8 | 9.29 | 95.74 | |
| 31.7 | 9.47 | 95.56 | TW |
| 32.9 | 9.32 | 95.71 | |
| 33.7 | 8.96 | 96.07 | |
| 35.5 | 8.51 | 96.52 | |

| Station | Rod Ht. | Elevation | Notes |
|---|---|---|---|
| 36.3 | 6.41 | 98.62 | |
| 37 | 6.25 | 98.78 | |
| 40.3 | 5.52 | 99.51 | TOB/BKF |
| 44.4 | 5.5 | 99.53 | |
| 46.3 | 5.51 | 99.52 | |
| 49 | 5.46 | 99.57 | |
| 53.1 | 5.52 | 99.51 | |
| 57.3 | 5.43 | 99.60 | |
| 61.3 | 5.59 | 99.44 | |
| 63.4 | 5.42 | 99.61 | |
| 66 | 5.55 | 99.48 | |
| 72 | 5.06 | 99.97 | |
| 74.7 | 4.75 | 100.28 | |
| 78.6 | 4.43 | 100.6 | |
| 78.6 | 4.3 | 100.73 | |

**Cross Section:** 4
**Monitoring Year:** Baseline **Date:** 4/20/2010
**Feature:** Riffle

| Station | Rod Ht. | Elevation | Notes |
|---|---|---|---|
| 0 | 5.29 | 100.12 | |
| 0 | 5.41 | 100.00 | |
| 3.2 | 5.55 | 99.86 | |
| 6.4 | 5.48 | 99.93 | |
| 9.1 | 5.64 | 99.77 | |
| 10.7 | 5.83 | 99.58 | |
| 11.6 | 5.58 | 99.83 | |
| 14 | 5.6 | 99.81 | |
| 16.3 | 5.78 | 99.63 | |
| 18.2 | 5.86 | 99.55 | |
| 20.2 | 5.95 | 99.46 | |
| 22 | 5.93 | 99.48 | |
| 23.5 | 5.63 | 99.78 | TOB/BKF |
| 24.7 | 5.81 | 99.60 | |
| 27.4 | 6.96 | 98.45 | |
| 28.2 | 7.5 | 97.91 | |
| 28.8 | 7.71 | 97.70 | |
| 30.5 | 7.89 | 97.52 | |
| 31.6 | 7.93 | 97.48 | |
| 33 | 7.85 | 97.56 | |
| 34.2 | 7.88 | 97.53 | |
| 34.9 | 7.92 | 97.49 | |
| 35.6 | 7.81 | 97.60 | |
| 36.9 | 7.98 | 97.43 | TW |
| 37.8 | 7.93 | 97.48 | |
| 38.6 | 7.07 | 98.34 | |
| 39.9 | 6.68 | 98.73 | |
| 42 | 5.92 | 99.49 | |
| 43.1 | 5.64 | 99.77 | |
| 43.8 | 5.63 | 99.78 | TOB/BKF |
| 45.6 | 5.6 | 99.81 | |
| 47.6 | 5.56 | 99.85 | |
| 50.9 | 5.42 | 99.99 | |
| 54 | 5.69 | 99.72 | |
| 56.2 | 5.78 | 99.63 | |
| 57.3 | 5.53 | 99.88 | |
| 59.3 | 5.61 | 99.8 | |
| 63.1 | 5.38 | 100.03 | |
| 67.6 | 5.22 | 100.19 | |
| 69 | 5.2 | 100.21 | |
| 69 | 5.11 | 100.3 | |

**Cross Section:** 5
**Monitoring Year:** Baseline **Date:** 4/20/2010
**Feature:** Pool

| Station | Rod Ht. | Elevation | Notes |
|---|---|---|---|
| 0 | 4.75 | 100.08 | |
| 0 | 4.83 | 100.00 | |
| 2.7 | 5.33 | 99.50 | |
| 4.6 | 5.48 | 99.35 | |
| 5.7 | 5.32 | 99.51 | |
| 7.1 | 5.11 | 99.72 | |
| 9.2 | 5.37 | 99.46 | |
| 9.9 | 5.53 | 99.30 | |
| 11.6 | 5.49 | 99.34 | |
| 13.8 | 5.39 | 99.44 | |
| 16 | 5.71 | 99.12 | |
| 18.3 | 5.91 | 98.92 | |
| 19 | 5.93 | 98.90 | TOB/BKF |
| 20.1 | 6.21 | 98.62 | |
| 21.4 | 6.6 | 98.23 | |
| 21.7 | 6.95 | 97.88 | |
| 22.5 | 7.25 | 97.58 | |
| 23.4 | 7.24 | 97.59 | |
| 23.7 | 8.61 | 96.22 | |
| 25.2 | 8.95 | 95.88 | |
| 26.6 | 9.4 | 95.43 | TW |
| 28.1 | 9.17 | 95.66 | |
| 28.9 | 9.16 | 95.67 | |
| 29.5 | 8.81 | 96.02 | |
| 30.2 | 7.04 | 97.79 | |
| 32.3 | 6.92 | 97.91 | |
| 35.4 | 5.97 | 98.86 | |
| 38.3 | 5.63 | 99.2 | TOB/BKF |
| 40.3 | 5.57 | 99.26 | |
| 43.1 | 5.47 | 99.36 | |
| 46.9 | 5.23 | 99.6 | |
| 51.1 | 5.04 | 99.79 | |
| 53.1 | 5.02 | 99.81 | |
| 53.1 | 4.88 | 99.95 | |

**Cross Section:** 6
**Monitoring Year:** Baseline **Date:** 4/20/2010
**Feature:** Riffle

| Station | Rod Ht. | Elevation | Notes |
|---|---|---|---|
| 0 | 5.82 | 100.12 | |
| 0 | 5.94 | 100.00 | |
| 2.8 | 5.69 | 100.25 | |
| 6 | 5.89 | 100.05 | |
| 8 | 6.25 | 99.69 | |
| 9.4 | 6.02 | 99.92 | |
| 12.8 | 6 | 99.94 | |
| 13.1 | 6.14 | 99.80 | |
| 16.4 | 6.05 | 99.89 | |
| 17.9 | 6.02 | 99.92 | |
| 20.2 | 6.26 | 99.68 | |
| 21.3 | 6.2 | 99.74 | TOB/BKF |
| 22.5 | 6.39 | 99.55 | |
| 24.3 | 7.2 | 98.74 | |
| 25 | 7.29 | 98.65 | |
| 25.6 | 7.8 | 98.14 | |
| 27.6 | 8.01 | 97.93 | |
| 28.3 | 8.13 | 97.81 | |
| 29.9 | 7.94 | 98.00 | |
| 31.3 | 7.72 | 98.22 | |
| 33.4 | 7.8 | 98.14 | TW |
| 35 | 7.56 | 98.38 | |
| 36.6 | 7.61 | 98.33 | |
| 37.7 | 7.19 | 98.75 | |
| 39.3 | 6.51 | 99.43 | |
| 40.5 | 6.11 | 99.83 | |
| 42.4 | 5.82 | 100.12 | TOB/BKF |
| 44 | 5.82 | 100.12 | |
| 46.9 | 5.71 | 100.23 | |
| 48.5 | 5.63 | 100.31 | |
| 50 | 5.63 | 100.31 | |
| 52.7 | 5.74 | 100.2 | |
| 53.6 | 5.94 | 100 | |
| 55.9 | 5.67 | 100.27 | |
| 59 | 5.52 | 100.42 | |
| 60.5 | 5.43 | 100.51 | |
| 60.5 | 5.28 | 100.66 | |

**Cross Section:** 7
**Monitoring Year:** Baseline **Date:** 4/20/2010
**Feature:** Riffle

| Station | Rod Ht. | Elevation | Notes |
|---|---|---|---|
| 0 | 5.31 | 100.16 | |
| 0 | 5.47 | 100.00 | |
| 3.5 | 5.54 | 99.93 | |
| 6.2 | 5.51 | 99.96 | |
| 9.9 | 5.58 | 99.89 | |
| 12.7 | 5.56 | 99.91 | |
| 15 | 5.52 | 99.95 | |
| 16.9 | 5.57 | 99.90 | |
| 17.5 | 5.55 | 99.92 | TOB/BKF |
| 18.6 | 5.85 | 99.62 | |
| 19.8 | 6.37 | 99.10 | |
| 20.2 | 6.82 | 98.65 | |
| 20.8 | 6.77 | 98.70 | |
| 21.5 | 6.8 | 98.67 | |
| 22 | 6.83 | 98.64 | TWG |
| 22.6 | 6.74 | 98.73 | |
| 23.1 | 6.36 | 99.11 | |
| 25.2 | 5.72 | 99.75 | |
| 25.7 | 5.62 | 99.85 | TOB/BKF |
| 27.1 | 5.61 | 99.86 | |
| 31.3 | 5.55 | 99.92 | |
| 34.7 | 5.58 | 99.89 | |
| 37.5 | 5.69 | 99.78 | |
| 39.5 | 5.54 | 99.93 | |
| 41.3 | 5.35 | 100.12 | |
| 41.9 | 5.45 | 100.02 | |
| 42.7 | 5.5 | 99.97 | |
| 43.5 | 5.24 | 100.23 | |
| 45.4 | 5.05 | 100.42 | |
| 45.4 | 4.97 | 100.5 | |

**Cross Section:** 8
**Monitoring Year:** Baseline **Date:** 4/20/2010
**Feature:** Riffle

| Station | Rod Ht. | Elevation | Notes |
|---|---|---|---|
| 0 | 4.19 | 100.20 | |
| 0 | 4.39 | 100.00 | |
| 2.4 | 4.52 | 99.87 | |
| 5 | 5.01 | 99.38 | |
| 8.6 | 5.51 | 98.88 | |
| 10.7 | 5.69 | 98.70 | |
| 11.7 | 5.73 | 98.66 | BKF/TOB |
| 13.2 | 5.97 | 98.42 | |
| 14.1 | 6.27 | 98.12 | |
| 14.9 | 6.71 | 97.68 | |
| 15.6 | 7.09 | 97.30 | |
| 16 | 7.17 | 97.22 | TWG |
| 16.8 | 7.11 | 97.28 | |
| 17.7 | 7.09 | 97.30 | |
| 18.6 | 7.03 | 97.36 | |
| 19.1 | 6.7 | 97.69 | |
| 20.3 | 6.29 | 98.10 | |
| 21.7 | 5.84 | 98.55 | |
| 22.7 | 5.79 | 98.60 | BKF/TOB |
| 25.4 | 5.76 | 98.63 | |
| 28.6 | 5.74 | 98.65 | |
| 31.1 | 5.72 | 98.67 | |
| 33.8 | 5.44 | 98.95 | |
| 36.5 | 5.49 | 98.90 | |
| 39.2 | 5.54 | 98.85 | |
| 41.5 | 5.38 | 99.01 | |
| 41.5 | 5.17 | 99.22 | |

**Cross Section:** 9
**Monitoring Year:** Baseline **Date:** 4/20/2010
Feature: Pool

| Station | Rod Ht. | Elevation | Notes |
|---|---|---|---|
| 0 | 4.18 | 100.17 | |
| 0 | 4.35 | 100.00 | |
| 4.8 | 5.27 | 99.08 | |
| 9 | 5.76 | 98.59 | |
| 13.7 | 6.11 | 98.24 | BKF/TOB |
| 15.3 | 6.57 | 97.78 | |
| 16.6 | 7.12 | 97.23 | |
| 17.3 | 7.69 | 96.66 | |
| 17.9 | 8.56 | 95.79 | |
| 19.2 | 9 | 95.35 | TWG |
| 19.9 | 9.02 | 95.33 | |
| 21 | 8.93 | 95.42 | |
| 21.9 | 8.56 | 95.79 | |
| 22.8 | 8.41 | 95.94 | |
| 23.3 | 8.23 | 96.12 | |
| 23.7 | 7.8 | 96.55 | |
| 24.9 | 7.68 | 96.67 | |
| 25.8 | 7.19 | 97.16 | |
| 26.8 | 6.83 | 97.52 | |
| 28.7 | 6.64 | 97.71 | |
| 33.1 | 6.36 | 97.99 | BKF/TOB |
| 39.7 | 6.2 | 98.15 | |
| 44.5 | 6.1 | 98.25 | |
| 48.8 | 5.83 | 98.52 | |
| 53.4 | 5.87 | 98.48 | |
| 58.5 | 5.78 | 98.57 | |
| 62 | 5.64 | 98.71 | |
| 63.2 | 5.51 | 98.84 | |
| 63.2 | 5.4 | 98.95 | |

**Cross Section:** 1
**Monitoring Year:** MY1 **Date:** 11/22/2010
**Feature:** Riffle

| Station | Rod Ht. | Elevation | Notes |
|---|---|---|---|
| 0 | 4.56 | 100.21 | on |
| 0 | 4.61 | 100.16 | off |
| 0.7 | 4.91 | 99.86 | |
| 3.7 | 5.36 | 99.41 | |
| 7.3 | 5.5 | 99.27 | |
| 10.4 | 5.52 | 99.25 | |
| 11.7 | 5.49 | 99.28 | bkf |
| 13.9 | 6.15 | 98.62 | |
| 15.4 | 6.76 | 98.01 | |
| 16 | 6.88 | 97.89 | |
| 16.3 | 7.48 | 97.29 | |
| 17.7 | 7.73 | 97.04 | |
| 19 | 7.65 | 97.12 | |
| 20.8 | 7.48 | 97.29 | |
| 22.4 | 7.6 | 97.17 | |
| 23.8 | 7.56 | 97.21 | |
| 24.9 | 7.33 | 97.44 | |
| 25.7 | 7.06 | 97.71 | |
| 27 | 6.4 | 98.37 | |
| 27.9 | 6.32 | 98.45 | |
| 30.9 | 5.28 | 99.49 | |
| 32.1 | 5.51 | 99.26 | bkf |
| 35 | 5.66 | 99.11 | |
| 36.5 | 5.89 | 98.88 | |
| 37.6 | 5.65 | 99.12 | |
| 40.7 | 5.59 | 99.18 | |
| 44 | 5.75 | 99.02 | |
| 48.1 | 5.69 | 99.08 | |
| 52.4 | 5.37 | 99.40 | |
| 56 | 5.34 | 99.43 | |
| 58.9 | 4.77 | 100.00 | off |
| 58.9 | 4.68 | 100.09 | on |

**Cross Section:** 2
**Monitoring Year:** MY1 **Date:** 11/22/2010
**Feature:** Riffle

| Station | Rod Ht. | Elevation | Notes |
|---|---|---|---|
| 0 | 4.22 | 100.09 | pin |
| 0 | 4.31 | 100 | off |
| 2.9 | 5 | 99.31 | |
| 6.2 | 5.31 | 99 | |
| 8.7 | 5.63 | 98.68 | |
| 12.7 | 5.88 | 98.43 | |
| 16 | 5.32 | 98.99 | tob |
| 17.9 | 5.63 | 98.68 | |
| 20.2 | 6.7 | 97.61 | |
| 21.7 | 7.1 | 97.21 | |
| 22.8 | 7.24 | 97.07 | |
| 23.6 | 7.46 | 96.85 | |
| 24.9 | 7.51 | 96.8 | |
| 26.5 | 7.45 | 96.86 | |
| 27.9 | 7.41 | 96.9 | |
| 29.9 | 7.48 | 96.83 | |
| 31.2 | 6.58 | 97.73 | |
| 34.1 | 5.73 | 98.58 | |
| 35.6 | 5.47 | 98.84 | bkf |
| 38.9 | 5.49 | 98.82 | |
| 42.8 | 5.51 | 98.8 | |
| 45.8 | 5.41 | 98.9 | |
| 47.6 | 5.03 | 99.28 | |
| 50.7 | 4.41 | 99.9 | |
| 53 | 3.96 | 100.35 | |
| 53 | 3.87 | 100.44 | on |

**Cross Section:** 3
**Monitoring Year:** MY1 **Date:** 11/23/2010
**Feature:** Pool

| Station | Rod Ht. | Elevation | Notes |
|---|---|---|---|
| 0 | 5.93 | 100.12 | on |
| 0 | 6.05 | 100 | off |
| 1.9 | 6.27 | 99.78 | |
| 5.6 | 6.34 | 99.71 | |
| 8.8 | 6.55 | 99.5 | |
| 12.4 | 6.64 | 99.41 | |
| 16.1 | 6.62 | 99.43 | |
| 18.8 | 6.62 | 99.43 | bkf |
| 20.2 | 6.67 | 99.38 | |
| 21.9 | 7.2 | 98.85 | |
| 23.5 | 7.72 | 98.33 | |
| 24 | 7.79 | 98.26 | |
| 24.4 | 9.56 | 96.49 | |
| 27.2 | 9.92 | 96.13 | |
| 29.7 | 10.39 | 95.66 | |
| 31 | 10.43 | 95.62 | |
| 31.8 | 10.32 | 95.73 | |
| 33.1 | 10.25 | 95.8 | |
| 33.7 | 9.87 | 96.18 | |
| 34.6 | 9.71 | 96.34 | |
| 36 | 9.51 | 96.54 | |
| 36.5 | 7.36 | 98.69 | |
| 37.1 | 7.22 | 98.83 | |
| 39.3 | 6.7 | 99.35 | |
| 40.7 | 6.49 | 99.56 | bkf |
| 44.1 | 6.45 | 99.6 | |
| 46.5 | 6.44 | 99.61 | |
| 49.7 | 6.38 | 99.67 | |
| 53 | 6.53 | 99.52 | |
| 57.8 | 6.45 | 99.6 | |
| 61.1 | 6.64 | 99.41 | |
| 66.5 | 6.55 | 99.50 | |
| 71.6 | 6.15 | 99.90 | |
| 78.6 | 5.44 | 100.61 | off |
| 78.6 | 5.32 | 100.73 | |

**Cross Section:** 4
**Monitoring Year:** MY1 **Date:** 11/22/2010
**Feature:** Riffle

| Station | Rod Ht. | Elevation | Notes |
|---|---|---|---|
| 0 | 4.65 | 100 | on pin |
| 0 | 4.52 | 100.13 | off |
| 2.4 | 4.75 | 99.9 | |
| 6.3 | 4.7 | 99.95 | |
| 10.9 | 5.08 | 99.57 | |
| 15 | 4.92 | 99.73 | bkf |
| 18.3 | 5.1 | 99.55 | |
| 22.7 | 5.08 | 99.57 | |
| 23.9 | 4.86 | 99.79 | |
| 25.9 | 5.4 | 99.25 | |
| 28.5 | 6.85 | 97.8 | |
| 30.5 | 7.05 | 97.6 | |
| 31.6 | 7.19 | 97.46 | |
| 32.3 | 7.2 | 97.45 | |
| 33.4 | 6.91 | 97.74 | |
| 34.2 | 6.99 | 97.66 | |
| 35.4 | 7.07 | 97.58 | |
| 36.7 | 7.22 | 97.43 | |
| 37.7 | 7.14 | 97.51 | |
| 38.5 | 6.42 | 98.23 | |
| 39.8 | 5.95 | 98.7 | |
| 41.2 | 5.42 | 99.23 | |
| 43 | 4.94 | 99.71 | bkf |
| 43.9 | 4.87 | 99.78 | |
| 47 | 4.79 | 99.86 | |
| 50.7 | 4.82 | 99.83 | |
| 54.8 | 5.03 | 99.62 | |
| 60 | 4.85 | 99.8 | |
| 69 | 4.34 | 100.31 | off |
| 69 | 4.43 | 100.22 | on |

**Cross Section:** 5
**Monitoring Year:** MY1 **Date:** 11/22/2010
**Feature:** Pool

| Station | Rod Ht. | Elevation | Notes |
|---|---|---|---|
| 0 | 4.26 | 100.1 | pin-on |
| 0 | 4.36 | 100 | off |
| 2.6 | 4.84 | 99.52 | |
| 4.6 | 5.06 | 99.3 | |
| 7.1 | 4.66 | 99.7 | |
| 10.1 | 5.01 | 99.35 | |
| 12.8 | 4.83 | 99.53 | |
| 15.6 | 5.14 | 99.22 | |
| 18.8 | 5.44 | 98.92 | bkf |
| 20.5 | 5.98 | 98.38 | |
| 21.5 | 6.27 | 98.09 | |
| 22.6 | 6.49 | 97.87 | |
| 23 | 7.47 | 96.89 | |
| 23.2 | 7.98 | 96.38 | |
| 24.8 | 8.41 | 95.95 | |
| 26.6 | 8.94 | 95.42 | |
| 28.4 | 8.67 | 95.69 | |
| 29.3 | 8.46 | 95.9 | |
| 29.8 | 8.17 | 96.19 | |
| 30.8 | 8.02 | 96.34 | |
| 31.3 | 6.35 | 98.01 | |
| 34.7 | 5.64 | 98.72 | |
| 38 | 5.16 | 99.2 | bkf |
| 42.4 | 5.03 | 99.33 | |
| 47.1 | 4.76 | 99.6 | |
| 49.7 | 4.66 | 99.7 | |
| 53.1 | 4.49 | 99.87 | off |
| 53.1 | 4.39 | 99.97 | on |

**Cross Section:** 6
**Monitoring Year:** MY1 **Date:** 11/22/2010
**Feature:** Riffle

| Station | Rod Ht. | Elevation | Notes |
|---|---|---|---|
| 0 | 5.56 | 100.13 | on |
| 0 | 5.69 | 100 | off |
| 2.8 | 5.44 | 100.25 | |
| 7 | 5.72 | 99.97 | |
| 8.9 | 5.85 | 99.84 | |
| 13 | 5.87 | 99.82 | |
| 15.4 | 5.86 | 99.83 | |
| 17.7 | 5.74 | 99.95 | |
| 20.8 | 5.99 | 99.7 | bkf |
| 22.5 | 6.03 | 99.66 | |
| 24.4 | 6.89 | 98.8 | |
| 26.1 | 7.57 | 98.12 | |
| 27 | 7.72 | 97.97 | |
| 28.3 | 7.84 | 97.85 | |
| 29.9 | 7.69 | 98 | |
| 31.9 | 7.42 | 98.27 | |
| 33.2 | 7.51 | 98.18 | |
| 34.3 | 7.23 | 98.46 | |
| 35.5 | 7.33 | 98.36 | |
| 36.5 | 7.3 | 98.39 | |
| 37.7 | 6.91 | 98.78 | |
| 39.5 | 6.06 | 99.63 | |
| 41.5 | 5.66 | 100.03 | |
| 43.3 | 5.53 | 100.16 | bkf |
| 46 | 5.38 | 100.31 | |
| 49.6 | 5.82 | 99.87 | |
| 52.6 | 5.42 | 100.27 | |
| 54.9 | 5.67 | 100.02 | |
| 58.3 | 5.26 | 100.43 | |
| 60.5 | 5.12 | 100.57 | off |
| 60.5 | 5.01 | 100.68 | on |

**Cross Section:** 7
**Monitoring Year:** MY1 **Date:** 11/23/2010
**Feature:** Riffle

| Station | Rod Ht. | Elevation | Notes |
|---|---|---|---|
| 0 | 4.9 | 100.13 | on |
| 0 | 5.03 | 100.00 | off |
| 3 | 5.08 | 99.95 | |
| 5.8 | 5.22 | 99.81 | |
| 9.8 | 5.19 | 99.84 | |
| 13 | 5.12 | 99.91 | |
| 15.4 | 5.12 | 99.91 | bkf |
| 17.3 | 5.14 | 99.89 | |
| 18.1 | 5.21 | 99.82 | |
| 20 | 5.95 | 99.08 | |
| 20.4 | 6.31 | 98.72 | |
| 20.8 | 6.35 | 98.68 | |
| 21.2 | 6.51 | 98.52 | |
| 21.9 | 6.62 | 98.41 | |
| 22.3 | 6.52 | 98.51 | |
| 22.6 | 6.35 | 98.68 | |
| 22.8 | 6.33 | 98.70 | |
| 23.4 | 5.82 | 99.21 | |
| 24.9 | 5.49 | 99.54 | |
| 26.2 | 5.17 | 99.86 | |
| 29.6 | 5.15 | 99.88 | bkf |
| 32.5 | 5.21 | 99.82 | |
| 36 | 5.16 | 99.87 | |
| 39.7 | 5.12 | 99.91 | |
| 41.6 | 5 | 100.03 | |
| 43.9 | 4.83 | 100.20 | |
| 45.5 | 4.61 | 100.42 | off |
| 45.5 | 4.55 | 100.48 | on |

**Cross Section:** 8
**Monitoring Year:** MY1 **Date:** 11/23/2010
**Feature:** Riffle

| Station | Rod Ht. | Elevation | Notes |
|---|---|---|---|
| 0 | 7.53 | 100.22 | on |
| 0 | 7.75 | 100.00 | off |
| 3.5 | 8.08 | 99.67 | |
| 8.1 | 8.86 | 98.89 | |
| 11.4 | 9.09 | 98.66 | |
| 12.9 | 9.25 | 98.50 | |
| 13.8 | 9.55 | 98.20 | |
| 14.5 | 9.82 | 97.93 | |
| 14.9 | 10.02 | 97.73 | |
| 15.5 | 10.33 | 97.42 | |
| 16 | 10.62 | 97.13 | |
| 16.6 | 10.6 | 97.15 | |
| 17.7 | 10.53 | 97.22 | |
| 18.5 | 10.36 | 97.39 | |
| 19.1 | 10.03 | 97.72 | |
| 20.1 | 9.75 | 98.00 | |
| 21.7 | 9.21 | 98.54 | bkf |
| 25.2 | 9.15 | 98.60 | |
| 28.7 | 9.12 | 98.63 | |
| 31.4 | 9.09 | 98.66 | |
| 35 | 8.88 | 98.87 | |
| 39.6 | 8.86 | 98.89 | |
| 41.5 | 8.74 | 99.01 | off |
| 41.5 | 8.52 | 99.23 | on |

**Cross Section:** 9
**Monitoring Year:** MY1 **Date:** 11/23/2010
Feature: Pool

| Station | Rod Ht. | Elevation | Notes |
|---|---|---|---|
| 0 | 5.57 | 100.16 | off |
| 0 | 5.73 | 100 | on |
| 4.7 | 6.65 | 99.08 | |
| 8.6 | 6.75 | 98.98 | |
| 12.5 | 7.46 | 98.27 | |
| 14.5 | 7.79 | 97.94 | |
| 15.9 | 8.21 | 97.52 | |
| 17 | 9.01 | 96.72 | |
| 17.4 | 9.74 | 95.99 | |
| 18.2 | 10.37 | 95.36 | |
| 18.8 | 10.63 | 95.1 | |
| 19.8 | 10.64 | 95.09 | |
| 20.7 | 10.51 | 95.22 | |
| 21.7 | 10.07 | 95.66 | |
| 22.4 | 9.85 | 95.88 | |
| 23 | 9.71 | 96.02 | |
| 23.6 | 9.16 | 96.57 | |
| 24.4 | 9.13 | 96.6 | |

| Station | Rod Ht. | Elevation | Notes |
|---|---|---|---|
| 26.7 | 8.17 | 97.56 | |
| 28.9 | 8.09 | 97.64 | |
| 31.7 | 7.89 | 97.84 | |
| 35 | 7.71 | 98.02 | bkf |
| 38.3 | 7.68 | 98.05 | |
| 43.7 | 7.53 | 98.2 | |
| 48.9 | 7.23 | 98.5 | |
| 51.5 | 7.17 | 98.56 | |
| 53.5 | 7.26 | 98.47 | |
| 56.7 | 7.12 | 98.61 | |
| 61.1 | 7.08 | 98.65 | |
| 63.1 | 6.9 | 98.83 | off |

**Cross Section:** 1
**Monitoring Year:** MY2 **Date:**
**Feature:** Riffle

| Station | Rod Ht. | Elevation | Notes |
|---|---|---|---|
| 0 | 4.32 | 100.00 | |
| 0 | 4.38 | 99.94 | |
| 3.8 | 5.12 | 99.20 | |
| 8.9 | 5.32 | 99.00 | |
| 12 | 5.27 | 99.05 | bkf/tob |
| 14.1 | 5.97 | 98.35 | |
| 15.3 | 6.53 | 97.79 | |
| 16 | 6.56 | 97.76 | |
| 16.8 | 7.3 | 97.02 | |
| 18.5 | 7.45 | 96.87 | |
| 19.9 | 7.24 | 97.08 | |
| 21 | 7.28 | 97.04 | |
| 22.3 | 7.39 | 96.93 | |
| 24.8 | 7.09 | 97.23 | |
| 25.8 | 6.87 | 97.45 | |
| 27.8 | 6.09 | 98.23 | |
| 29.1 | 5.6 | 98.72 | |
| 31.3 | 5.07 | 99.25 | |
| 32.4 | 5.29 | 99.03 | |
| 34.9 | 5.39 | 98.93 | |
| 36.7 | 5.63 | 98.69 | |
| 40.3 | 5.3 | 99.02 | |
| 43 | 5.48 | 98.84 | |
| 48 | 5.44 | 98.88 | |
| 52.5 | 5.15 | 99.17 | |
| 58.9 | 4.57 | 99.75 | |
| 58.9 | 4.44 | 99.88 | |

**Cross Section:** 2
**Monitoring Year:** MY2 **Date:**
**Feature:** Riffle

| Station | Rod Ht. | Elevation | Notes |
|---|---|---|---|
| 0 | 3.84 | 100 | |
| 0 | 3.93 | 99.91 | |
| 3.9 | 4.72 | 99.12 | |
| 7 | 4.97 | 98.87 | |
| 9.1 | 5.28 | 98.56 | |
| 12.8 | 5.47 | 98.37 | |
| 14.8 | 5.09 | 98.75 | bkf |
| 17.5 | 5.12 | 98.72 | |
| 18.9 | 5.67 | 98.17 | |
| 20.2 | 6.3 | 97.54 | |
| 21.6 | 6.69 | 97.15 | |
| 22.2 | 6.88 | 96.96 | |
| 24 | 7.07 | 96.77 | |
| 25.6 | 7.13 | 96.71 | |
| 27.5 | 7.03 | 96.81 | |
| 29.8 | 7.14 | 96.7 | |
| 30.5 | 6.2 | 97.64 | |
| 32.2 | 5.8 | 98.04 | |
| 33.9 | 5.36 | 98.48 | |
| 35.4 | 5.1 | 98.74 | |
| 37.8 | 5.1 | 98.74 | |
| 42 | 5.16 | 98.68 | |
| 46.3 | 5.06 | 98.78 | |
| 50.1 | 4.19 | 99.65 | |
| 53.1 | 3.58 | 100.26 | |
| 53.1 | 3.51 | 100.33 | |

**Cross Section:** 3
**Monitoring Year:** MY2 **Date:**
**Feature:** Pool

| Station | Rod Ht. | Elevation | Notes |
|---|---|---|---|
| 0 | 4.35 | 100 | |
| 0 | 4.45 | 99.9 | |
| 2.2 | 4.66 | 99.69 | |
| 4.8 | 4.73 | 99.62 | |
| 8 | 4.89 | 99.46 | |
| 13 | 5.01 | 99.34 | |
| 17 | 5.05 | 99.3 | |
| 19.4 | 5.04 | 99.31 | |
| 21 | 5.05 | 99.3 | |
| 22.5 | 5.64 | 98.71 | |
| 23.9 | 6.04 | 98.31 | |
| 24.3 | 6.18 | 98.17 | |
| 25.1 | 6.38 | 97.97 | |
| 25.5 | 8.17 | 96.18 | |
| 27 | 8.33 | 96.02 | |
| 28.2 | 8.49 | 95.86 | |
| 29.7 | 8.67 | 95.68 | |
| 31 | 8.89 | 95.46 | |
| 32.7 | 8.73 | 95.62 | |
| 34.3 | 8.25 | 96.1 | |
| 35.9 | 7.98 | 96.37 | |
| 36.2 | 6.26 | 98.09 | |
| 36.6 | 5.83 | 98.52 | |
| 37.6 | 5.61 | 98.74 | |
| 39 | 5.16 | 99.19 | |
| 40.2 | 5.02 | 99.33 | |
| 42 | 5 | 99.35 | |
| 48 | 4.86 | 99.49 | |
| 54 | 4.82 | 99.53 | |
| 59 | 4.72 | 99.63 | |
| 63 | 4.76 | 99.59 | |
| 66.7 | 4.98 | 99.37 | |
| 70 | 4.66 | 99.69 | |
| 74 | 4.26 | 100.09 | |
| 78.8 | 3.88 | 100.47 | |
| 78.8 | 3.74 | 100.61 | |

**Cross Section:** 4
**Monitoring Year:** MY2 **Date:**
**Feature:** Riffle

| Station | Rod Ht. | Elevation | Notes |
|---|---|---|---|
| 0 | 5.43 | 100 | on |
| 0 | 5.57 | 99.86 | off |
| 6.2 | 5.64 | 99.79 | |
| 12.8 | 5.83 | 99.6 | |
| 18.5 | 5.94 | 99.49 | |
| 22.5 | 6 | 99.43 | |
| 23.9 | 5.77 | 99.66 | bkf |
| 25.9 | 6.31 | 99.12 | |
| 27.9 | 7.28 | 98.15 | |
| 28.9 | 7.74 | 97.69 | |
| 30.9 | 8.04 | 97.39 | |
| 32.1 | 8.11 | 97.32 | |
| 34.1 | 8.03 | 97.4 | |
| 35.7 | 7.91 | 97.52 | |
| 37.2 | 8.02 | 97.41 | |
| 37.8 | 7.95 | 97.48 | |
| 40 | 6.85 | 98.58 | |
| 42.2 | 6.08 | 99.35 | tob |
| 44.9 | 5.76 | 99.67 | |
| 49 | 5.65 | 99.78 | |
| 52.3 | 5.76 | 99.67 | |
| 58.1 | 5.61 | 99.82 | |
| 62.7 | 5.53 | 99.9 | |
| 69 | 5.32 | 100.11 | off |
| 69 | 5.24 | 100.19 | on |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

**Cross Section:** 5
**Monitoring Year:** MY2 **Date:**
**Feature:** Pool

| Station | Rod Ht. | Elevation | Notes |
|---|---|---|---|
| 0 | 4.47 | 100 | |
| 0 | 4.52 | 99.95 | |
| 2.3 | 4.91 | 99.56 | |
| 4.5 | 4.97 | 99.5 | |
| 7 | 4.8 | 99.67 | |
| 10.1 | 5.2 | 99.27 | |
| 12 | 5.1 | 99.37 | |
| 14.6 | 5.1 | 99.37 | |
| 17.2 | 5.47 | 99 | |
| 19.8 | 5.72 | 98.75 | |
| 20.9 | 6.33 | 98.14 | |
| 21.6 | 6.46 | 98.01 | |
| 22.9 | 6.65 | 97.82 | |
| 23.2 | 8.08 | 96.39 | |
| 24.5 | 8.42 | 96.05 | |
| 25.9 | 8.65 | 95.82 | |
| 26.7 | 8.94 | 95.53 | |
| 27.9 | 8.91 | 95.56 | |
| 29 | 8.65 | 95.82 | |
| 29.6 | 8.44 | 96.03 | |
| 30.7 | 7.92 | 96.55 | |
| 31.4 | 6.52 | 97.95 | |
| 32.6 | 6.38 | 98.09 | |
| 34 | 5.92 | 98.55 | |
| 36 | 5.65 | 98.82 | |
| 38.2 | 5.32 | 99.15 | |
| 41 | 5.25 | 99.22 | |
| 43.6 | 5.06 | 99.41 | |
| 46.1 | 4.98 | 99.49 | |
| 48.5 | 4.78 | 99.69 | |
| 53.1 | 4.67 | 99.8 | |
| 53.1 | 4.56 | 99.91 | |

**Cross Section:** 6
**Monitoring Year:** MY2 **Date:**
**Feature:** Riffle

| Station | Rod Ht. | Elevation | Notes |
|---|---|---|---|
| 0 | 5.72 | 100 | |
| 0 | 5.83 | 99.89 | |
| 7.6 | 6.06 | 99.66 | |
| 12.9 | 6.01 | 99.71 | |
| 16.1 | 5.99 | 99.73 | |
| 18.2 | 5.9 | 99.82 | |
| 20.6 | 6.13 | 99.59 | |
| 21.9 | 6.03 | 99.69 | |
| 24.5 | 7.11 | 98.61 | |
| 26 | 7.72 | 98 | |
| 27.3 | 7.93 | 97.79 | |
| 28 | 7.95 | 97.77 | |
| 30.1 | 7.61 | 98.11 | |
| 31.3 | 7.65 | 98.07 | |
| 33 | 7.62 | 98.1 | |
| 34.2 | 7.35 | 98.37 | |
| 35.8 | 7.56 | 98.16 | |
| 37.1 | 7.27 | 98.45 | |
| 39.9 | 6.15 | 99.57 | |
| 41.6 | 5.77 | 99.95 | |
| 45 | 5.62 | 100.1 | |
| 50.9 | 5.95 | 99.77 | |
| 55.5 | 5.67 | 100.05 | |
| 60.4 | 5.36 | 100.36 | |
| 60.4 | 5.17 | 100.55 | |
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**Cross Section:** 7
**Monitoring Year:** MY2 **Date:**
**Feature:** Riffle

| Station | Rod Ht. | Elevation | Notes |
|---|---|---|---|
| 0 | 4.4 | 100.00 | |
| 0 | 4.54 | 99.86 | |
| 4 | 4.59 | 99.81 | |
| 7.5 | 4.53 | 99.87 | |
| 11 | 4.64 | 99.76 | |
| 14.2 | 4.6 | 99.80 | |
| 17.2 | 4.64 | 99.76 | |
| 17.6 | 4.66 | 99.74 | |
| 18.5 | 4.87 | 99.53 | |
| 19.8 | 5.31 | 99.09 | |
| 20.4 | 5.82 | 98.58 | |
| 21 | 6.05 | 98.35 | |
| 21.7 | 6.11 | 98.29 | |
| 22.5 | 6.05 | 98.35 | |
| 22.8 | 5.83 | 98.57 | |
| 23.4 | 5.33 | 99.07 | |
| 24.9 | 5 | 99.40 | |
| 26 | 4.67 | 99.73 | |
| 28.3 | 4.64 | 99.76 | |
| 32 | 4.68 | 99.72 | |
| 35.7 | 4.62 | 99.78 | |
| 39.3 | 4.68 | 99.72 | |
| 42.2 | 4.52 | 99.88 | |
| 45.5 | 4.23 | 100.17 | |
| 45.5 | 4.05 | 100.35 | |
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**Cross Section:** 8
**Monitoring Year:** MY2 **Date:**
**Feature:** Riffle

| Station | Rod Ht. | Elevation | Notes |
|---|---|---|---|
| 0 | 476.31662 | 100.00 | |
| 0 | 476.14264 | 99.83 | |
| 4 | 475.59197 | 99.28 | |
| 8.7 | 474.8662 | 98.55 | |
| 11.1 | 474.60365 | 98.29 | |
| 13.4 | 474.37189 | 98.06 | |
| 15.6 | 473.21927 | 96.90 | |
| 16.9 | 473.20572 | 96.89 | |
| 18.1 | 473.39108 | 97.07 | |
| 19 | 473.76532 | 97.45 | |
| 19.5 | 473.85883 | 97.54 | |
| 20.9 | 474.4064 | 98.09 | |
| 23.2 | 474.58991 | 98.27 | |
| 26.7 | 474.68735 | 98.37 | |
| 31.4 | 474.73457 | 98.42 | |
| 34.6 | 474.86317 | 98.55 | |
| 41.4 | 479.88165 | 98.81 | |
| 41.4 | 480.10124 | 99.02 | |
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**Cross Section:** 9
**Monitoring Year:** MY2 **Date:**
Feature: Pool

| Station | Rod Ht. | Elevation | Notes |
|---|---|---|---|
| 0 | 481.0679 | 100 | |
| 0 | 480.8943 | 480.89 | |
| 3.6 | 480.1148 | 480.11 | |
| 8.2 | 479.5809 | 479.58 | |
| 14.1 | 479.1256 | 479.13 | |
| 15.9 | 478.4182 | 478.42 | |
| 17 | 477.5907 | 477.59 | |
| 17.8 | 476.6207 | 476.62 | |
| 19.4 | 476.0451 | 476.05 | |
| 21.7 | 476.4526 | 476.45 | |
| 23.4 | 477.4428 | 477.44 | |
| 27.1 | 478.3991 | 478.40 | |
| 32.8 | 478.8202 | 478.82 | |
| 38.1 | 478.9692 | 478.97 | |
| | | | |
| 44.1 | 479.1095 | 479.11 | |
| 53.6 | 479.3151 | 479.32 | |
| 59.6 | 479.5009 | 479.50 | |

| Station | Rod Ht. | Elevation | Notes |
|---|---|---|---|
| 63.3 | 479.6788 | 479.68 | |
| 63.3 | 479.8079 | 479.81 | |
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**Cross Section:** 1
**Monitoring Year:** MY3 **Date:** 9/16/2012
**Feature:** Riffle

| Station | Rod Ht. | Elevation | Notes |
|---|---|---|---|
| 0 | 5.12 | 100.00 | |
| 0 | 5.2 | 99.92 | |
| 3.5 | 5.86 | 99.26 | |
| 6.5 | 6.02 | 99.10 | |
| 10 | 6.07 | 99.05 | |
| 12.4 | 6.18 | 98.94 | |
| 14.3 | 6.83 | 98.29 | |
| 16 | 7.31 | 97.81 | |
| 16.6 | 7.88 | 97.24 | |
| 18 | 8.16 | 96.96 | |
| 19 | 8.04 | 97.08 | |
| 20.5 | 7.83 | 97.29 | |
| 22.3 | 7.93 | 97.19 | |
| 24 | 7.82 | 97.30 | |
| 25.5 | 7.61 | 97.51 | |
| 26.6 | 7.14 | 97.98 | |
| 28.5 | 6.6 | 98.52 | |
| 30.2 | 6.04 | 99.08 | |
| 33 | 6.05 | 99.07 | |
| 35.5 | 6.24 | 98.88 | |
| 38.5 | 6.06 | 99.06 | |
| 42.3 | 6.21 | 98.91 | |
| 45.4 | 6.22 | 98.90 | |
| 48.5 | 6.17 | 98.95 | |
| 52 | 5.99 | 99.13 | |
| 55.5 | 5.88 | 99.24 | |
| 58.9 | 5.36 | 99.76 | |
| 58.9 | 5.24 | 99.88 | |

**Cross Section:** 2
**Monitoring Year:** MY3 **Date:** 9/16/2012
**Feature:** Riffle

| Station | Rod Ht. | Elevation | Notes |
|---|---|---|---|
| 0 | 4.24 | 100 | |
| 0 | 4.32 | 99.92 | |
| 2 | 4.78 | 99.46 | |
| 5 | 5.17 | 99.07 | |
| 9 | 5.64 | 98.6 | |
| 13 | 5.73 | 98.51 | |
| 14.5 | 5.36 | 98.88 | |
| 16.6 | 5.33 | 98.91 | |
| 19 | 6.22 | 98.02 | |
| 21 | 6.82 | 97.42 | |
| 22.5 | 7.12 | 97.12 | |
| 25 | 7.25 | 96.99 | |
| 26.5 | 7.25 | 96.99 | |
| 28.5 | 7.36 | 96.88 | |
| 30.2 | 7.15 | 97.09 | |
| 32 | 6.34 | 97.9 | |
| 34.5 | 5.62 | 98.62 | |
| 38 | 5.48 | 98.76 | |
| 42 | 5.59 | 98.65 | |
| 46 | 5.4 | 98.84 | |
| 49 | 4.81 | 99.43 | |
| 53.1 | 3.94 | 100.3 | |
| 53.1 | 3.89 | 100.35 | |
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**Cross Section:** 3
**Monitoring Year:** MY3 **Date:** 9/15/2012
**Feature:** Pool

| Station | Rod Ht. | Elevation | Notes |
|---|---|---|---|
| 0 | 5.84 | 100 | on |
| 0 | 5.94 | 99.9 | off |
| 6.9 | 6.31 | 99.53 | |
| 10.7 | 6.54 | 99.3 | |
| 15.4 | 6.5 | 99.34 | |
| 18.9 | 6.51 | 99.33 | |
| 20.8 | 6.48 | 99.36 | |
| 22.2 | 7.08 | 98.76 | |
| 24.6 | 7.73 | 98.11 | |
| 25.1 | 9.66 | 96.18 | |
| 28.1 | 10.24 | 95.6 | |
| 30 | 10.44 | 95.4 | |
| 32.5 | 10.28 | 95.56 | |
| 34.2 | 9.88 | 95.96 | |
| 36.2 | 9.45 | 96.39 | |
| 36.8 | 7.26 | 98.58 | |
| 39.5 | 6.5 | 99.34 | |
| 41.8 | 6.42 | 99.42 | |
| 47.9 | 6.36 | 99.48 | |
| 53.7 | 6.34 | 99.5 | |
| 58.2 | 6.28 | 99.56 | |
| 61.8 | 6.45 | 99.39 | |
| 70.7 | 6.12 | 99.72 | |
| 78.8 | 5.36 | 100.48 | on |
| 78.8 | 5.24 | 100.6 | off |
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**Cross Section:** 4
**Monitoring Year:** MY3 **Date:** 9/15/2012
**Feature:** Riffle

| Station | Rod Ht. | Elevation | Notes |
|---|---|---|---|
| 0 | 5.19 | 100 | on |
| 0 | 5.3 | 99.89 | off |
| 2.5 | 5.44 | 99.75 | |
| 7 | 5.4 | 99.79 | |
| 12 | 5.43 | 99.76 | |
| 16 | 5.71 | 99.48 | |
| 20 | 5.82 | 99.37 | |
| 22.5 | 5.64 | 99.55 | |
| 24 | 5.55 | 99.64 | |
| 25.5 | 6.08 | 99.11 | |
| 27.4 | 6.91 | 98.28 | |
| 28.5 | 7.49 | 97.7 | |
| 30.1 | 7.67 | 97.52 | |
| 31.8 | 7.74 | 97.45 | |
| 33.3 | 7.68 | 97.51 | |
| 35 | 7.49 | 97.7 | |
| 36.8 | 7.6 | 97.59 | |
| 38 | 7.01 | 98.18 | |
| 40 | 6.4 | 98.79 | |
| 42.5 | 5.64 | 99.55 | |
| 45 | 5.44 | 99.75 | |
| 49 | 5.41 | 99.78 | |
| 53 | 5.6 | 99.59 | |
| 57 | 5.42 | 99.77 | |
| 61 | 5.43 | 99.76 | |
| 69 | 5.06 | 100.13 | off |
| 69 | 5 | 100.19 | on |

**Cross Section:** 5
**Monitoring Year:** MY3 **Date:** 9/15/2012
**Feature:** Pool

| Station | Rod Ht. | Elevation | Notes |
|---|---|---|---|
| 0 | 4.99 | 100 | on |
| 0 | 5.01 | 99.98 | off |
| 2.7 | 5.47 | 99.52 | |
| 7.9 | 5.36 | 99.63 | |
| 12.5 | 5.52 | 99.47 | |
| 17.1 | 5.99 | 99 | |
| 19.6 | 6.2 | 98.79 | |
| 21.5 | 7.05 | 97.94 | |
| 23.2 | 7.43 | 97.56 | |
| 23.5 | 8.8 | 96.19 | |
| 26.1 | 9.27 | 95.72 | |
| 27.3 | 9.5 | 95.49 | |
| 29.9 | 8.9 | 96.09 | |
| 31.1 | 7.01 | 97.98 | |
| 34.2 | 6.39 | 98.6 | |
| 37.2 | 5.98 | 99.01 | |
| 40.5 | 5.8 | 99.19 | |
| 46.6 | 5.61 | 99.38 | |
| 53 | 5.19 | 99.8 | off |
| 53 | 5.08 | 99.91 | on |
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**Cross Section:** 6
**Monitoring Year:** MY3 **Date:** 9/15/2012
**Feature:** Riffle

| Station | Rod Ht. | Elevation | Notes |
|---|---|---|---|
| 0 | 5.43 | 100 | on |
| 0 | 5.56 | 99.87 | off |
| 5 | 5.35 | 100.08 | |
| 10 | 5.65 | 99.78 | |
| 15 | 5.7 | 99.73 | |
| 20 | 5.76 | 99.67 | |
| 23 | 6.1 | 99.33 | |
| 24.7 | 6.79 | 98.64 | |
| 26 | 7.2 | 98.23 | |
| 27.7 | 7.5 | 97.93 | |
| 28.6 | 7.65 | 97.78 | |
| 30.4 | 7.34 | 98.09 | |
| 32.5 | 7.39 | 98.04 | |
| 33.8 | 7.28 | 98.15 | |
| 35 | 7.08 | 98.35 | |
| 36.3 | 7.21 | 98.22 | |
| 37.5 | 6.95 | 98.48 | |
| 39.2 | 6.14 | 99.29 | |
| 41.6 | 5.5 | 99.93 | |
| 44.5 | 5.39 | 100.04 | |
| 48 | 5.48 | 99.95 | |
| 52 | 5.54 | 99.89 | |
| 60.4 | 5.01 | 100.42 | off |
| 60.4 | 4.89 | 100.54 | on |

**Cross Section:** 7
**Monitoring Year:** MY3 **Date:** 9/16/2012
**Feature:** Riffle

| Station | Rod Ht. | Elevation | Notes |
|---|---|---|---|
| 0 | 6.75 | 100.00 | on |
| 0 | 6.88 | 99.87 | off |
| 4 | 6.85 | 99.90 | |
| 11 | 7.01 | 99.74 | |
| 14 | 6.93 | 99.82 | |
| 16.7 | 6.96 | 99.79 | |
| 17.7 | 6.94 | 99.81 | |
| 18.85 | 7.27 | 99.48 | |
| 19.85 | 7.66 | 99.09 | |
| 20.8 | 8.34 | 98.41 | |
| 21.6 | 8.41 | 98.34 | |
| 22.4 | 8.37 | 98.38 | |
| 23.1 | 7.75 | 99.00 | |
| 24.7 | 7.36 | 99.39 | |
| 26.2 | 6.98 | 99.77 | |
| 29 | 6.89 | 99.86 | |
| 34 | 7.02 | 99.73 | |
| 38 | 7.01 | 99.74 | |
| 41 | 6.76 | 99.99 | |
| 45.5 | 6.51 | 100.24 | off |
| 45.5 | 6.4 | 100.35 | on |

**Cross Section:** 8
**Monitoring Year:** MY3 **Date:** 9/16/2012
**Feature:** Riffle

| Station | Rod Ht. | Elevation | Notes |
|---|---|---|---|
| 0 | 4.12 | 100.00 | on |
| 0 | 4.25 | 99.87 | off |
| 4.1 | 4.74 | 99.38 | |
| 7.5 | 5.42 | 98.70 | |
| 11.6 | 5.75 | 98.37 | |
| 13 | 5.81 | 98.31 | |
| 15.1 | 6.63 | 97.49 | |
| 15.9 | 7.22 | 96.90 | |
| 17 | 7.23 | 96.89 | |
| 18.4 | 7.04 | 97.08 | |
| 19.6 | 6.55 | 97.57 | |
| 21.5 | 5.82 | 98.30 | |
| 23 | 5.78 | 98.34 | |
| 28.9 | 5.58 | 98.54 | |
| 31 | 5.62 | 98.50 | |
| 34 | 5.38 | 98.74 | |
| 37 | 5.35 | 98.77 | |
| 41.6 | 5.28 | 98.84 | off |
| 41.6 | 5.09 | 99.03 | on |
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**Cross Section:** 9
**Monitoring Year:** MY3 **Date:** 9/16/2012
Feature: Pool

| Station | Rod Ht. | Elevation | Notes |
|---|---|---|---|
| 0 | 4.11 | 100 | on |
| 0 | 4.23 | 99.88 | off |
| 2.5 | 4.75 | 99.36 | |
| 5.5 | 5.28 | 98.83 | |
| 8 | 5.43 | 98.68 | |
| 11 | 5.73 | 98.38 | |
| 14 | 6.01 | 98.1 | |
| 16 | 6.52 | 97.59 | |
| 17 | 7.36 | 96.75 | |
| 17.9 | 8.72 | 95.39 | |
| 19.3 | 9.2 | 94.91 | |
| 21.3 | 8.81 | 95.3 | |
| 23.2 | 8.33 | 95.78 | |
| 27 | 6.78 | 97.33 | |
| 30 | 6.55 | 97.56 | |
| 33.8 | 6.36 | 97.75 | |
| 37.6 | 6.23 | 97.88 | |
| 43.6 | 6.05 | 98.06 | |

| Station | Rod Ht. | Elevation | Notes |
|---|---|---|---|
| 48.8 | 5.76 | 98.35 | |
| 53.1 | 5.81 | 98.3 | |
| 59.2 | 5.65 | 98.46 | |
| 63.3 | 5.41 | 98.7 | off |
| 63.3 | 5.35 | 98.76 | on |
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**Figure 6.0 UT Bear Creek Longitudinal Profile - Northern UT (Sta. 1000-2000)**

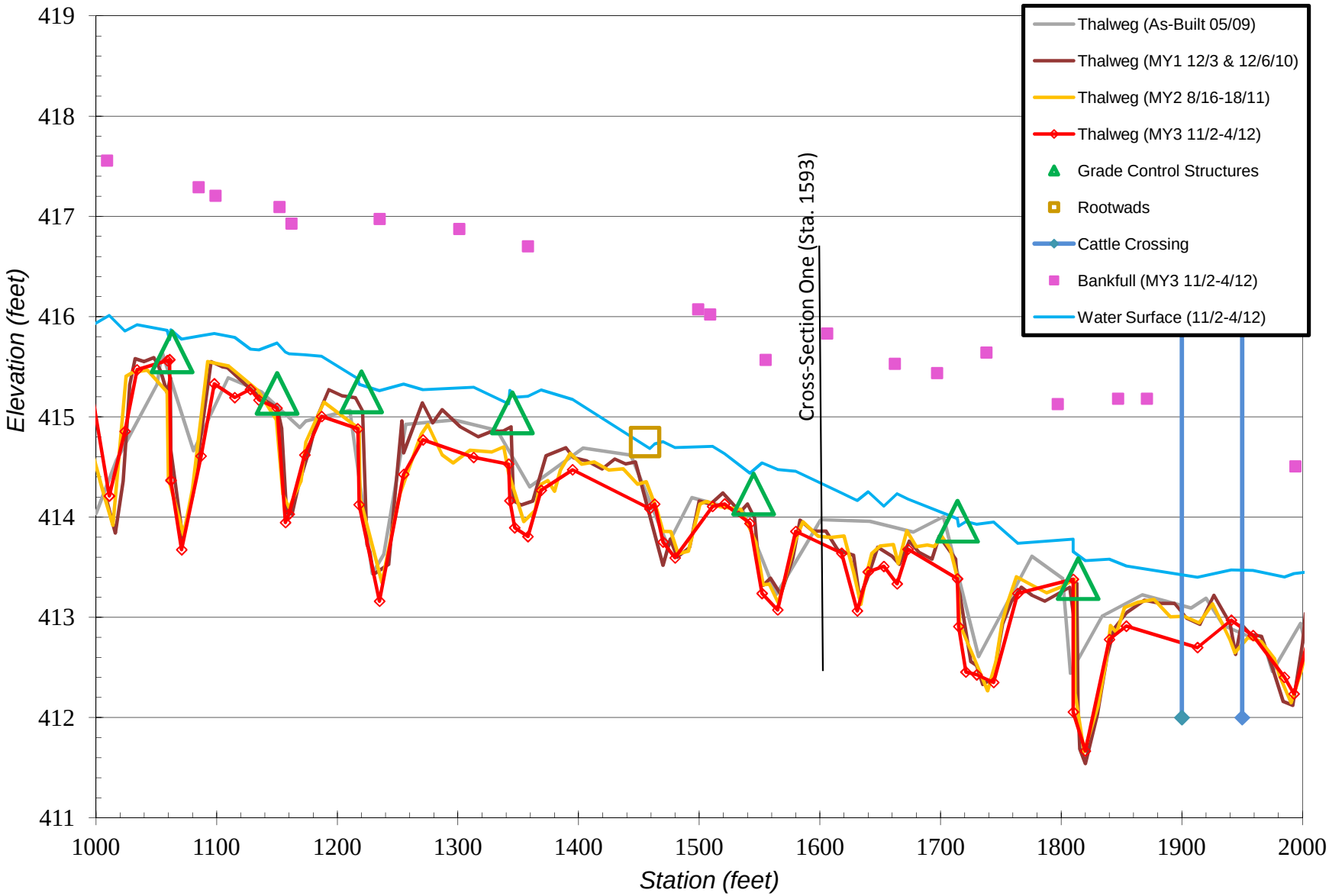


**Figure 6.1 UT Bear Creek Longitudinal Profile - Northern UT (Sta. 2000 -3000)**

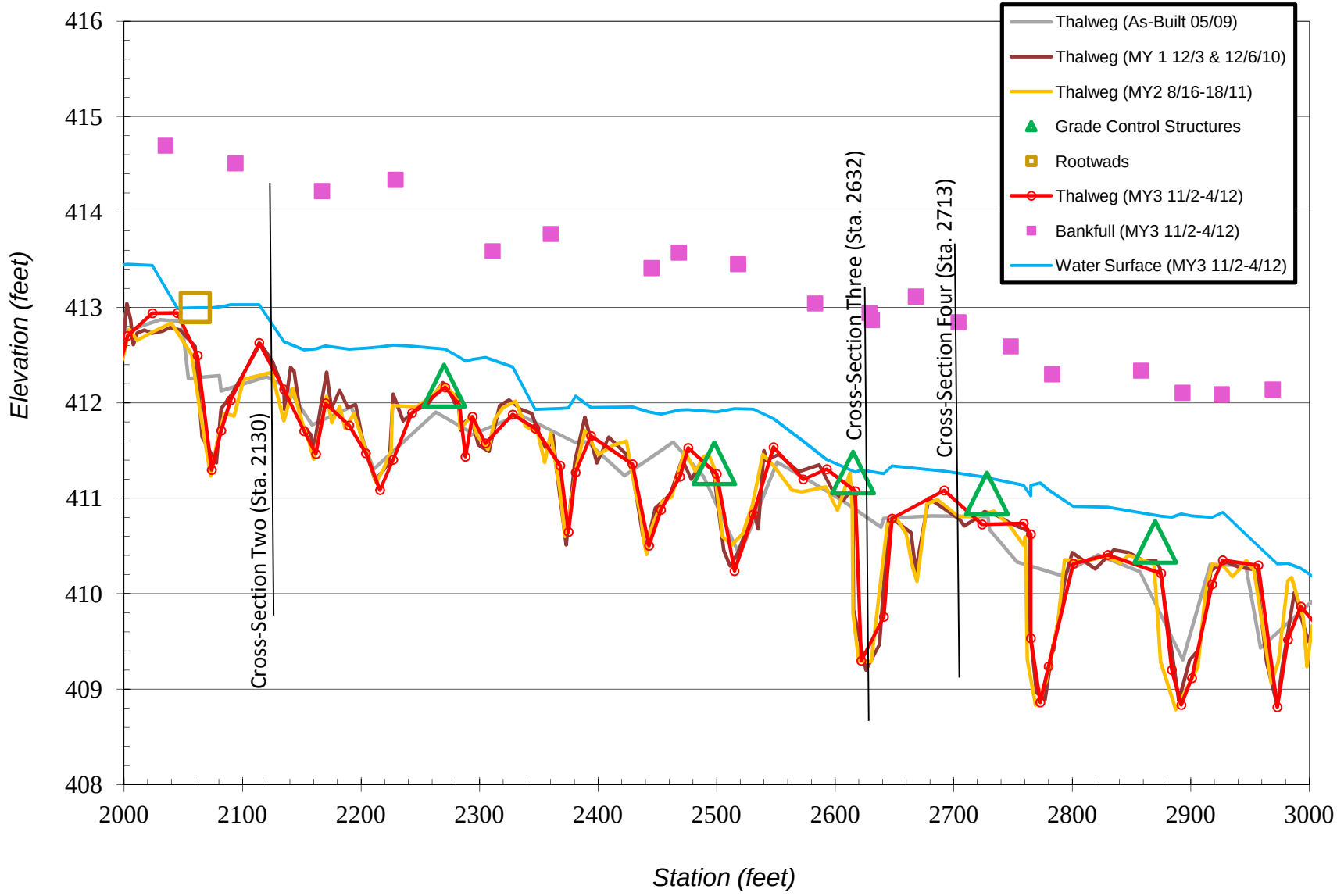


**Figure 6.2 UT Bear Creek Longitudinal Profile - Northern UT (Sta. 3000-4000)**

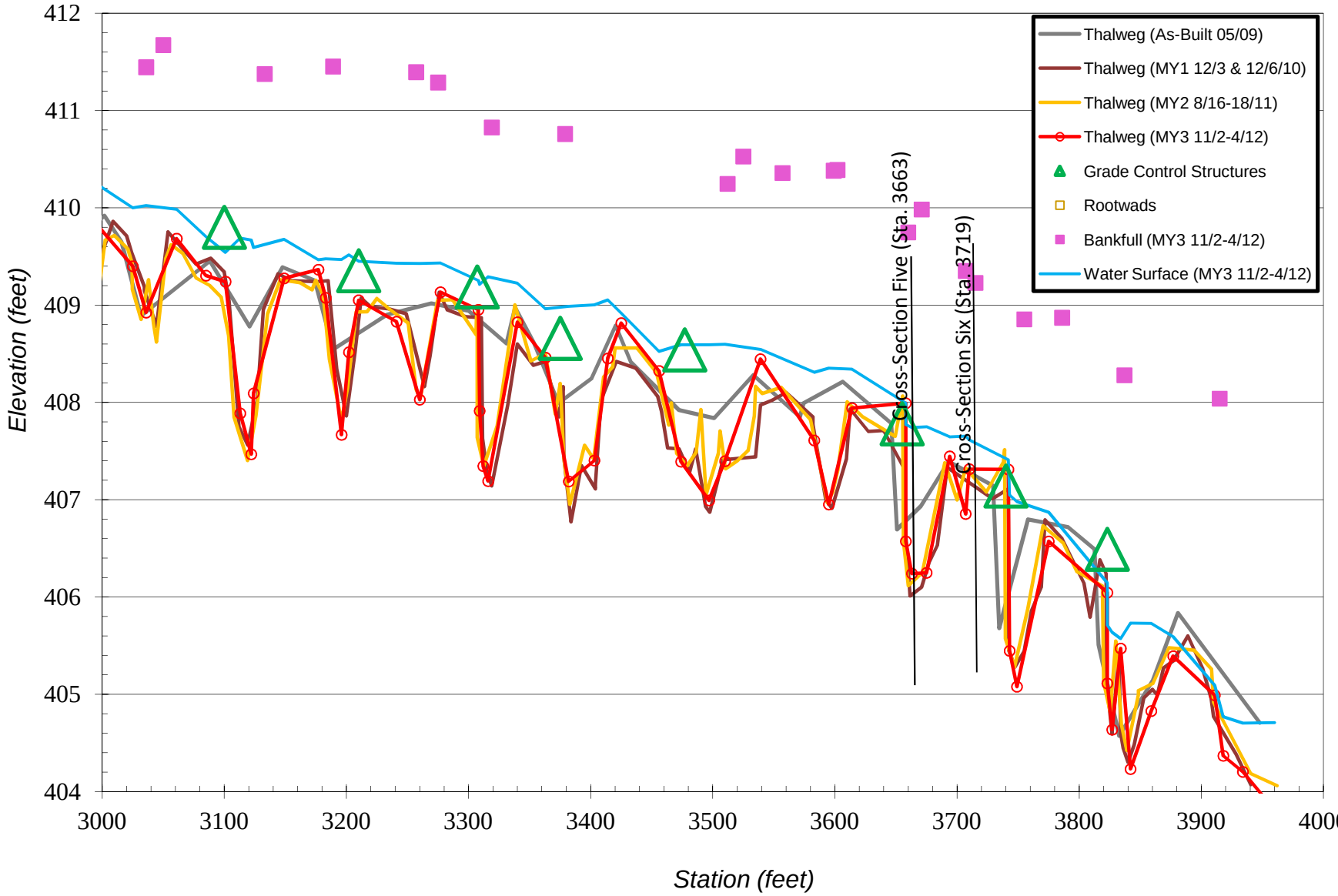


**Figure 6.3 UT Bear Creek Longitudinal Profile - Southern UT (Sta. 1000-1900)**

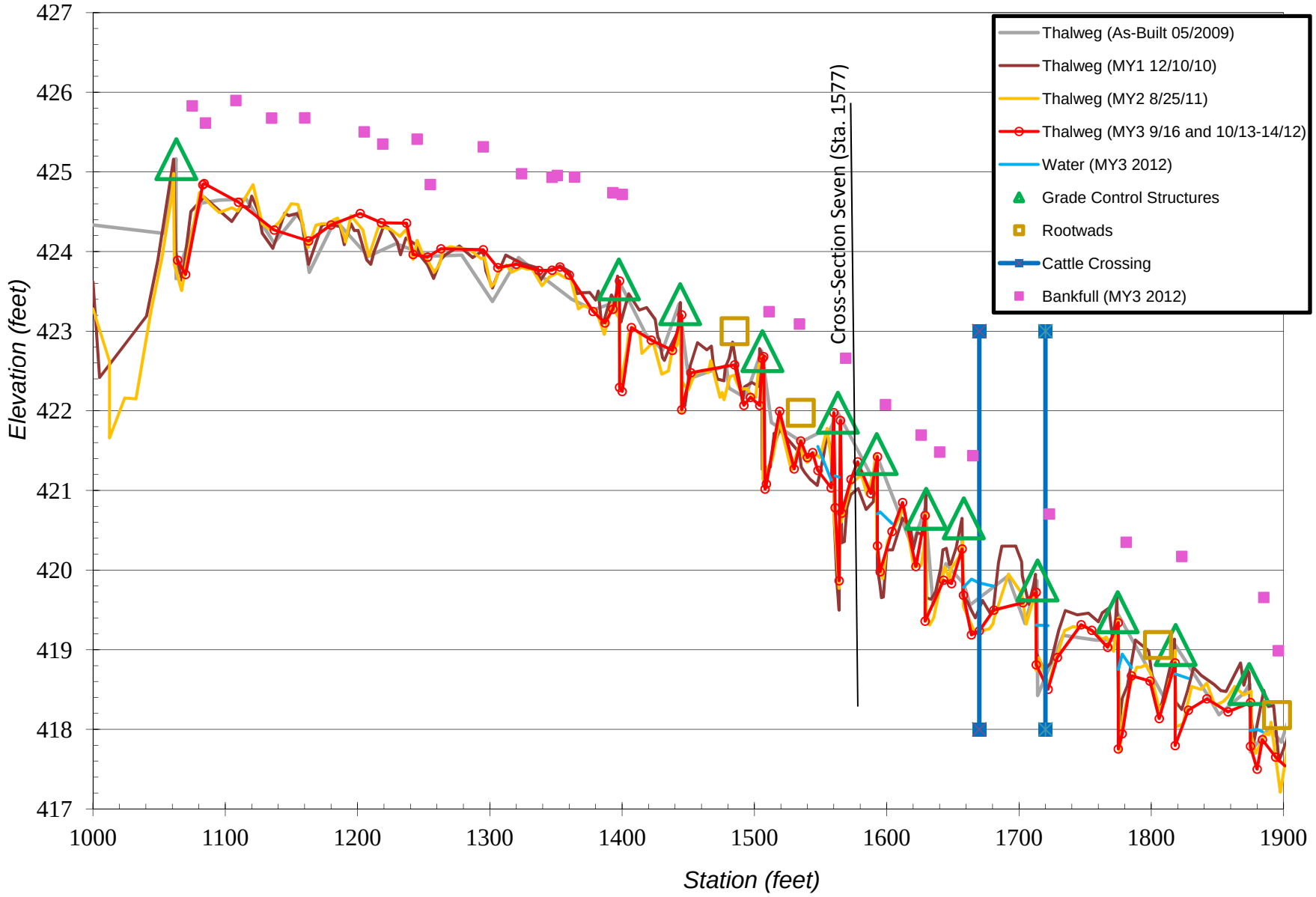
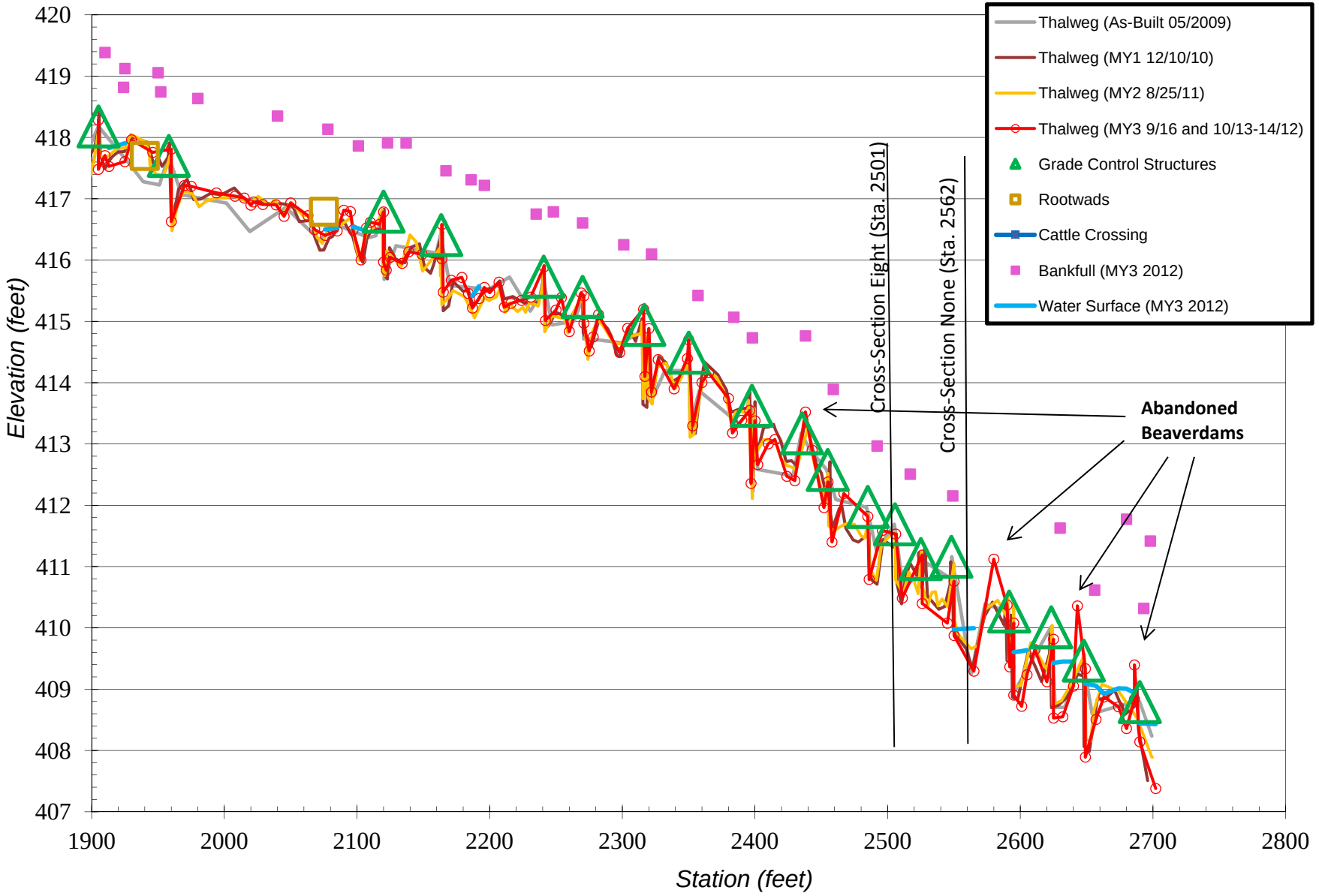


**Figure 6.4 UT Bear Creek Longitudinal Profile - Southern UT (Sta. 1900-2800)**



# Longitudinal Profile Data - Northern UT Bear - 2012

| ID | Northing | Easting | Descriptio | Station | Elevation |
|---|---|---|---|---|---|
| 1 | 5000.00000000000 | 5000.00000000000 | occ2 | | |
| 1 | 5000.00000000000 | 5000.00000000000 | occ1 | | 433.350000 |
| 2 | 5000.00000000000 | 5000.00000000000 | bksght2-corner | | |
| 2 | 6000.00000000000 | 6000.00000000000 | bksight1 | | 433.350000 |
| 3 | 4978.83382700000 | 5036.70032700000 | bksght2-cornersh | | |
| 3 | 5059.30305300000 | 5008.77893900000 | bkstshot | | 434.924482 |
| 4 | 5374.07512900000 | 5436.46231100000 | occ1 | | |
| 4 | 4985.98503400000 | 5005.60438200000 | 1.5 | | 420.369930 |
| 5 | 4972.48243300000 | 5009.33972200000 | .7 | 997 | 415.21339 |
| 5 | 5191.87285200000 | 5263.99877500000 | veg1nw | | |
| 6 | 4963.32389700000 | 5017.23343100000 | 1.8 | 1011 | 414.210689 |
| 7 | 4952.70046400000 | 5024.28104300000 | 1.0 | 1024 | 414.854903 |
| 8 | 4944.47712800000 | 5030.51684500000 | .45 | 1034 | 415.469605 |
| 8 | 5233.05056600000 | 5311.43379300000 | 1.7 | 1157 | 413.945903 |
| 9 | 4923.14385700000 | 5042.88096300000 | .3 | 1059 | 415.562053 |
| 9 | 5223.71302000000 | 5298.26481100000 | 1.0 | 1173 | 414.620208 |
| 10 | 4920.74392600000 | 5043.31341200000 | rok0.2 | 1061 | 415.57059 |
| 10 | 5217.44057200000 | 5285.12743300000 | .6 | 1187 | 415.004361 |
| 11 | 4920.17644000000 | 5043.52659500000 | top1.5 | 1062 | 414.366816 |
| 11 | 5244.01546600000 | 5297.99594600000 | bkf | 1162 | 416.93004 |
| 12 | 4911.96434900000 | 5047.76283100000 | pmax2.1 | 1071 | 413.674715 |
| 12 | 5205.94505100000 | 5233.41850200000 | bkf | 1235 | 416.975615 |
| 13 | 4895.99872200000 | 5051.05522400000 | 1.2 | 1087 | 414.609316 |
| 13 | 5205.55903000000 | 5257.78628500000 | cv0.5 | 1217 | 414.879995 |
| 14 | 4885.72194700000 | 5053.99168100000 | tor0.5 | 1098 | 415.330245 |
| 14 | 5204.78979400000 | 5257.65339900000 | top1.2 | 1218 | 414.124382 |
| 15 | 4869.79980000000 | 5061.33520100000 | 0.6 | 1115 | 415.192092 |
| 15 | 5193.19126099999 | 5244.73961500000 | max2.1 | 1235 | 413.161124 |
| 16 | 4857.64018600000 | 5065.87556700000 | .4 | 1128 | 415.274832 |
| 16 | 5179.79695200000 | 5235.65438700000 | .9 | 1255 | 414.426976 |
| 17 | 4851.89083600000 | 5070.88585200000 | .5 | 1135 | 415.167486 |
| 17 | 5164.24393000000 | 5230.25911300000 | .5 | 1271 | 414.77081 |
| 18 | 4839.02874900000 | 5076.26146200000 | .65 | 1150 | 415.086877 |
| 18 | 5122.07034200000 | 5229.88732100000 | .7 | 1313 | 414.595346 |
| 19 | 4828.58270600000 | 5078.85997100000 | max1.6 | 1160 | 414.030153 |
| 19 | 5091.99833500000 | 5230.30035600000 | .cv0.6 | 1342 | 414.528812 |
| 20 | 4798.39806300000 | 5056.13312000000 | bkst2barefp | | 423.468049 |
| 21 | 4839.83684500000 | 5088.26261100000 | b | 1152 | 417.094443 |
| 21 | 5090.98393800000 | 5229.56176100000 | top1.1 | 1343 | 414.164062 |
| 22 | 4889.27791200000 | 5065.03150900000 | b | 1099 | 417.207515 |
| 22 | 5086.77515800000 | 5228.32380200000 | 1.3 | 1347 | 413.894245 |
| 23 | 4894.08201600000 | 5033.03468600000 | b | 1085 | 417.291626 |
| 23 | 5075.86308500000 | 5225.67225800000 | 1.4 | 1358 | 413.805769 |
| 24 | 4959.05147300000 | 5005.98443100000 | b | 1009 | 417.558308 |
| 24 | 5066.89344900000 | 5217.45177100000 | 1 | 1369 | 414.267604 |
| 25 | 5065.58624300000 | 5237.37645400000 | bkf | 1358 | 416.701605 |
| 26 | 5133.22755800000 | 5250.65837100000 | bkf | 1301 | 416.874832 |
| 27 | 5052.36890500000 | 5195.14816100000 | .7 | 1395 | 414.472759 |
| 28 | 5022.10276700000 | 5138.66360300000 | top0.6 | 1459 | 414.084158 |
| 29 | 5019.47073800000 | 5135.91089600000 | top0.6 | 1463 | 414.129724 |

| | | | | | |
|---|---|---|---|---|---|
| 30 | 5013.29791500000 | 5131.18749000000 | 1.0 | 1470 | 413.751372 |
| 32 | 5004.42561400000 | 5128.13994300000 | 1.1 | 1480 | 413.593513 |
| 33 | 4973.94799700000 | 5126.33700200000 | 0.6 | 1511 | 414.106465 |
| 34 | 4985.67405200000 | 5116.33513500000 | bkf | 1499 | 416.072582 |
| 35 | 4964.22770300000 | 5128.43927900000 | .5 | 1521 | 414.131655 |
| 36 | 4943.60232000000 | 5132.85567100000 | .5 | 1542 | 413.937168 |
| 37 | 4933.54323800000 | 5134.99355300000 | max1.3 | 1552 | 413.238768 |
| 38 | 4931.12585100000 | 5122.28737900000 | bkf | 1555 | 415.569953 |
| 39 | 4919.88059800000 | 5131.83950700000 | 1.4 | 1565 | 413.07387 |
| 40 | 4907.14145400000 | 5124.34262700000 | .6 | 1580 | 413.857256 |
| 41 | 4873.97071900000 | 5104.80608700000 | .6 | 1618 | 413.639988 |
| 42 | 4861.96443500000 | 5098.35888600000 | 1.1 | 1631 | 413.064202 |
| 43 | 4857.73175700000 | 5091.05239000000 | .8 | 1640 | 413.453525 |
| 44 | 4847.41505800000 | 5081.07773200000 | .6 | 1653 | 413.50864 |
| 45 | 4853.50014300000 | 5065.82258100000 | bkf | 1662 | 415.530049 |
| 46 | 4841.01213200000 | 5071.93059100000 | .9 | 1664 | 413.334198 |
| 47 | 4837.84519200000 | 5063.04861000000 | .5 | 1673 | 413.678799 |
| 48 | 4812.06326700000 | 5032.29250800000 | cv0.6 | 1714 | 413.384723 |
| 49 | 4811.73265000000 | 5032.00643300000 | top1.0 | 1715 | 412.909279 |
| 50 | 4807.20489600000 | 5027.68203500000 | max1.5 | 1721 | 412.454638 |
| 51 | 4800.53257400000 | 5021.40202600000 | 1.5 | 1730 | 412.427251 |
| 52 | 4787.83189800000 | 5016.74768300000 | 1.6 | 1744 | 412.350782 |
| 53 | 4795.17096000000 | 5005.32986100000 | bkf | 1738 | 415.642352 |
| 54 | 4767.98627500000 | 5018.65720300000 | tor0.5 | 1764 | 413.238125 |
| 55 | -1012.60789000000 | 5680.53297300000 | cv0.4 | | 111.749537 |
| 56 | 4722.73331500000 | 5031.35501400000 | top1.6 | 1810 | 412.055408 |
| 57 | 4713.11555600000 | 5032.52857900000 | max1.9 | 1820 | 411.666568 |
| 58 | 4693.24885700000 | 5035.76212800000 | 0.8 | 1840 | 412.779491 |
| 59 | 4679.75338700000 | 5035.33671300000 | tor0.6 | 1854 | 412.912371 |
| 60 | 4684.44939100000 | 5048.33614600000 | bkf | 1847 | 415.182954 |
| 61 | 4620.60660300000 | 5027.11023200000 | fence0.7 | 1913 | 412.698812 |
| 62 | 4390.06328200000 | 5130.40348500000 | occ3 | | 416.934202 |
| 63 | 4360.86781600000 | 5130.22656700000 | occ3 | | 417.125295 |
| 64 | 4663.08287100000 | 5021.80223200000 | bkf | 1871 | 415.182684 |
| 65 | 4733.54988100000 | 5020.46454900000 | bkf | 1797 | 415.128377 |
| 66 | 4831.98124600000 | 5037.68154000000 | bkf | 1697 | 415.437008 |
| 67 | 4877.83435500000 | 5119.95759000000 | bkf | 1606 | 415.832338 |
| 68 | 4879.03264700000 | 5132.73182400000 | crnr | | 418.537177 |
| 69 | 4974.61093500000 | 5118.07468700000 | bkf | 1509 | 416.022437 |
| 70 | 4978.76448100000 | 5036.79706700000 | crnr | | 428.534952 |
| 71 | 4390.09592700000 | 5130.40354100000 | bckst3 | | 417.008984 |
| 72 | 4596.47762700000 | 5022.96043400000 | fence.5 | 1941 | 412.971761 |
| 73 | 4579.36246800000 | 5020.14388200000 | .65 | 1959 | 412.818929 |
| 74 | 4553.07240300000 | 5018.22718000000 | 1 | 1985 | 412.402024 |
| 75 | 4545.26564400000 | 5020.25965400000 | 1.2 | 1993 | 412.235727 |
| 76 | 4536.56093100000 | 5025.18153900000 | .75 | 2003 | 412.701821 |
| 77 | 4519.07233800000 | 5038.68546500000 | .5 | 2024 | 412.939625 |
| 78 | 4507.22082000000 | 5056.77054500000 | .05 | 2045 | 412.942238 |
| 79 | 4495.84994500000 | 5070.23283300000 | .5 | 2062 | 412.496722 |
| 80 | 4485.74443400000 | 5076.88409000000 | max1.7 | 2074 | 411.297238 |
| 81 | 4478.00981600000 | 5078.82643000000 | 1.3 | 2082 | 411.708617 |
| 82 | 4468.16472100000 | 5078.29103600000 | 1 | 2090 | 412.027545 |

| | | | | | |
|---|---|---|---|---|---|
| 83 | 4445.44029600000 | 5068.01973900000 | tor.4 | 2114 | 412.628728 |
| 84 | 4426.92670900000 | 5058.22141600000 | .5 | 2135 | 412.140146 |
| 85 | 4412.50192200000 | 5048.23467300000 | .85 | 2152 | 411.703228 |
| 86 | 4403.32099400000 | 5046.27247700000 | 1.1 | 2162 | 411.463623 |
| 87 | 4394.64826800000 | 5045.16230600000 | .6 | 2170 | 411.995591 |
| 88 | 4375.21486400000 | 5044.45086100000 | .8 | 2190 | 411.763349 |
| 89 | 4361.28752600000 | 5047.37584800000 | 1.1 | 2204 | 411.471436 |
| 90 | 4349.72218900000 | 5051.67061400000 | 1.5 | 2216 | 411.086092 |
| 91 | 4339.69190000000 | 5059.44425200000 | 1.2 | 2227 | 411.403664 |
| 92 | 4329.62833300000 | 5069.96314300000 | .7 | 2243 | 411.89443 |
| 93 | 4309.85908600000 | 5089.79033900000 | .4 | 2271 | 412.162165 |
| 94 | 4299.67044200000 | 5096.79833600000 | log.5 | 2283 | 411.979671 |
| 95 | 4295.60064200000 | 5099.64936900000 | max1 | 2288 | 411.435224 |
| 96 | 4289.33397600000 | 5101.96130800000 | .6 | 2294 | 411.854646 |
| 97 | 4276.59842300000 | 5103.64579500000 | .9 | 2305 | 411.576012 |
| 98 | 4255.44641300000 | 5094.08541100000 | tor.5 | 2328 | 411.8773 |
| 99 | 4237.28180900000 | 5088.11373800000 | .2 | 2347 | 411.731241 |
| 100 | 4219.09056000000 | 5079.09049900000 | top0.6 | 2368 | 411.342442 |
| 101 | 4211.99467400000 | 5076.53034700000 | max1.3 | 2375 | 410.64739 |
| 102 | 4205.75780400000 | 5075.79474800000 | .8 | 2381 | 411.269846 |
| 103 | 4193.57380400000 | 5072.86664500000 | tor.3 | 2394 | 411.653153 |
| 104 | 4159.97720000000 | 5083.84844300000 | .6 | 2429 | 411.357868 |
| 105 | 4145.84785200000 | 5086.07094800000 | 1.4 | 2443 | 410.50364 |
| 106 | 4136.64238300000 | 5089.99325200000 | 1 | 2453 | 410.879963 |
| 107 | 4122.35091600000 | 5097.69293500000 | .7 | 2469 | 411.225429 |
| 108 | 4116.95381600000 | 5102.00487500000 | .4 | 2476 | 411.528341 |
| 109 | 4094.69073600000 | 5109.81818000000 | log.65 | 2500 | 411.254932 |
| 110 | 4080.19137200000 | 5112.72377500000 | max1.7 | 2515 | 410.237874 |
| 111 | 4063.51797000000 | 5107.97324500000 | 1.1 | 2531 | 410.832615 |
| 112 | 4051.07241000000 | 5096.50378300000 | tor.3 | 2548 | 411.534842 |
| 113 | 4030.83491600000 | 5082.34646600000 | .4 | 2573 | 411.198759 |
| 114 | 4015.33935100000 | 5069.71175300000 | .1 | 2593 | 411.305775 |
| 115 | 3995.58577800000 | 5056.93780600000 | cv.3 | 2617 | |
| 116 | 3995.27116100000 | 5056.94474400000 | top1.5 | 2617 | |
| 117 | 3980.18482100000 | 5061.39568400000 | bkf-3.5 | 2629 | 412.941082 |
| 118 | 4017.82301900000 | 5083.91808100000 | bkf | 2583 | 413.043294 |
| 119 | 4075.71688200000 | 5121.22673100000 | bkf | 2518 | 413.45383 |
| 120 | 4128.66343500000 | 5109.58696000000 | bkf | 2468 | 413.575746 |
| 121 | 4149.36899600000 | 5098.96695500000 | bkf | 2445 | 413.413219 |
| 122 | 4221.98188700000 | 5091.10690900000 | bkf | 2360 | 413.770712 |
| 123 | 4275.96861400000 | 5088.83889000000 | bkf | 2311 | 413.589806 |
| 124 | 4347.56860300000 | 5070.57187800000 | bkf | 2229 | 414.338542 |
| 125 | 4396.94196900000 | 5056.29170600000 | bkf | 2167 | 414.220601 |
| 126 | 4468.36920400000 | 5063.51290700000 | bkf | 2094 | 414.511122 |
| 127 | 4505.89011600000 | 5042.21804500000 | bkf | 2035 | 414.695988 |
| 128 | 4549.49715800000 | 5034.43271500000 | bkf | 1994 | 414.506783 |
| 129 | 3945.47796300000 | 5199.89861800000 | occ4 | | 418.862383 |
| 130 | 3927.96298800000 | 5177.31900300000 | bakst4 | | 418.277668 |
| 131 | 3945.47030000000 | 5199.88873900000 | bkstoff.189 | | 419.051177 |
| 132 | 3881.13970600000 | 5086.49627700000 | prpcrnrnopin | | 413.842080 |
| 133 | 3995.41238000000 | 5056.43793800000 | cv0.2 | 2617 | 411.074657 |
| 134 | 3991.37631800000 | 5053.47481400000 | max2.0 | 2622 | 409.29721 |

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|---|---|---|---|---|---|
| 135 | 3974.74301000000 | 5044.69042200000 | 1.5 | 2641 | 409.757914 |
| 136 | 3967.74335900000 | 5042.82051600000 | .55 | 2648 | 410.788029 |
| 137 | 3926.75404500000 | 5026.87328200000 | tor0.2 | 2692 | 411.083115 |
| 138 | 3895.91179500000 | 5021.34076900000 | 0.5 | 2724 | 410.72696 |
| 139 | 3860.94246600000 | 5013.82809900000 | 0.4 | 2759 | 410.736642 |
| 140 | 3855.37177000000 | 5009.55822300000 | cv0.4 | 2765 | 410.623755 |
| 141 | 3854.92725100000 | 5009.28917700000 | top1.6 | 2765 | 409.533511 |
| 142 | 3849.42276900000 | 5005.97524200000 | max2.3 | 2773 | 408.861129 |
| 143 | 3842.74260900000 | 5001.99296600000 | 1.85 | 2780 | 409.238346 |
| 144 | 3827.24388300000 | 4986.71949900000 | .6 | 2801 | 410.315189 |
| 145 | 3806.46467300000 | 4966.48715600000 | .5 | 2830 | 410.407323 |
| 146 | 3774.53564200000 | 4935.17610300000 | 0.6 | 2875 | 410.213597 |
| 147 | 3769.85259700000 | 4927.51205500000 | max1.6 | 2884 | 409.201604 |
| 148 | 3764.00835300000 | 4921.91558800000 | max2.0 | 2892 | 408.835346 |
| 149 | 3755.52356100000 | 4918.95636100000 | 0.7 | 2901 | 409.114907 |
| 150 | 3738.34539000000 | 4917.31076100000 | 0.7 | 2918 | 410.09867 |
| 151 | 3729.75217800000 | 4918.51616100000 | .5 | 2927 | 410.35075 |
| 152 | 3700.01619900000 | 4920.69530000000 | 0.2 | 2957 | 410.297802 |
| 153 | 3682.93461700000 | 4921.82426800000 | max1.5 | 2973 | 408.811673 |
| 154 | 3674.38034400000 | 4925.50410300000 | .4 | 2982 | 409.518003 |
| 155 | 3664.32372000000 | 4927.45866900000 | tor0.4 | 2993 | 409.865147 |
| 156 | 3634.40837600000 | 4941.19767200000 | 0.6 | 3025 | 409.398974 |
| 157 | 3626.04834900000 | 4947.69262400000 | 0.1 | 3036 | 408.922336 |
| 158 | 3601.42688200000 | 4951.29303200000 | tor0.3 | 3061 | 409.682664 |
| 159 | 3576.33586700000 | 4951.67096800000 | 0.4 | 3085 | 409.302346 |
| 160 | 3561.95119600000 | 4952.76410700000 | .3 | 3101 | 409.240405 |
| 161 | 3549.70083700000 | 4952.68729600000 | 1.8 | 3113 | 407.886493 |
| 162 | 3541.19836400000 | 4956.40771300000 | max2.2 | 3122 | 407.465998 |
| 163 | 3531.68325800000 | 4958.92781300000 | 1.5 | 3124 | 408.09206 |
| 164 | 3517.08968400000 | 4973.94894800000 | 0.4 | 3149 | 409.274144 |
| 165 | 3510.75931400000 | 5003.92305800000 | 0.1 | 3177 | 409.363605 |
| 166 | 3508.26891900000 | 5009.84846000000 | top0.4 | 3183 | 409.074276 |
| 167 | 3504.48472200000 | 5024.22041900000 | max1.8 | 3196 | 407.666048 |
| 168 | 3503.59769100000 | 5031.53067000000 | 1.0 | 3202 | 408.515125 |
| 169 | 3506.12750200000 | 5039.88421000000 | tor0.4 | 3210 | 409.049376 |
| 170 | 3512.73310500000 | 5069.64853700000 | 0.6 | 3241 | 408.829017 |
| 171 | 3516.22662500000 | 5087.37124700000 | 1.4 | 3260 | 408.027399 |
| 172 | 3515.38807800000 | 5085.90256900000 | 1.4 | 3258 | |
| 173 | 3517.92753900000 | 5103.49981800000 | ctgage0.3 | 3277 | |
| 174 | 3530.32567800000 | 5100.06706300000 | bkf | 3275 | 412.486855 |
| 175 | 3527.92849300000 | 5081.88505000000 | bkf | 3257 | 411.39356 |
| 176 | 3520.26333200000 | 5019.12463900000 | bkf | 3189 | 411.452514 |
| 177 | 3543.42563300000 | 4976.38850300000 | bkf | 3133 | 411.37458 |
| 178 | 3611.77464500000 | 4960.58034500000 | bkf | 3050 | 411.672185 |
| 179 | 3627.02649000000 | 4959.63615000000 | bkf | 3036 | 411.443961 |
| 180 | 3682.59810900000 | 4912.68754100000 | bkf | 2969 | 412.140686 |
| 181 | 3730.37381600000 | 4907.83440300000 | bkf | 2926 | 412.090999 |
| 182 | 3767.75614100000 | 4915.62740300000 | bkf | 2893 | 412.105692 |
| 183 | 3794.66475900000 | 4938.30529500000 | bkf | 2858 | 412.337776 |
| 184 | 3850.85978100000 | 4987.74645700000 | bkf | 2783 | 412.500593 |
| 185 | 3868.94777500000 | 5024.93089500000 | bkf | 2748 | 412.792248 |
| 186 | 3913.17206100000 | 5034.82835800000 | bkf | 2704 | 413.046501 |

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|---|---|---|---|---|---|
| 187 | 3946.32190300000 | 5047.70792300000 | bkf | 2668 | 413.314736 |
| 188 | 3979.48958000000 | 5061.02672500000 | bkf | 2631 | 413.067984 |
| 189 | 3397.17878000000 | 5432.12972900000 | bksight5 | | 411.293640 |
| 190 | 3531.93558600000 | 5434.51163800000 | occ5 | | 416.235698 |
| 191 | 3945.46465000000 | 5199.83611300000 | occ4again | | 419.023505 |
| 192 | 3397.25588900000 | 5432.13109200000 | bksght5 -0.942E | | 410.352783 |
| 193 | 3518.14062700000 | 5103.86132900000 | crest0.3 | 3277 | 409.214952 |
| 194 | 3516.67654900000 | 5133.01963000000 | cv0.3 | 3308 | 408.951495 |
| 195 | 3516.34132400000 | 5133.76176700000 | top1.3rodoff1.5 | 3309 | 407.91212 |
| 196 | 3516.98859000000 | 5136.89854000000 | max1.9rodoff1.5 | 3312 | 407.344589 |
| 197 | 3515.45913700000 | 5140.23170500000 | max2.1rodoff1.5 | 3316 | 407.19009 |
| 198 | 3508.04483000000 | 5164.31378000000 | tor0.4 | 3340 | 408.823552 |
| 199 | 3491.87801900000 | 5180.53450800000 | 0.5 | 3363 | 408.459632 |
| 200 | 3523.90078000000 | 5148.03162900000 | bkf | 3319 | 410.825245 |
| 201 | 3486.82734100000 | 5199.37482800000 | bkf | 3379 | 410.758444 |
| 202 | 3478.99712800000 | 5194.74004000000 | 1.8 | 3382 | 407.186871 |
| 203 | 3460.27353400000 | 5204.55506200000 | 1.6 | 3403 | 407.402477 |
| 204 | 3449.61698900000 | 5207.18658200000 | 0.6 | 3414 | 408.451269 |
| 205 | 3438.62748600000 | 5209.68239400000 | tor0.1 | 3425 | 408.814451 |
| 206 | 3407.67825700000 | 5208.71539900000 | 0.2 | 3456 | 408.322993 |
| 207 | 3389.21039400000 | 5209.51513800000 | 0.2 | 3474 | 407.390112 |
| 208 | 3365.52771600000 | 5211.73549700000 | 1.6 | 3497 | 406.991875 |
| 209 | 3363.62754000000 | 5229.44902300000 | bkf | 3512 | 410.24577 |
| 210 | 3354.97956100000 | 5221.22303800000 | 1.2 | 3510 | 407.39587 |
| 211 | 3338.78439100000 | 5245.39065200000 | tor0.1 | 3539 | 408.443961 |
| 212 | 3344.12579700000 | 5268.18840400000 | bkf | 3557 | 410.357152 |
| 213 | 3324.66408100000 | 5309.44392200000 | bkf | 3602 | 410.388982 |
| 214 | 3325.42586200000 | 5287.89068100000 | 0.7 | 3583 | 407.608843 |
| 215 | 3321.27088600000 | 5299.37331900000 | 1.4 | 3595 | 406.950384 |
| 216 | 3307.17512700000 | 5312.27980300000 | tor0.4 | 3614 | 407.940043 |
| 217 | 3281.59374200000 | 5347.90118000000 | cv0.0 | 3658 | 407.990629 |
| 218 | 3281.54613300000 | 5348.54068300000 | top1.2 | 3658 | 406.571508 |
| 219 | 3277.91839500000 | 5349.61112800000 | max1.5 | 3663 | 406.240007 |
| 220 | 3267.37408400000 | 5356.80514800000 | 1.5 | 3675 | 406.248087 |
| 221 | 3249.29498100000 | 5362.95104700000 | 0.2 | 3694 | 407.44474 |
| 222 | 3275.05773500000 | 5363.56207100000 | bkf | 3671 | 409.982723 |
| 223 | 3226.85524600000 | 5371.27935300000 | bkf | 3715 | 409.227995 |
| 224 | 3235.60848000000 | 5363.61972800000 | 0.8 | 3707 | 406.85307 |
| 225 | 3232.65430000000 | 5361.48635000000 | tor0.3 | 3710 | 407.313614 |
| 226 | 3201.05312200000 | 5365.54324700000 | cv0.1 | 3742 | 407.309839 |
| 227 | 3200.08880000000 | 5365.43960700000 | top1.6 | 3743 | 405.44613 |
| 228 | 3194.23423900000 | 5365.21969600000 | 1.9 | 3749 | 405.077491 |
| 229 | 3168.24851400000 | 5373.51628900000 | tor0.3 | 3775 | 406.570128 |
| 230 | 3192.54349200000 | 5379.14779400000 | bkf | 3755 | 408.853598 |
| 231 | 3129.68163600000 | 5399.35734000000 | cv0.1 | 3823 | 406.044142 |
| 232 | 3129.43867100000 | 5399.47177500000 | top0.6 | 3823 | 405.111062 |
| 233 | 3125.02082400000 | 5402.31508700000 | max1.0 | 3827 | 404.635644 |
| 234 | 3118.37237600000 | 5402.15419200000 | cv0.1 | 3834 | 405.46974 |
| 235 | 3116.45512200000 | 5383.15253400000 | bkf | 3837 | 408.278489 |
| 236 | 3110.66081600000 | 5399.81593400000 | 1.5 | 3842 | 404.230613 |
| 237 | 3093.58710600000 | 5400.73023200000 | 0.9 | 3859 | 404.827265 |
| 238 | 3075.93672200000 | 5390.36188800000 | tor0.2 | 3877 | 405.391093 |

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|---|---|---|---|---|---|
| 239 | 3050.07955400000 | 5369.43237200000 | 0.1 | 3911 | 404.988981 |
| 240 | 3043.22186300000 | 5367.33087700000 | 0.4 | 3918 | 404.367256 |
| 241 | 3028.84886100000 | 5355.87908900000 | 0.5 | 3934 | 404.20222 |
| 242 | 3011.05029100000 | 5338.47666000000 | 0.9 | 3960 | 403.807744 |
| 243 | 2996.17356100000 | 5330.66524600000 | 1.3 | | 402.396074 |
| 244 | 2987.79893800000 | 5320.27248700000 | treetrnk1.4 | | 402.345855 |
| 245 | 2981.96539500000 | 5315.47973100000 | 1.6 | | 402.067525 |
| 246 | 2960.42742600000 | 5304.79497600000 | 1.0 | | 402.733041 |
| 247 | 2947.63679300000 | 5301.83525800000 | 1.8 | | 401.940027 |
| 248 | 2939.72834500000 | 5308.19148100000 | 2.0 | | 401.531086 |
| 249 | 2932.28544300000 | 5308.79067100000 | 1.5 | | 402.047754 |
| 250 | 3040.55364500000 | 5379.30150100000 | bkf | 3915 | 409.038347 |
| 251 | 2973.71079800000 | 5327.01033900000 | bkf | | 407.433489 |
| 252 | 3166.74730000000 | 5390.92879900000 | bkf | 3786 | 408.870441 |
| 253 | 3235.92309900000 | 5374.44938700000 | bkf | 3707 | 409.351405 |
| 254 | 3284.87507900000 | 5355.83811700000 | bkf | 3660 | 409.746942 |
| 255 | 3327.84112200000 | 5307.72171600000 | bkf | 3599 | 410.381534 |
| 256 | 3356.13323200000 | 5240.44442700000 | bkf | 3525 | 410.527003 |
| 257 | 3397.23512800000 | 5432.10002200000 | bkst4 | | 410.392624 |
| | | | cv0.4 | 1810 | 413.38 |

## Longitudinal Profile Data - Southern UT Bear - 2012

| ID | POINT_X | POINT_Y | Station | Descriptio | Thalweg | BKF | Other |
|---|---|---|---|---|---|---|---|
| 1 | 1882239.48445000000 | 675790.46117400000 | | occ1 | | | 434.45 |
| 3 | 1882152.11335000000 | 675950.37242900000 | | bk1 | | | 430.3785 |
| 4 | 1882259.22484000000 | 675988.40440100000 | 1064 | top | 423.8916 | | |
| 5 | 1882260.51843000000 | 675976.93463100000 | 1075 | tob | | 425.829601 | |
| 6 | 1882262.94845000000 | 675983.77971300000 | 1070 | 1.2 | 423.7122 | | |
| 7 | 1882269.90694000000 | 675971.78631100000 | 1083 | t | 424.8378 | | |
| 8 | 1882268.06299000000 | 675968.49333900000 | 1085 | b | | 425.614082 | |
| 9 | 1882269.94233000000 | 675971.04215800000 | 1084 | 0.- | 424.8535 | | |
| 10 | 1882289.36586000000 | 675954.98574800000 | 1110 | 0.- | 424.619 | | |
| 11 | 1882286.32554000000 | 675951.81921900000 | 1108 | b off 0.2 | | 425.897335 | |
| 12 | 1882312.98957000000 | 675941.19592200000 | 1137 | t | 424.2701 | | |
| 13 | 1882308.25180000000 | 675939.27885600000 | 1135 | b off 0.2 | | 425.675684 | |
| 14 | 1882324.70798000000 | 675918.42245300000 | 1163 | t | 424.1336 | | |
| 15 | 1882319.71777000000 | 675920.45951300000 | 1160 | b | | 425.679439 | |
| 16 | 1882326.81113000000 | 675900.54955800000 | 1180 | t | 424.3337 | | |
| 17 | 1882328.68367000000 | 675878.79410300000 | 1202 | t | 424.4777 | | |
| 18 | 1882327.54707000000 | 675873.71158500000 | 1205 | b | | 425.502936 | |
| 19 | 1882339.64556000000 | 675866.48110000000 | 1218 | t | 424.3618 | | |
| 20 | 1882339.13804000000 | 675862.64364100000 | 1219 | b | | 425.35019 | |
| 21 | 1882357.91170000000 | 675859.47706500000 | 1237 | top | 424.3561 | | |
| 22 | 1882362.38333000000 | 675850.54058900000 | 1245 | b | | 425.411961 | |
| 23 | 1882362.19440000000 | 675857.64562600000 | 1242 | max | 423.9627 | | |
| 24 | 1882372.22771000000 | 675853.19564700000 | 1253 | t | 423.9313 | | |
| 25 | 1882371.67856000000 | 675848.22796600000 | 1255 | b | | 424.842114 | |
| 26 | 1882380.61885000000 | 675846.44989900000 | 1263 | t | 424.0344 | | |
| 27 | 1882393.91744000000 | 675817.61971200000 | 1295 | t | 424.0228 | | |
| 28 | 1882389.43729000000 | 675816.41831700000 | 1295 | b | | 425.315535 | |
| 29 | 1882401.69314000000 | 675809.18912700000 | 1306 | t | 423.7978 | | |
| 30 | 1882365.41613000000 | 675813.07102300000 | | exment | | | 427.6546 |
| 31 | 1882415.15886000000 | 675803.92505100000 | 1320 | t | 423.8405 | | |
| 32 | 1882430.86856000000 | 675799.08541100000 | 1337 | t | 423.7622 | | |
| 33 | 1882417.34664000000 | 675799.78125100000 | 1324 | b | | 424.977501 | |
| 34 | 1882447.54021000000 | 675800.14092700000 | 1353 | t | 423.8065 | | |
| 35 | 1882446.46683000000 | 675794.23418500000 | 1351 | b | | 424.955333 | |
| 36 | 1882365.40637000000 | 675813.06927000000 | | 20120916-ezmnt | | | 427.629 |
| 37 | 1882440.89119000000 | 675799.42747400000 | 1347 | t | 423.7659 | | |
| 38 | 1882441.89550000000 | 675795.51945500000 | 1347 | b | | 424.93225 | |
| 39 | 1882454.68395000000 | 675802.16044800000 | 1360 | t | 423.7053 | | |
| 40 | 1882458.03734000000 | 675797.06911800000 | 1364 | b | | 424.936004 | |
| 41 | 1882472.41613000000 | 675804.03528100000 | 1378 | t | 423.2477 | | |
| 42 | 1882481.26960000000 | 675801.04653200000 | 1387 | max | 423.104 | | |
| 43 | 1882478.48498000000 | 675793.85585100000 | 1393 | b | | 424.738912 | |
| 44 | 1882484.65800000000 | 675797.40170000000 | 1393 | tor | 423.2758 | | |
| 45 | 1882487.87085000000 | 675793.72418900000 | 1398 | top | 423.6309 | | |
| 46 | 1882487.65586000000 | 675793.59741700000 | 1398 | max | 422.2942 | | |
| 47 | 1882489.08991000000 | 675791.65135400000 | 1400 | max | 422.2428 | | |
| 48 | 1882483.63982000000 | 675789.45918400000 | 1400 | b | | 424.71785 | |
| 49 | 1882492.76642000000 | 675785.72506700000 | 1407 | tor | 423.045 | | |
| 50 | 1882500.20517000000 | 675773.41010200000 | 1422 | t | 422.8876 | | |
| 51 | 1882518.14290000000 | 675758.29666000000 | 1445 | top | 423.2054 | | |
| 52 | 1882518.47724000000 | 675758.39786300000 | 1445 | t | 422.0127 | | |
| 53 | 1882525.71725000000 | 675757.66562700000 | 1452 | t | 422.4774 | | |

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|---|---|---|---|---|---|---|---|
| 54 | 1882511.70829000000 | 675761.87800200000 | 1438 | t | 422.7587 | | |
| 55 | 1882555.29769000000 | 675744.53522200000 | 1485 | tor | 422.5772 | | |
| 56 | 1882558.74411000000 | 675738.62294900000 | 1492 | t | 422.0682 | | |
| 57 | 1882559.73615000000 | 675726.22232800000 | 1504 | t | 422.067 | | |
| 58 | 1882558.58138000000 | 675723.76850500000 | 1506 | top | 422.6568 | | |
| 59 | 1882554.00446000000 | 675583.31732400000 | 0 | occ2 | | | 429.441 |
| 60 | 1882538.92576000000 | 675573.25794200000 | | occ3 | | | 432.1886 |
| 61 | 1882364.62965000000 | 675812.51321300000 | | ezment | | | 427.6685 |
| 62 | 1882560.10322000000 | 675733.27224600000 | 1497 | t | 422.1691 | | |
| 63 | 1882559.22276000000 | 675723.50690400000 | 1507 | top of rok | 422.6799 | | |
| 64 | 1882559.28752000000 | 675722.89818800000 | 1508 | top | 421.0171 | | |
| 65 | 1882558.80087000000 | 675721.31506700000 | 1509 | max 0.4 | 421.0808 | | |
| 66 | 1882554.37026000000 | 675719.19414100000 | 1511 | bkf | | 423.245022 | |
| 67 | 1882556.84019000000 | 675711.41785200000 | 1519 | tor | 421.9933 | | |
| 68 | 1882555.20122000000 | 675701.29379700000 | 1530 | .25 | 421.2704 | | |
| 69 | 1882555.63278000000 | 675695.14164100000 | 1535 | t | 421.6218 | | |
| 70 | 1882562.31358000000 | 675697.38744100000 | 1534 | bkf | | 423.090632 | |
| 71 | 1882556.72681000000 | 675690.24552800000 | 1540 | max0.05 | 421.4129 | | |
| 72 | 1882560.32030000000 | 675687.08153100000 | 1544 | t | 421.4754 | | |
| 73 | 1882563.24809000000 | 675685.00624400000 | 1548 | .3 | 421.2509 | | |
| 74 | 1882571.19836000000 | 675678.27646900000 | 1558 | .1 | 421.0319 | | |
| 75 | 1882573.34018000000 | 675677.81528200000 | 1560 | tolog | 421.9768 | | |
| 76 | 1882573.95945000000 | 675677.46458800000 | 1561 | top0.4 | 420.7828 | | |
| 77 | 1882577.67810000000 | 675676.64002500000 | 1564 | max1.3 | 419.8659 | | |
| 78 | 1882577.91484000000 | 675675.71409500000 | 1565 | tol | 421.8789 | | |
| 79 | 1882578.71498000000 | 675675.57707600000 | 1566 | 0.5 | 420.7156 | | |
| 80 | 1882584.55559000000 | 675680.15045000000 | 1569 | bkr | | 422.660729 | |
| 81 | 1882586.35269000000 | 675674.13342200000 | 1573 | t | 421.1383 | | |
| 82 | 1882590.59960000000 | 675672.78968400000 | 1578 | t | 421.3601 | | |
| 83 | 1882599.89510000000 | 675669.56625900000 | 1588 | t | 420.9617 | | |
| 84 | 1882604.23482000000 | 675666.84561100000 | 1593 | top of | 421.4233 | | |
| 85 | 1882604.51604000000 | 675666.67597700000 | 1593 | top0.4 | 420.3047 | | |
| 86 | 1882605.73361000000 | 675664.80646500000 | 1595 | 0.75 | 419.9796 | | |
| 87 | 1882605.67945000000 | 675657.92593500000 | 1599 | bkf | | 422.077681 | |
| 88 | 1882611.97218000000 | 675659.12125700000 | 1604 | 0.1 | 420.4845 | | |
| 89 | 1882618.02409000000 | 675653.51500000000 | 1612 | t | 420.8483 | | |
| 90 | 1882627.47579000000 | 675647.23359000000 | 1622 | t | 420.045 | | |
| 91 | 1882630.50306000000 | 675641.76303800000 | 1626 | bkf | | 421.696447 | |
| 92 | 1882635.01862000000 | 675647.75229500000 | 1629 | tol | 420.6845 | | |
| 93 | 1882635.03665000000 | 675647.80577300000 | 1629 | top0.5 | 419.3588 | | |
| 94 | 1882647.84869000000 | 675648.91168300000 | 1643 | t | 419.873 | | |
| 95 | 1882645.37002000000 | 675642.58641100000 | 1640 | bkf | | 421.482225 | |
| 96 | 1882654.55133000000 | 675649.77444700000 | 1649 | t | 419.8302 | | |
| 97 | 1882662.06964000000 | 675647.36748800000 | 1657 | rok | 420.2657 | | |
| 98 | 1882662.95249000000 | 675646.91887000000 | 1658 | top0.1 | 419.6845 | | |
| 99 | 1882667.37574000000 | 675643.43070400000 | 1664 | 0.7 | 419.1866 | | |
| 100 | 1882671.20290000000 | 675646.86903200000 | 1665 | bkf | | 421.436707 | |
| 101 | 1882672.67915000000 | 675638.64342900000 | 1670 | 0.6 | 419.2376 | | |
| 102 | 1882681.90634000000 | 675633.96278600000 | 1681 | fence0.3 | 419.4977 | | |
| 103 | 1882700.16716000000 | 675621.44866100000 | 1703 | fence | 419.5904 | | |
| 104 | 1882709.00817000000 | 675616.48806300000 | 1713 | rok | 419.7219 | | |
| 105 | 1882708.97679000000 | 675616.30695400000 | 1713 | top0.5 | 418.8103 | | |
| 106 | 1882716.85167000000 | 675613.54149600000 | 1722 | max0.8 | 418.5031 | | |
| 107 | 1882724.30513000000 | 675610.78962700000 | 1729 | \ | 418.9035 | | |

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|---|---|---|---|---|---|---|---|
| 108 | 1882721.31787000000 | 675620.07695300000 | 1723 | bkf | | 420.704087 | |
| 109 | 1882741.92702000000 | 675608.91538800000 | 1747 | t | 419.3138 | | |
| 110 | 1882749.81003000000 | 675605.92922900000 | 1755 | t | 419.244 | | |
| 111 | 1882758.69037000000 | 675598.89307300000 | 1767 | t | 419.0308 | | |
| 112 | 1882762.22111000000 | 675591.43924100000 | 1775 | tol | 419.3395 | | |
| 113 | 1882761.78774000000 | 675591.38803500000 | 1775 | top0.1 | 417.7539 | | |
| 114 | 1882763.69552000000 | 675588.61672800000 | 1778 | 1.0 | 417.9449 | | |
| 115 | 1882760.54314000000 | 675583.12277200000 | 1781 | bkf | | 420.350312 | |
| 116 | 1882766.68392000000 | 675581.67754000000 | 1785 | .1 | 418.6723 | | |
| 117 | 1882772.23024000000 | 675569.38239600000 | 1799 | t | 418.6059 | | |
| 118 | 1882776.67426000000 | 675563.62922100000 | 1806 | max0.6 | 418.1357 | | |
| 119 | 1882788.44727000000 | 675556.83124300000 | 1818 | rok | 418.8346 | | |
| 120 | 1882788.64978000000 | 675557.30020300000 | 1818 | top0.9 | 417.7962 | | |
| 121 | 1882793.69611000000 | 675561.22326800000 | 1823 | bkf | | 420.172533 | |
| 122 | 1882797.31163000000 | 675555.41517600000 | 1828 | 0.4 | 418.241 | | |
| 123 | 1882810.95934000000 | 675553.26429200000 | 1842 | t | 418.3841 | | |
| 124 | 1882825.29969000000 | 675546.99257200000 | 1858 | .1 | 418.2199 | | |
| 125 | 1882836.42083000000 | 675533.72678600000 | 1875 | rok | 418.3367 | | |
| 126 | 1882836.47564000000 | 675533.18337200000 | 1875 | top0.2 | 417.7877 | | |
| 127 | 1882838.47208000000 | 675528.99605500000 | 1880 | max0.5 | 417.5002 | | |
| 128 | 1882844.77689000000 | 675527.03927400000 | 1885 | bkf | | 419.656783 | |
| 129 | 1882839.55923000000 | 675525.60063800000 | 1884 | .1 | 417.8711 | | |
| 130 | 1882844.65971000000 | 675516.56995700000 | 1894 | top | 417.6516 | | |
| 131 | 1883095.40412000000 | 675532.82766700000 | | occ4 | | | 425.1081 |
| 132 | 1883146.74459000000 | 675564.47024900000 | | occ5 | | | 428.2815 |
| 133 | 1883072.02884000000 | 675400.81333700000 | | ezment | | | 418.5714 |
| 134 | 1882848.71083000000 | 675510.59128600000 | 1901 | 0.4 | 417.5423 | | |
| 135 | 1882847.51550000000 | 675516.19254600000 | 1896 | bkf | | 418.988016 | |
| 136 | 1882852.77111000000 | 675507.85011400000 | 1905 | tol | 418.2842 | | |
| 137 | 1882853.23030000000 | 675507.70040400000 | 1905 | top | 417.4797 | | |
| 138 | 1882858.88986000000 | 675509.13801700000 | 1910 | bkf | | 419.385538 | |
| 139 | 1882857.07741000000 | 675505.57060200000 | 1910 | t | 417.7051 | | |
| 140 | 1882859.66194000000 | 675504.09196800000 | 1913 | .3 | 417.5278 | | |
| 141 | 1882869.85405000000 | 675501.96553000000 | 1924 | bkf | | 418.817878 | |
| 142 | 1882870.24591000000 | 675498.23939300000 | 1925 | 0.3 | 417.6061 | | |
| 143 | 1882871.47561000000 | 675502.92476200000 | 1925 | bkf | | 419.12359 | |
| 144 | 1882874.48968000000 | 675496.10679800000 | 1930 | t | 417.9621 | | |
| 145 | 1882893.17936000000 | 675487.52919000000 | 1950 | bkf | | 419.057527 | |
| 146 | 1882886.66126000000 | 675487.52089800000 | 1946 | t | 417.7563 | | |
| 147 | 1882890.48358000000 | 675474.45436700000 | 1960 | tol | 417.8106 | | |
| 148 | 1882895.45964000000 | 675481.85405600000 | 1952 | bkf | | 418.743792 | |
| 149 | 1882890.80843000000 | 675473.23635600000 | 1960 | top | 416.6284 | | |
| 150 | 1882888.40468000000 | 675464.11171900000 | 1970 | t | 417.2183 | | |
| 151 | 1882886.41247000000 | 675459.27206800000 | 1975 | t | 417.2032 | | |
| 152 | 1882881.21353000000 | 675454.25878200000 | 1980 | b | | 418.635507 | |
| 153 | 1882884.73512000000 | 675441.33893300000 | 1994 | t | 417.0961 | | |
| 154 | 1882886.07592000000 | 675425.46540900000 | 2008 | t | 417.0417 | | |
| 155 | 1882888.60674000000 | 675419.38629600000 | 2015 | t | 417.012 | | |
| 156 | 1882891.51179000000 | 675415.69728600000 | 2020 | t | 416.8956 | | |
| 157 | 1882894.04689000000 | 675412.76669400000 | 2022 | t | 416.948 | | |
| 158 | 1882900.34672000000 | 675409.39418100000 | 2029 | t | 416.9066 | | |
| 159 | 1882909.17905000000 | 675407.32608600000 | 2039 | t | 416.9003 | | |
| 160 | 1882911.98128000000 | 675411.57723800000 | 2040 | b | | 418.349207 | |
| 161 | 1882915.17863000000 | 675406.42117600000 | 2045 | .05 | 416.7141 | | |

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|---|---|---|---|---|---|---|---|
| 162 | 1882921.38503000000 | 675405.43885400000 | 2050 | tor | 416.9331 | | |
| 163 | 1882934.02042000000 | 675404.43537700000 | 2063 | t | 416.7252 | | |
| 164 | 1882939.07412000000 | 675403.50644800000 | 2068 | top | 416.4991 | | |
| 165 | 1882946.27140000000 | 675400.52724300000 | 2076 | max.1 | 416.4022 | | |
| 166 | 1882942.90192000000 | 675394.61157700000 | 2078 | b | | 418.134923 | |
| 167 | 1882950.91772000000 | 675393.54205000000 | 2085 | .05 | 416.4755 | | |
| 168 | 1882953.57712000000 | 675388.82481900000 | 2090 | tor | 416.8135 | | |
| 169 | 1882954.96223000000 | 675384.95324600000 | 2095 | t | 416.7914 | | |
| 170 | 1882956.20488000000 | 675381.87887000000 | 2097 | .05 | 416.4918 | | |
| 171 | 1882958.91980000000 | 675377.46150300000 | 2103 | max.5 | 416.0036 | | |
| 172 | 1882962.43650000000 | 675381.11646600000 | 2101 | b | | 417.862832 | |
| 173 | 1882961.84637000000 | 675373.62347400000 | 2107 | t | 416.5224 | | |
| 174 | 1882964.36465000000 | 675370.94459800000 | 2110 | t | 416.6171 | | |
| 175 | 1882971.95469000000 | 675369.74270200000 | 2117 | t | 416.5829 | | |
| 176 | 1882974.06029000000 | 675367.77203100000 | 2120 | rok | 416.7861 | | |
| 177 | 1882974.39841000000 | 675367.36452300000 | 2120 | top | 415.9675 | | |
| 178 | 1882976.59913000000 | 675367.56381100000 | 2122 | max.3 | 415.836 | | |
| 179 | 1882977.21631000000 | 675363.51239200000 | 2123 | b | | 417.912931 | |
| 180 | 1882979.13862000000 | 675367.77285300000 | 2125 | t | 416.0445 | | |
| 181 | 1882988.60575000000 | 675368.55548600000 | 2134 | t | 415.9466 | | |
| 182 | 1882992.94533000000 | 675369.51170400000 | 2139 | t | 416.1358 | | |
| 183 | 1882990.65783000000 | 675363.84870000000 | 2137 | b | | 417.912038 | |
| 184 | 1883003.63013000000 | 675370.13559100000 | 2149 | t | 416.0937 | | |
| 185 | 1883017.15309000000 | 675368.84434700000 | 2164 | t | 416.0207 | | |
| 186 | 1883017.18837000000 | 675368.22485000000 | 2164 | tol | 416.5819 | | |
| 187 | 1883017.93387000000 | 675367.82109400000 | 2165 | top | 415.4757 | | |
| 188 | 1883017.79173000000 | 675363.61073300000 | 2167 | b | | 417.456375 | |
| 189 | 1883023.78987000000 | 675364.44622200000 | 2171 | t | 415.6717 | | |
| 190 | 1883030.58423000000 | 675361.08250000000 | 2179 | t | 415.7176 | | |
| 191 | 1883034.68769000000 | 675358.30999500000 | 2184 | top | 415.4541 | | |
| 192 | 1883035.69486000000 | 675354.00926000000 | 2186 | b | | 417.309153 | |
| 193 | 1883037.86745000000 | 675356.55633200000 | 2187 | .2 | 415.2171 | | |
| 194 | 1883042.47074000000 | 675354.79293800000 | 2192 | .02 | 415.3727 | | |
| 195 | 1883046.17774000000 | 675354.03067100000 | 2196 | t | 415.5538 | | |
| 196 | 1883048.98954000000 | 675360.53813300000 | 2196 | b | | 417.219189 | |
| 197 | 1883050.82651000000 | 675354.02872400000 | 2200 | t | 415.4671 | | |
| 198 | 1883057.84167000000 | 675356.20229300000 | 2207 | t | 415.6401 | | |
| 199 | 1883061.31094000000 | 675357.85858200000 | 2211 | t | 415.2325 | | |
| 200 | 1883066.18381000000 | 675361.11429000000 | 2216 | t | 415.2938 | | |
| 201 | 1883072.90020000000 | 675364.89444700000 | 2224 | t | 415.3437 | | |
| 202 | 1883079.63942000000 | 675367.07405500000 | 2231 | t | 415.3955 | | |
| 203 | 1883082.26825000000 | 675361.32763100000 | 2235 | b | | 416.751131 | |
| 204 | 1883088.82554000000 | 675364.17996500000 | 2241 | tol | 415.8924 | | |
| 205 | 1883089.66879000000 | 675363.72040400000 | 2242 | top | 415.0153 | | |
| 206 | 1883096.86897000000 | 675359.69553100000 | 2250 | t | 415.1863 | | |
| 207 | 1883093.25989000000 | 675357.10994600000 | 2248 | b | | 416.787104 | |
| 208 | 1883100.08374000000 | 675357.75743500000 | 2254 | tor | 415.3859 | | |
| 209 | 1883104.95817000000 | 675354.38490500000 | 2260 | t | 414.8335 | | |
| 210 | 1883107.53667000000 | 675345.34123600000 | 2270 | b | | 416.606551 | |
| 211 | 1883110.34228000000 | 675347.04148000000 | 2269 | t | 415.4644 | | |
| 212 | 1883111.03326000000 | 675345.21238700000 | 2271 | rok | 415.4157 | | |
| 213 | 1883111.10644000000 | 675345.11493400000 | 2271 | top | 414.9707 | | |
| 214 | 1883111.53021000000 | 675341.81048600000 | 2275 | max | 414.5164 | | |
| 215 | 1883112.50927000000 | 675338.69315900000 | 2278 | max | 414.7462 | | |

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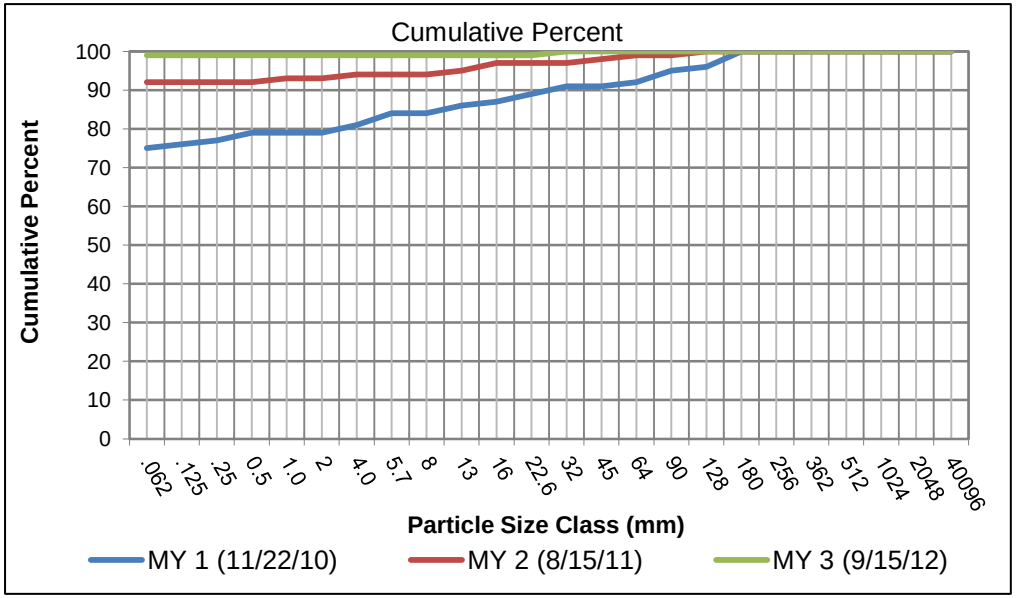
|---|---|---|---|---|---|---|---|
| 216 | 1883113.37061000000 | 675334.25880800000 | 2282 | t | 415.1117 | | |
| 217 | 1883116.11727000000 | 675319.07281300000 | 2298 | t | 414.492 | | |
| 218 | 1883118.84900000000 | 675312.57067300000 | 2304 | t | 414.8885 | | |
| 219 | 1883113.37626000000 | 675312.85903400000 | 2301 | b | | 416.250098 | |
| 220 | 1883125.46682000000 | 675302.98187900000 | 2316 | tol | 415.1991 | | |
| 221 | 1883126.30757000000 | 675302.90213600000 | 2317 | top | 414.1014 | | |
| 222 | 1883128.01164000000 | 675296.23853500000 | 2322 | b | | 416.097095 | |
| 223 | 1883128.80396000000 | 675301.30440300000 | 2320 | tol | 414.8836 | | |
| 224 | 1883130.57359000000 | 675300.32719200000 | 2322 | max.4 | 413.8483 | | |
| 225 | 1883135.46398000000 | 675297.98208900000 | 2327 | tor | 414.3764 | | |
| 226 | 1883147.39005000000 | 675293.73124100000 | 2339 | t | 413.8992 | | |
| 227 | 1883167.29998000000 | 675296.54122400000 | 2357 | b | | 415.423341 | |
| 228 | 1883162.42813000000 | 675298.79231600000 | 2353 | max.8 | 413.2961 | | |
| 229 | 1883159.63961000000 | 675297.26026700000 | 2350 | top rod ht 2.2 | 414.7009 | | |
| 230 | 1883157.72753000000 | 675296.60520900000 | 2349 | bor | 414.3941 | | |
| 231 | 1883166.90660000000 | 675302.75741500000 | 2360 | t | 414.0023 | | |
| 232 | 1883170.70878000000 | 675306.82357500000 | 2365 | t | 414.1625 | | |
| 233 | 1883183.86351000000 | 675314.09715700000 | 2380 | t | 413.7436 | | |
| 234 | 1883185.81826000000 | 675319.15495400000 | 2384 | b | | 415.06842 | |
| 235 | 1883352.73805000000 | 675169.49077500000 | 0 | occ6 | | | 418.8624 |
| 236 | 1883383.63608000000 | 675155.23354600000 | | occ7 | | | 420.551 |
| 237 | 1883383.64289000000 | 675155.23040600000 | | occ7 10-12 | | | 420.5117 |
| 238 | 1883186.17014000000 | 675315.56086800000 | 2383 | t | 413.1799 | | |
| 239 | 1883195.01257000000 | 675315.88283700000 | 2390 | t | 413.3877 | | |
| 240 | 1883199.27182000000 | 675312.11533300000 | 2396 | toj | 413.5475 | | |
| 241 | 1883200.96134000000 | 675311.74987800000 | 2397 | top0.6 | 412.3578 | | |
| 242 | 1883198.40986000000 | 675305.99384300000 | 2398 | bkf | | 414.732276 | |
| 243 | 1883202.39028000000 | 675309.22804600000 | 2400 | tol | 413.3787 | | |
| 244 | 1883203.96919000000 | 675307.52952700000 | 2402 | 0.2 | 412.6633 | | |
| 245 | 1883209.36941000000 | 675302.77254500000 | 2410 | t | 413.0032 | | |
| 246 | 1883213.64807000000 | 675299.13600800000 | 2415 | t | 413.0741 | | |
| 247 | 1883220.97170000000 | 675294.28707300000 | 2424 | max | 412.4725 | | |
| 249 | 1883226.30377000000 | 675291.52271700000 | 2430 | max | 412.4012 | | |
| 250 | 1883234.98639000000 | 675292.69862000000 | 2438 | tor | 413.5216 | | |
| 251 | 1883236.02727000000 | 675287.43222000000 | 2438 | bkf | | 414.763105 | |
| 252 | 1883240.42950000000 | 675294.41408300000 | 2443 | rok | 412.9012 | | |
| 253 | 1883249.46873000000 | 675297.80035800000 | 2452 | t | 411.9627 | | |
| 254 | 1883255.02195000000 | 675288.93058000000 | 2459 | bkf | | 413.889798 | |
| 255 | 1883252.50302000000 | 675296.77122200000 | 2455 | tol | 412.3808 | | |
| 256 | 1883255.27809000000 | 675296.69292700000 | 2458 | max0 | 411.401 | | |
| 257 | 1883263.95369000000 | 675294.17496600000 | 2467 | tor | 412.191 | | |
| 258 | 1883281.93586000000 | 675290.42899800000 | 2485 | tol | 411.818 | | |
| 259 | 1883282.81780000000 | 675289.68311400000 | 2486 | top0.5 | 410.7909 | | |
| 260 | 1883287.41176000000 | 675288.75919000000 | 2491 | max0.7 | | | 410.681 |
| 261 | 1883286.85716000000 | 675282.26223500000 | 2492 | bkf | | 412.968753 | |
| 262 | 1883292.53554000000 | 675287.71678100000 | 2496 | tor | 411.5896 | | |
| 263 | 1883301.48574000000 | 675283.86996100000 | 2506 | tol | 411.5313 | | |
| 264 | 1883306.04332000000 | 675281.31264100000 | 2511 | t | 410.4868 | | |
| 265 | 1883308.69608000000 | 675274.77042200000 | 2517 | bkf | | 412.508428 | |
| 266 | 1883318.85675000000 | 675273.48831100000 | 2526 | rok | 411.1892 | | |
| 267 | 1883318.94002000000 | 675273.07242200000 | 2526 | t | 410.399 | | |
| 268 | 1883332.89305000000 | 675261.03635800000 | 2545 | t | 410.0778 | | |
| 269 | 1883328.99937000000 | 675255.08933300000 | 2549 | bkf | | 412.152929 | |
| 270 | 1883336.51155000000 | 675257.29475300000 | 2550 | rok | 410.7601 | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 271 | 1883336.50163000000 | 675257.21513200000 | 2550 | 0.1 | 409.8759 | | |
| 272 | 1883341.50710000000 | 675243.41686800000 | 2565 | max0.7 | 409.2943 | | |
| 273 | 1883334.24342000000 | 675231.38919400000 | 2580 | denris | 411.1222 | | |
| 274 | 1883326.70312000000 | 675221.85030200000 | 2590 | tol | 410.3747 | | |
| 275 | 1883326.57467000000 | 675221.05961100000 | 2592 | 0.2 | 409.3635 | | |
| 276 | 1883323.30955000000 | 675219.44091000000 | 2595 | tol | 410.0789 | | |
| 277 | 1883322.82935000000 | 675218.75011200000 | 2595 | 0.7 | 408.9042 | | |
| 278 | 1883320.18221000000 | 675214.14178300000 | 2601 | max0.5 | 408.7214 | | |
| 279 | 1883326.19694000000 | 675213.37764400000 | 2698 | bkf | | 411.417417 | |
| 280 | 1883317.97186000000 | 675211.74342100000 | 2605 | .4 | 409.2357 | | |
| 281 | 1883313.64876000000 | 675206.10856700000 | 2611 | t | 409.6462 | | |
| 282 | 1883308.94370000000 | 675199.99505700000 | 2620 | .45 | 409.1221 | | |
| 283 | 1883305.47784000000 | 675195.82241600000 | 2625 | tol | 409.8154 | | |
| 284 | 1883304.68535000000 | 675195.64125100000 | 2625 | top.9 | 408.5296 | | |
| 285 | 1883301.03551000000 | 675190.17693600000 | 2632 | .9 | 408.5497 | | |
| 286 | 1883297.44735000000 | 675183.10352900000 | 2640 | bop.4 | 409.0512 | | |
| 287 | 1883296.24566000000 | 675179.82786400000 | 2643 | bvrdm | 410.3592 | | |
| 288 | 1883294.48107000000 | 675174.30561300000 | 2649 | tol | 409.3347 | | |
| 289 | 1883294.56636000000 | 675173.80935900000 | 2649 | top1.2 | 407.8923 | | |
| 290 | 1883291.87559000000 | 675166.51374100000 | 2657 | .55 | 408.5068 | | |
| 291 | 1883291.44447000000 | 675160.58474700000 | 2663 | tor.05 | 408.8741 | | |
| 292 | 1883290.29821000000 | 675149.71592700000 | 2674 | .3 | 408.7132 | | |
| 293 | 1883289.91336000000 | 675143.16724300000 | 2680 | .65 | 408.3584 | | |
| 294 | 1883291.28970000000 | 675137.71595500000 | 2686 | .1 | 408.8382 | | |
| 295 | 1883291.50339000000 | 675136.87030500000 | 2686 | debr | 409.396 | | |
| 296 | 1883293.21559000000 | 675133.31113300000 | 2690 | .3 | 408.1425 | | |
| 297 | 1883295.26722000000 | 675122.22804300000 | 2702 | 1.05 | 407.3805 | | |
| 298 | 1883297.72730000000 | 675131.74250300000 | 2693 | b | | 410.318957 | |
| 299 | 1883296.87175000000 | 675143.48695400000 | 2680 | b | | 411.773495 | |
| 300 | 1883300.47203000000 | 675165.79339400000 | 2656 | b | | 410.61823 | |
| 301 | 1883307.73076000000 | 675187.85021500000 | 2630 | b | | 411.628858 | |
| 302 | 1883371.30152000000 | 675135.39548300000 | | ezment | | | 419.4805 |

**Figure 7.0. Pebble Counts - Monitoring Year Three - 2012 - UT to Bear Creek Stream Restoration (EEP Project #92347)**

| Cross Section One-Northern UT | | | 2012 | | |
|---|---|---|---|---|---|
| **Descript.** | **Material** | **Size (mm)** | **Total #** | **Class %** | **Cum %** |
| **Silt/Clay** | Silt/Clay | .062 | 99 | 99 | 99 |
| **Sand** | Very Fine Sand | .125 | | 0 | 99 |
| | Fine Sand | .25 | | 0 | 99 |
| | Medium Sand | 0.5 | | 0 | 99 |
| | Coarse Sand | 1.0 | | 0 | 99 |
| | Very Course Sand | 2 | | 0 | 99 |
| **Gravel** | Very Fine Gravel | 4.0 | | 0 | 99 |
| | Fine Gravel | 5.7 | | 0 | 99 |
| | Fine Gravel | 8 | | 0 | 99 |
| | Medium Gravel | 13 | | 0 | 99 |
| | Medium Gravel | 16 | | 0 | 99 |
| | Coarse Gravel | 22.6 | | 0 | 99 |
| | Coarse Gravel | 32 | 1 | 1 | 100 |
| | Very Course Gravel | 45 | | 0 | 100 |
| | Very Course Gravel | 64 | | 0 | 100 |
| **Cobble** | Small Cobble | 90 | | 0 | 100 |
| | Small Cobble | 128 | | 0 | 100 |
| | Medium Cobble | 180 | | 0 | 100 |
| | Large Cobble | 256 | | 0 | 100 |
| **Boulder** | Small Boulders | 362 | | 0 | 100 |
| | Small Boulders | 512 | | 0 | 100 |
| | Medium Boulders | 1024 | | 0 | 100 |
| | Large Boulders | 2048 | | 0 | 100 |
| **Bedrock** | Bedrock | 40096 | | 0 | 100 |
| | Total | | 100 | | |



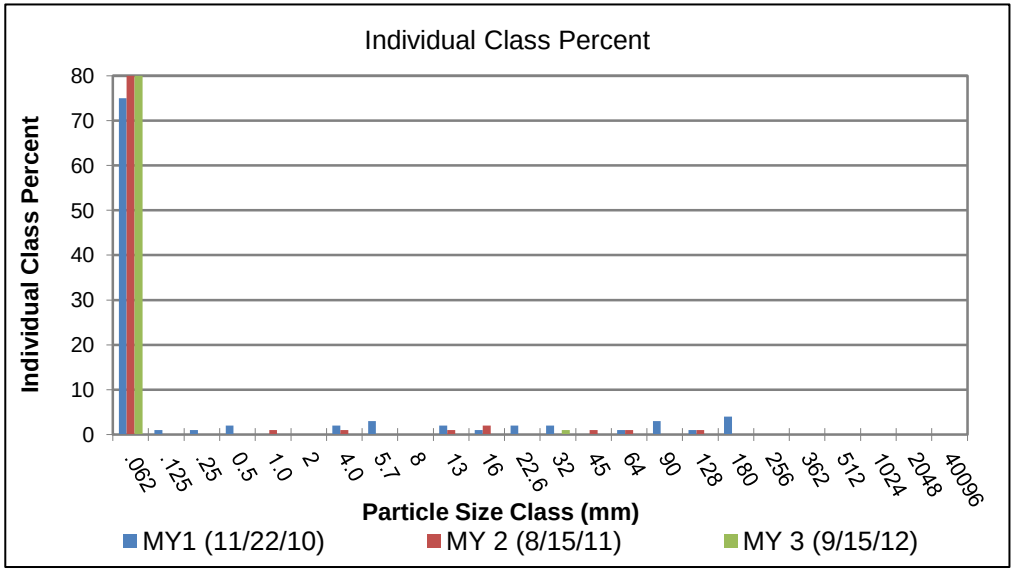
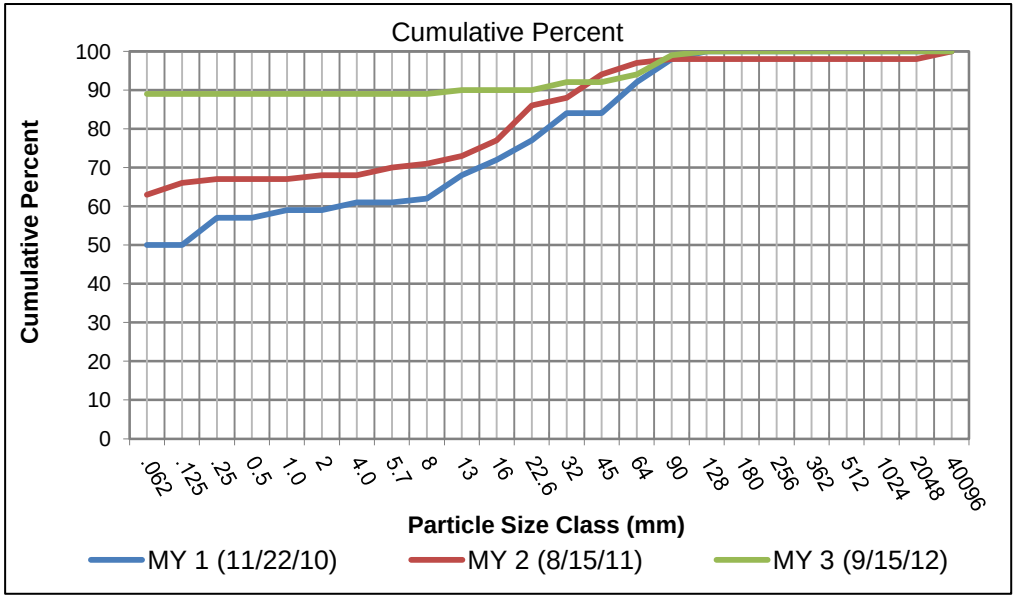



**Figure 7.0. Pebble Counts - Monitoring Year Three - 2012 - UT to Bear Creek Stream Restoration (EEP Project #92347)**

| Cross Section Two-Northern UT | | | 2012 | | |
|---|---|---|---|---|---|
| **Descript.** | **Material** | **Size (mm)** | **Total #** | **Class %** | **Cum %** |
| **Silt/Clay** | Silt/Clay | .062 | 89 | 89 | 89 |
| **Sand** | Very Fine Sand | .125 | | 0 | 89 |
| | Fine Sand | .25 | | 0 | 89 |
| | Medium Sand | 0.5 | | 0 | 89 |
| | Coarse Sand | 1.0 | | 0 | 89 |
| | Very Course Sand | 2 | | 0 | 89 |
| **Gravel** | Very Fine Gravel | 4.0 | | 0 | 89 |
| | Fine Gravel | 5.7 | | 0 | 89 |
| | Fine Gravel | 8 | | 0 | 89 |
| | Medium Gravel | 13 | 1 | 1 | 90 |
| | Medium Gravel | 16 | | 0 | 90 |
| | Coarse Gravel | 22.6 | | 0 | 90 |
| | Coarse Gravel | 32 | 2 | 2 | 92 |
| | Very Course Gravel | 45 | | 0 | 92 |
| | Very Course Gravel | 64 | 2 | 2 | 94 |
| **Cobble** | Small Cobble | 90 | 5 | 5 | 99 |
| | Small Cobble | 128 | 1 | 1 | 100 |
| | Medium Cobble | 180 | | 0 | 100 |
| | Large Cobble | 256 | | 0 | 100 |
| **Boulder** | Small Boulders | 362 | | 0 | 100 |
| | Small Boulders | 512 | | 0 | 100 |
| | Medium Boulders | 1024 | | 0 | 100 |
| | Large Boulders | 2048 | | 0 | 100 |
| **Bedrock** | Bedrock | 40096 | | 0 | 100 |
| | Total | | 100 | | |



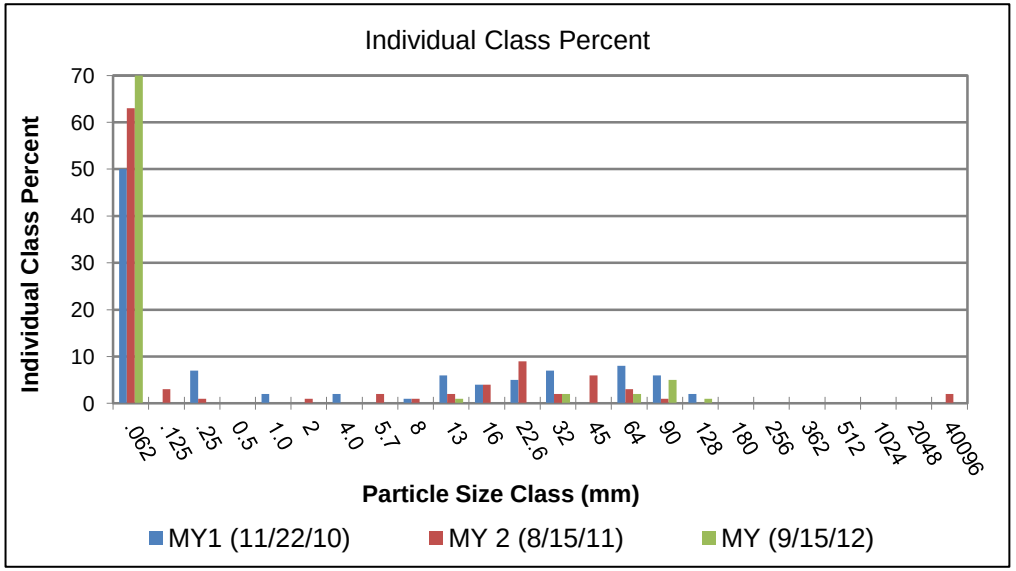
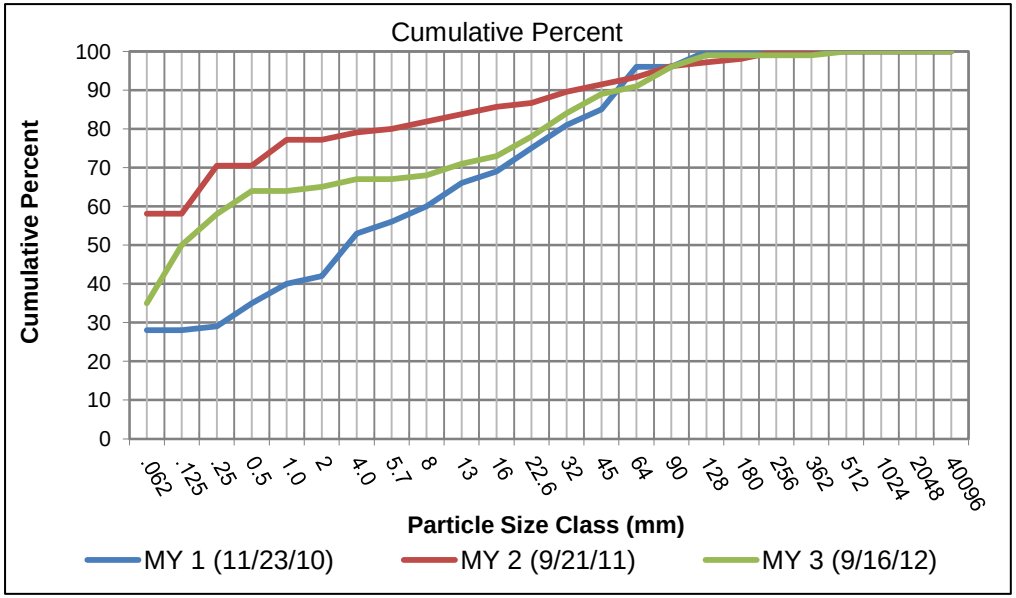



**Figure 7.0. Pebble Counts - Monitoring Year Three - 2012 - UT to Bear Creek Stream Restoration (EEP Project #92347)**

| Cross Section Three-Northern UT | | | 2012 | | |
|---|---|---|---|---|---|
| **Descript.** | **Material** | **Size (mm)** | **Total #** | **Class %** | **Cum %** |
| **Silt/Clay** | Silt/Clay | .062 | 35 | 35 | 35 |
| **Sand** | Very Fine Sand | .125 | 15 | 15 | 50 |
| | Fine Sand | .25 | 8 | 8 | 58 |
| | Medium Sand | 0.5 | 6 | 6 | 64 |
| | Coarse Sand | 1.0 | | 0 | 64 |
| | Very Course Sand | 2 | 1 | 1 | 65 |
| **Gravel** | Very Fine Gravel | 4.0 | 2 | 2 | 67 |
| | Fine Gravel | 5.7 | | 0 | 67 |
| | Fine Gravel | 8 | 1 | 1 | 68 |
| | Medium Gravel | 13 | 3 | 3 | 71 |
| | Medium Gravel | 16 | 2 | 2 | 73 |
| | Coarse Gravel | 22.6 | 5 | 5 | 78 |
| | Coarse Gravel | 32 | 6 | 6 | 84 |
| | Very Course Gravel | 45 | 5 | 5 | 89 |
| | Very Course Gravel | 64 | 2 | 2 | 91 |
| **Cobble** | Small Cobble | 90 | 5 | 5 | 96 |
| | Small Cobble | 128 | 3 | 3 | 99 |
| | Medium Cobble | 180 | | 0 | 99 |
| | Large Cobble | 256 | | 0 | 99 |
| **Boulder** | Small Boulders | 362 | | 0 | 99 |
| | Small Boulders | 512 | 1 | 1 | 100 |
| | Medium Boulders | 1024 | | 0 | 100 |
| | Large Boulders | 2048 | | 0 | 100 |
| **Bedrock** | Bedrock | 40096 | | 0 | 100 |
| | Total | | 100 | | |



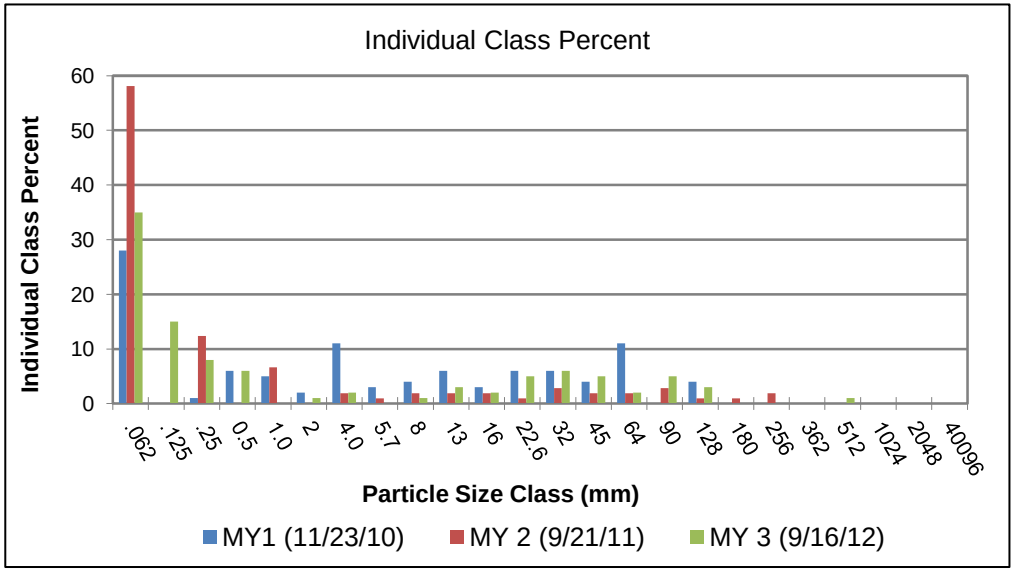
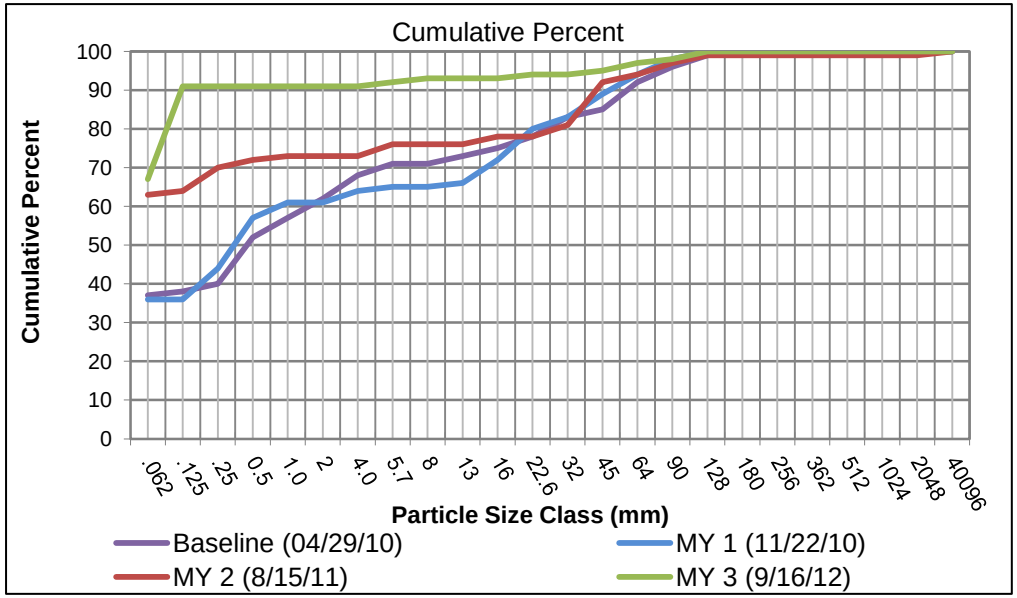



**Figure 7.0. Pebble Counts - Monitoring Year Three - 2012 - UT to Bear Creek Stream Restoration (EEP Project #92347)**

| Cross Section Four-Northern UT | | | 2012 | | |
|---|---|---|---|---|---|
| **Descript.** | **Material** | **Size (mm)** | **Total #** | **Class %** | **Cum %** |
| **Silt/Clay** | Silt/Clay | .062 | 67 | 67 | 67 |
| **Sand** | Very Fine Sand | .125 | 24 | 24 | 91 |
| | Fine Sand | .25 | | 0 | 91 |
| | Medium Sand | 0.5 | | 0 | 91 |
| | Coarse Sand | 1.0 | | 0 | 91 |
| | Very Course Sand | 2 | | 0 | 91 |
| **Gravel** | Very Fine Gravel | 4.0 | | 0 | 91 |
| | Fine Gravel | 5.7 | 1 | 1 | 92 |
| | Fine Gravel | 8 | 1 | 1 | 93 |
| | Medium Gravel | 13 | | 0 | 93 |
| | Medium Gravel | 16 | | 0 | 93 |
| | Coarse Gravel | 22.6 | 1 | 1 | 94 |
| | Coarse Gravel | 32 | | 0 | 94 |
| | Very Course Gravel | 45 | 1 | 1 | 95 |
| | Very Course Gravel | 64 | 2 | 2 | 97 |
| **Cobble** | Small Cobble | 90 | 1 | 1 | 98 |
| | Small Cobble | 128 | 2 | 2 | 100 |
| | Medium Cobble | 180 | | 0 | 100 |
| | Large Cobble | 256 | | 0 | 100 |
| **Boulder** | Small Boulders | 362 | | 0 | 100 |
| | Small Boulders | 512 | | 0 | 100 |
| | Medium Boulders | 1024 | | 0 | 100 |
| | Large Boulders | 2048 | | 0 | 100 |
| **Bedrock** | Bedrock | 40096 | | 0 | 100 |
| | Total | | 100 | | |



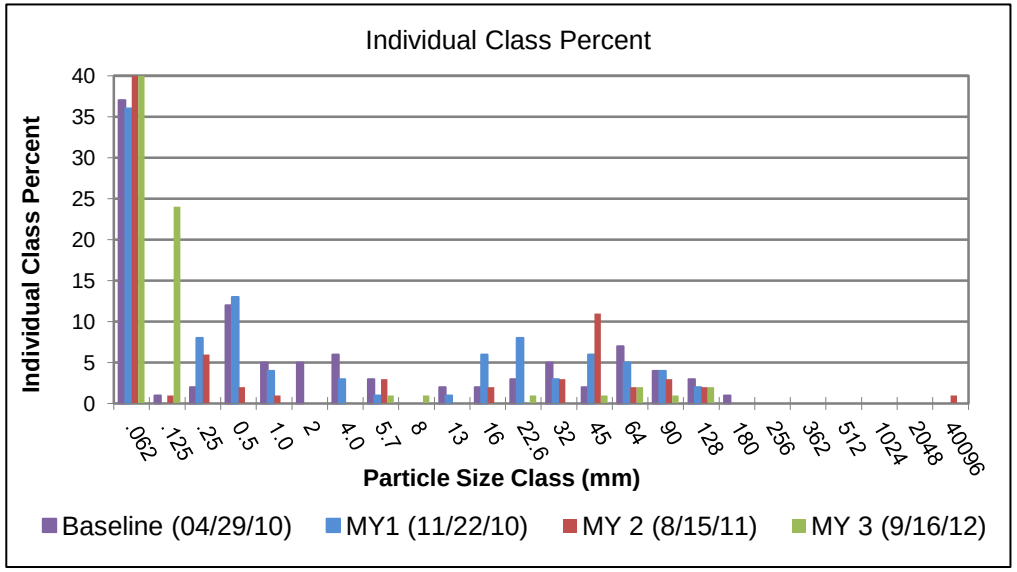
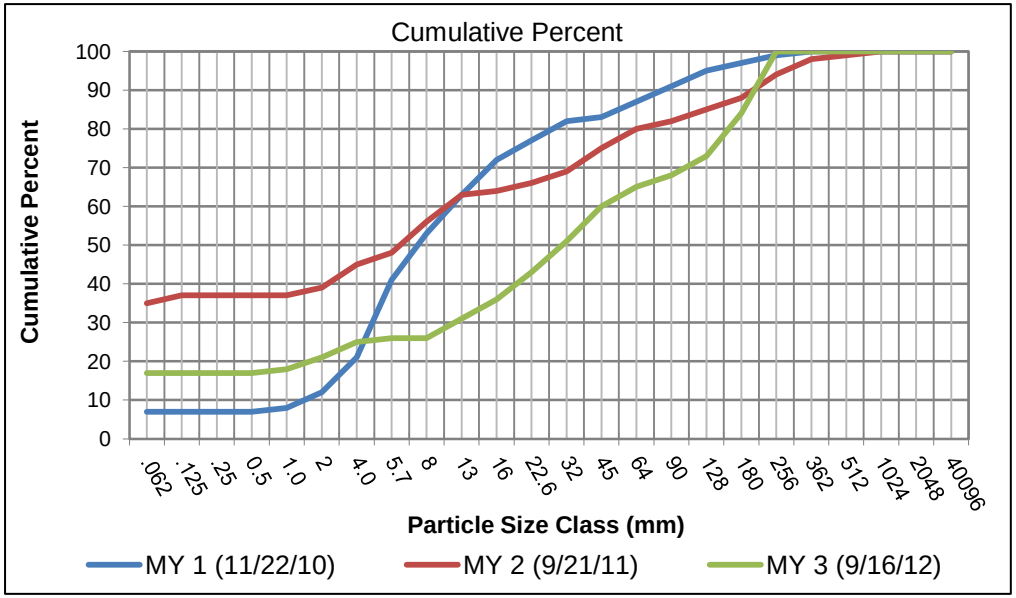



**Figure 7.0. Pebble Counts - Monitoring Year Three - 2012 - UT to Bear Creek Stream Restoration (EEP Project #92347)**

| Cross Section Five-Northern UT | | | 2012 | | |
|---|---|---|---|---|---|
| **Descript.** | **Material** | **Size (mm)** | **Total #** | **Class %** | **Cum %** |
| **Silt/Clay** | Silt/Clay | .062 | 17 | 17 | 17 |
| **Sand** | Very Fine Sand | .125 | 0 | 0 | 17 |
| | Fine Sand | .25 | 0 | 0 | 17 |
| | Medium Sand | 0.5 | 0 | 0 | 17 |
| | Coarse Sand | 1.0 | 1 | 1 | 18 |
| | Very Course Sand | 2 | 3 | 3 | 21 |
| **Gravel** | Very Fine Gravel | 4.0 | 4 | 4 | 25 |
| | Fine Gravel | 5.7 | 1 | 1 | 26 |
| | Fine Gravel | 8 | 0 | 0 | 26 |
| | Medium Gravel | 13 | 5 | 5 | 31 |
| | Medium Gravel | 16 | 5 | 5 | 36 |
| | Coarse Gravel | 22.6 | 7 | 7 | 43 |
| | Coarse Gravel | 32 | 8 | 8 | 51 |
| | Very Course Gravel | 45 | 9 | 9 | 60 |
| | Very Course Gravel | 64 | 5 | 5 | 65 |
| **Cobble** | Small Cobble | 90 | 3 | 3 | 68 |
| | Small Cobble | 128 | 5 | 5 | 73 |
| | Medium Cobble | 180 | 11 | 11 | 84 |
| | Large Cobble | 256 | 16 | 16 | 100 |
| **Boulder** | Small Boulders | 362 | 0 | 0 | 100 |
| | Small Boulders | 512 | 0 | 0 | 100 |
| | Medium Boulders | 1024 | 0 | 0 | 100 |
| | Large Boulders | 2048 | | 0 | 100 |
| **Bedrock** | Bedrock | 40096 | | 0 | 100 |
| | Total | | 100 | | |



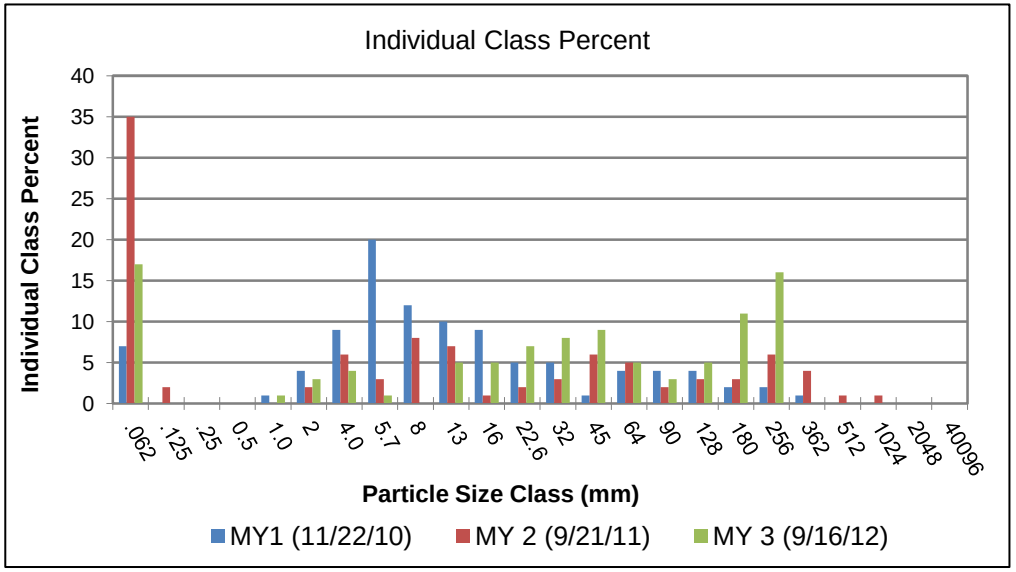
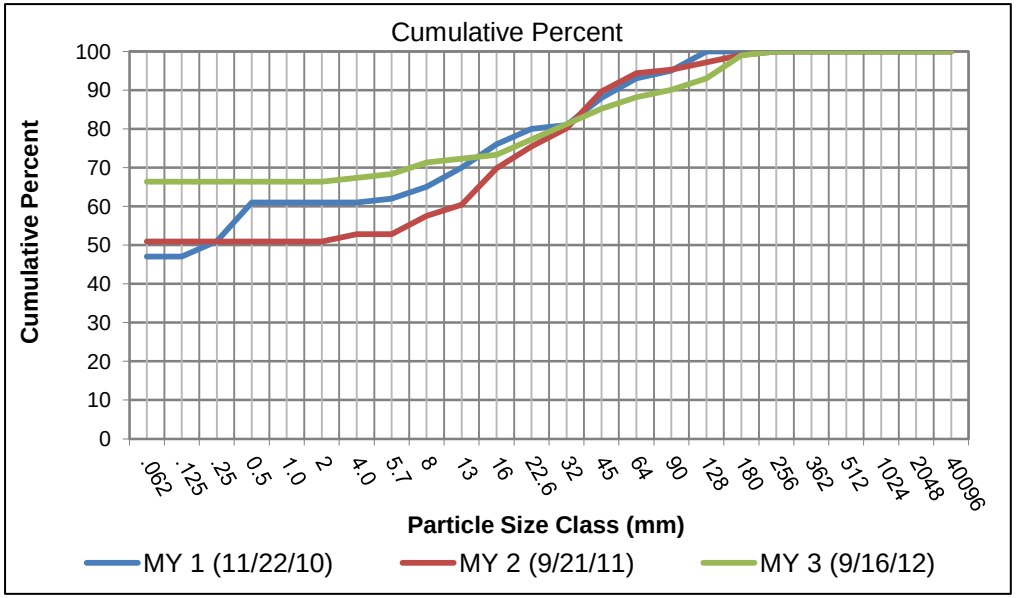



**Figure 7.0. Pebble Counts - Monitoring Year Three - 2012 - UT to Bear Creek Stream Restoration (EEP Project #92347)**

| Cross Section Six-Northern UT | | | 2012 | | |
|---|---|---|---|---|---|
| **Descript.** | **Material** | **Size (mm)** | **Total #** | **Class %** | **Cum %** |
| **Silt/Clay** | Silt/Clay | .062 | 67 | 66 | 66 |
| **Sand** | Very Fine Sand | .125 | | 0 | 66 |
| | Fine Sand | .25 | | 0 | 66 |
| | Medium Sand | 0.5 | | 0 | 66 |
| | Coarse Sand | 1.0 | | 0 | 66 |
| | Very Course Sand | 2 | | 0 | 66 |
| **Gravel** | Very Fine Gravel | 4.0 | 1 | 1 | 67 |
| | Fine Gravel | 5.7 | 1 | 1 | 68 |
| | Fine Gravel | 8 | 3 | 3 | 71 |
| | Medium Gravel | 13 | 1 | 1 | 72 |
| | Medium Gravel | 16 | 1 | 1 | 73 |
| | Coarse Gravel | 22.6 | 4 | 4 | 77 |
| | Coarse Gravel | 32 | 4 | 4 | 81 |
| | Very Course Gravel | 45 | 4 | 4 | 85 |
| | Very Course Gravel | 64 | 3 | 3 | 88 |
| **Cobble** | Small Cobble | 90 | 2 | 2 | 90 |
| | Small Cobble | 128 | 3 | 3 | 93 |
| | Medium Cobble | 180 | 6 | 6 | 99 |
| | Large Cobble | 256 | 1 | 1 | 100 |
| **Boulder** | Small Boulders | 362 | | 0 | 100 |
| | Small Boulders | 512 | | 0 | 100 |
| | Medium Boulders | 1024 | | 0 | 100 |
| | Large Boulders | 2048 | | 0 | 100 |
| **Bedrock** | Bedrock | 40096 | | 0 | 100 |
| | Total | | 101 | | |



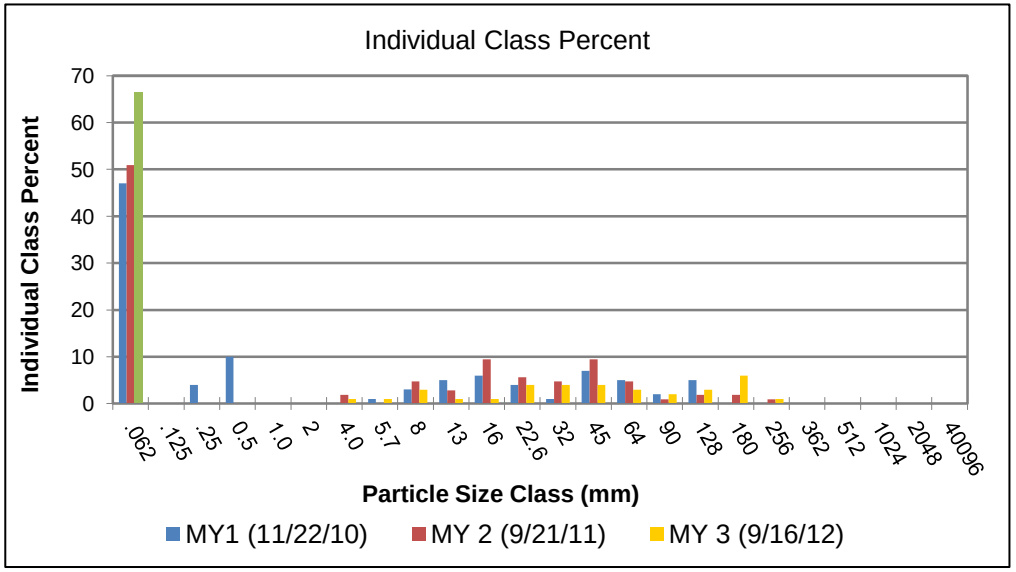
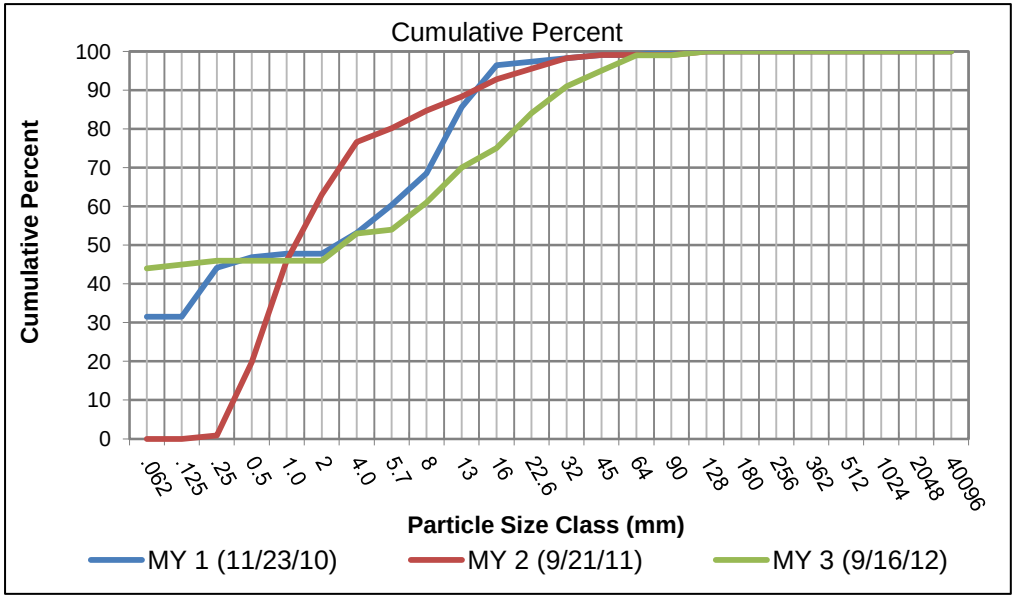



**Figure 7.0. Pebble Counts - Monitoring Year Three - 2012 - UT to Bear Creek Stream Restoration (EEP Project #92347)**

| Cross Section Seven-Southern UT | | | 2012 | | |
|---|---|---|---|---|---|
| **Descript.** | **Material** | **Size (mm)** | **Total #** | **Class %** | **Cum %** |
| **Silt/Clay** | Silt/Clay | .062 | 44 | 44 | 44 |
| **Sand** | Very Fine Sand | .125 | 1 | 1 | 45 |
| | Fine Sand | .25 | 1 | 1 | 46 |
| | Medium Sand | 0.5 | | 0 | 46 |
| | Coarse Sand | 1.0 | | 0 | 46 |
| | Very Course Sand | 2 | | 0 | 46 |
| **Gravel** | Very Fine Gravel | 4.0 | 7 | 7 | 53 |
| | Fine Gravel | 5.7 | 1 | 1 | 54 |
| | Fine Gravel | 8 | 7 | 7 | 61 |
| | Medium Gravel | 13 | 9 | 9 | 70 |
| | Medium Gravel | 16 | 5 | 5 | 75 |
| | Coarse Gravel | 22.6 | 9 | 9 | 84 |
| | Coarse Gravel | 32 | 7 | 7 | 91 |
| | Very Course Gravel | 45 | 4 | 4 | 95 |
| | Very Course Gravel | 64 | 4 | 4 | 99 |
| **Cobble** | Small Cobble | 90 | | 0 | 99 |
| | Small Cobble | 128 | 1 | 1 | 100 |
| | Medium Cobble | 180 | | 0 | 100 |
| | Large Cobble | 256 | | 0 | 100 |
| **Boulder** | Small Boulders | 362 | | 0 | 100 |
| | Small Boulders | 512 | | 0 | 100 |
| | Medium Boulders | 1024 | | 0 | 100 |
| | Large Boulders | 2048 | | 0 | 100 |
| **Bedrock** | Bedrock | 40096 | | 0 | 100 |
| | Total | | 100 | | |



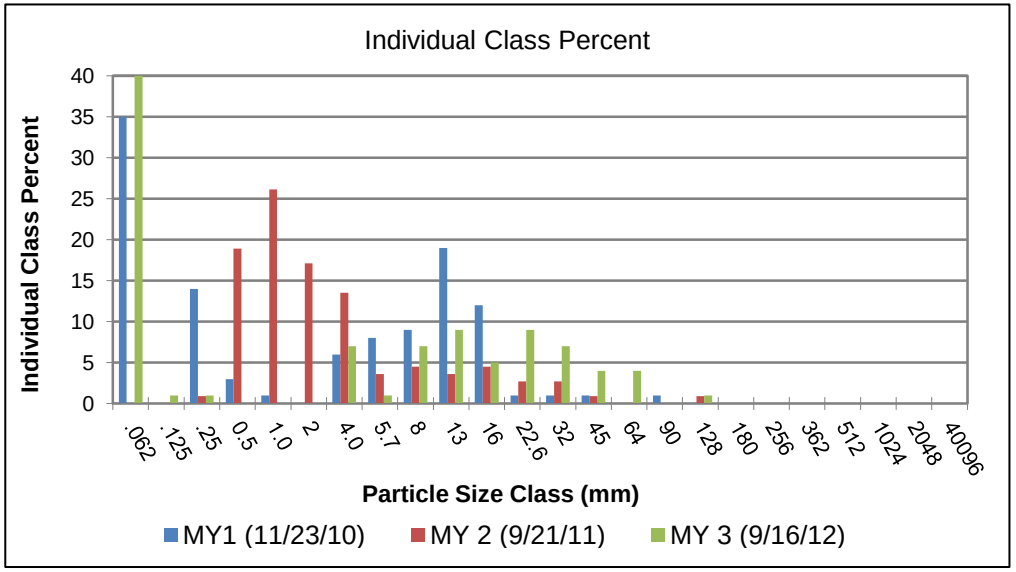
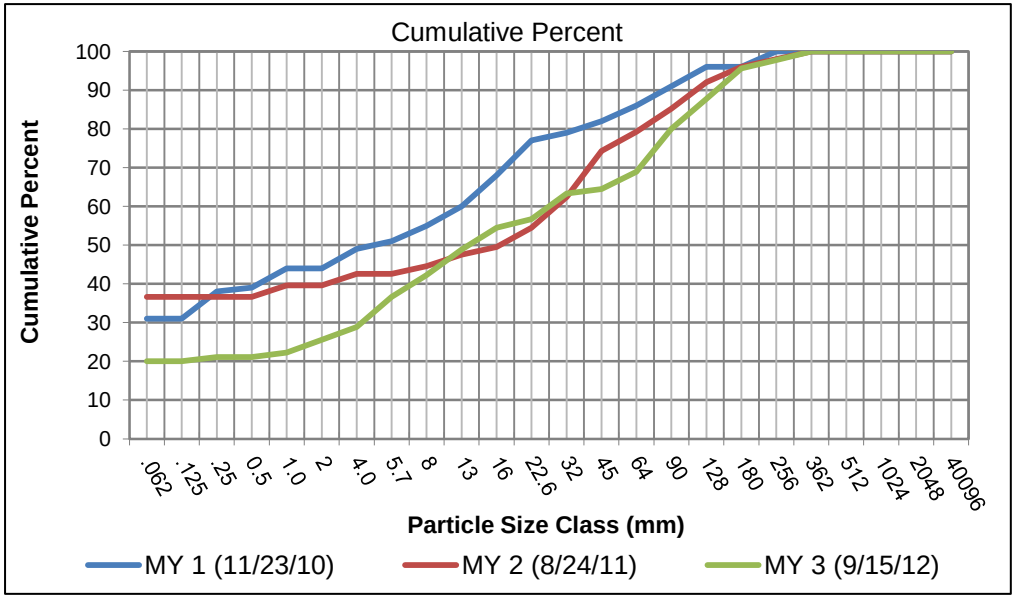



**Figure 7.0. Pebble Counts - Monitoring Year Three - 2012 - UT to Bear Creek Stream Restoration (EEP Project #92347)**

| Cross Section Eight-Southern UT | | | 2012 | | |
|---|---|---|---|---|---|
| **Descript.** | **Material** | **Size (mm)** | **Total #** | **Class %** | **Cum %** |
| **Silt/Clay** | Silt/Clay | .062 | 18 | 20 | 20 |
| **Sand** | Very Fine Sand | .125 | | 0 | 20 |
| | Fine Sand | .25 | 1 | 1 | 21 |
| | Medium Sand | 0.5 | | 0 | 21 |
| | Coarse Sand | 1.0 | 1 | 1 | 22 |
| | Very Course Sand | 2 | 3 | 3 | 26 |
| **Gravel** | Very Fine Gravel | 4.0 | 3 | 3 | 29 |
| | Fine Gravel | 5.7 | 7 | 8 | 37 |
| | Fine Gravel | 8 | 5 | 6 | 42 |
| | Medium Gravel | 13 | 6 | 7 | 49 |
| | Medium Gravel | 16 | 5 | 6 | 54 |
| | Coarse Gravel | 22.6 | 2 | 2 | 57 |
| | Coarse Gravel | 32 | 6 | 7 | 63 |
| | Very Course Gravel | 45 | 1 | 1 | 64 |
| | Very Course Gravel | 64 | 4 | 4 | 69 |
| **Cobble** | Small Cobble | 90 | 10 | 11 | 80 |
| | Small Cobble | 128 | 7 | 8 | 88 |
| | Medium Cobble | 180 | 7 | 8 | 96 |
| | Large Cobble | 256 | 2 | 2 | 98 |
| **Boulder** | Small Boulders | 362 | 2 | 2 | 100 |
| | Small Boulders | 512 | | 0 | 100 |
| | Medium Boulders | 1024 | | 0 | 100 |
| | Large Boulders | 2048 | | 0 | 100 |
| **Bedrock** | Bedrock | 40096 | | 0 | 100 |
| | Total | | 90 | | |



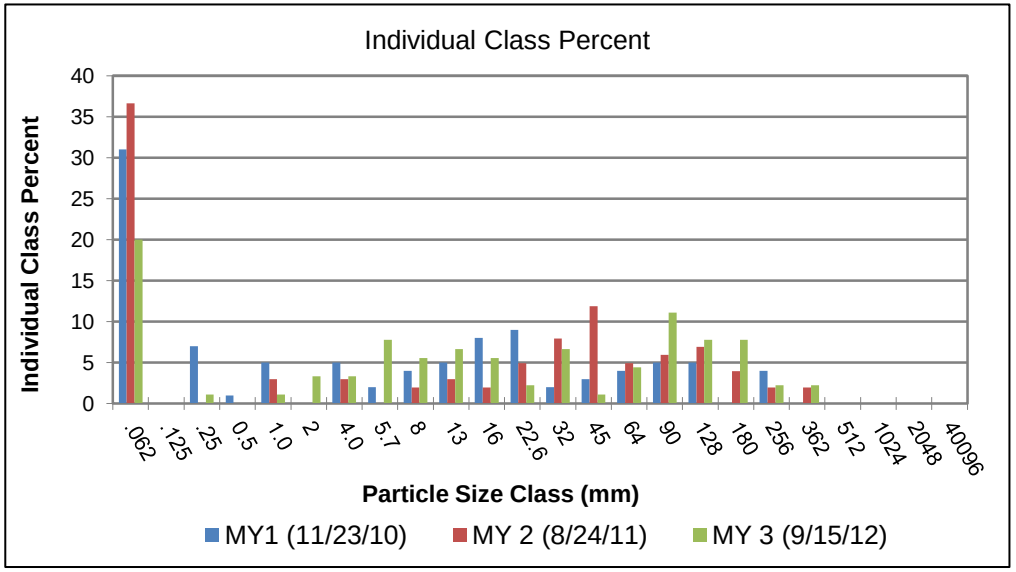
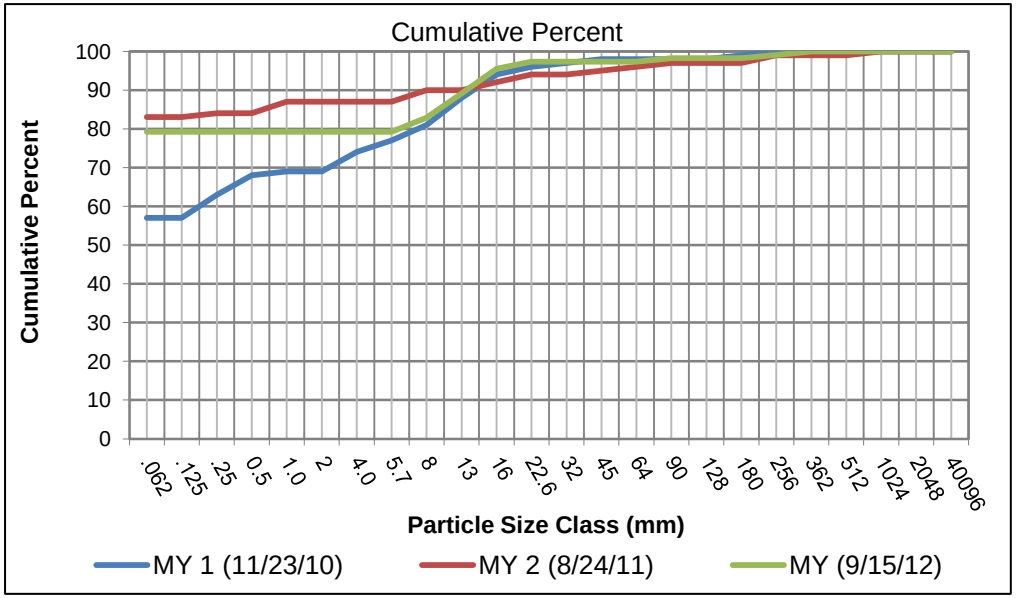
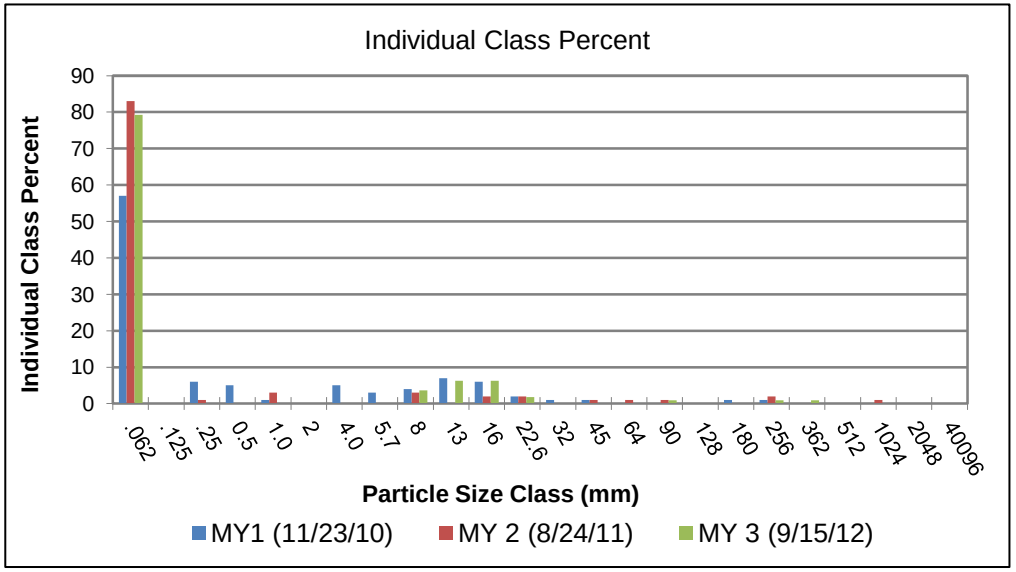



**Figure 7.0. Pebble Counts - Monitoring Year Three - 2012 - UT to Bear Creek Stream Restoration (EEP Project #92347)**

| Cross Section Nine-Southern UT | | | 2012 | | |
|---|---|---|---|---|---|
| **Descript.** | **Material** | **Size (mm)** | **Total #** | **Class %** | **Cum %** |
| **Silt/Clay** | Silt/Clay | .062 | 88 | 79 | 79 |
| **Sand** | Very Fine Sand | .125 | | 0 | 79 |
| | Fine Sand | .25 | | 0 | 79 |
| | Medium Sand | 0.5 | | 0 | 79 |
| | Coarse Sand | 1.0 | | 0 | 79 |
| | Very Course Sand | 2 | | 0 | 79 |
| **Gravel** | Very Fine Gravel | 4.0 | | 0 | 79 |
| | Fine Gravel | 5.7 | | 0 | 79 |
| | Fine Gravel | 8 | 4 | 4 | 83 |
| | Medium Gravel | 13 | 7 | 6 | 89 |
| | Medium Gravel | 16 | 7 | 6 | 95 |
| | Coarse Gravel | 22.6 | 2 | 2 | 97 |
| | Coarse Gravel | 32 | | 0 | 97 |
| | Very Course Gravel | 45 | | 0 | 97 |
| | Very Course Gravel | 64 | | 0 | 97 |
| **Cobble** | Small Cobble | 90 | 1 | 1 | 98 |
| | Small Cobble | 128 | | 0 | 98 |
| | Medium Cobble | 180 | | 0 | 98 |
| | Large Cobble | 256 | 1 | 1 | 99 |
| **Boulder** | Small Boulders | 362 | 1 | 1 | 100 |
| | Small Boulders | 512 | | 0 | 100 |
| | Medium Boulders | 1024 | | 0 | 100 |
| | Large Boulders | 2048 | | 0 | 100 |
| **Bedrock** | Bedrock | 40096 | | 0 | 100 |
| | Total | | 111 | | |



## e-Table. Raw Pebble Count Survey Data Sheets

**Cross Section:** 1 **Feature:** Riffle

| **Year:** | Baseline | MY1 | MY2 | MY3 | MY4 | MY5 |
|---|---|---|---|---|---|---|
| **Date:** | NA | 11/23/2010 | | 9/15/2012 | | |

| Size | Total | Total | Total | Total | Total | Total |
|---|---|---|---|---|---|---|
| .062 | | 75 | 92 | 99 | | |
| .125 | | 1 | | | | |
| .25 | | 1 | | | | |
| 0.5 | | 2 | | | | |
| 1.0 | | 0 | 1 | | | |
| 2 | | 0 | | | | |
| 4.0 | | 2 | 1 | | | |
| 5.7 | | 3 | | | | |
| 8 | | 0 | | | | |
| 13 | | 2 | 1 | | | |
| 16 | | 1 | 2 | | | |
| 22.6 | | 2 | | | | |
| 32 | | 2 | | 1 | | |
| 45 | | 0 | 1 | | | |
| 64 | | 1 | 1 | | | |
| 90 | | 3 | | | | |
| 128 | | 1 | 1 | | | |
| 180 | | 4 | | | | |
| 256 | | | | | | |
| 362 | | | | | | |
| 512 | | | | | | |
| 1024 | | | | | | |
| 2048 | | | | | | |
| 40096 | | | | | | |
| | 0 | 100 | 100 | 100 | 0 | 0 |

**Cross Section:** 2 **Feature:** Riffle

| **Year:** | Baseline | MY1 | MY2 | MY3 | MY4 | MY5 |
|---|---|---|---|---|---|---|
| **Date:** | NA | 11/23/2010 | | 9/15/2012 | | |

| Size | Total | Total | Total | Total | Total | Total |
|---|---|---|---|---|---|---|
| .062 | | 50 | 63 | 89 | | |
| .125 | | 0 | 3 | | | |
| .25 | | 7 | 1 | | | |
| 0.5 | | 0 | | | | |
| 1.0 | | 2 | | | | |
| 2 | | 0 | 1 | | | |
| 4.0 | | 2 | | | | |
| 5.7 | | 0 | 2 | | | |
| 8 | | 1 | 1 | | | |
| 13 | | 6 | 2 | 1 | | |
| 16 | | 4 | 4 | | | |
| 22.6 | | 5 | 9 | | | |
| 32 | | 7 | 2 | 2 | | |
| 45 | | 0 | 6 | | | |
| 64 | | 8 | 3 | 2 | | |
| 90 | | 6 | 1 | 5 | | |
| 128 | | 2 | | 1 | | |
| 180 | | | | | | |
| 256 | | | | | | |
| 362 | | | | | | |
| 512 | | | | | | |
| 1024 | | | | | | |
| 2048 | | | | | | |
| 40096 | | | 2 | | | |
| | 0 | 100 | 100 | 100 | 0 | 0 |

**Cross Section:** 3 **Feature:** Pool

| **Year:** | Baseline | MY1 | MY2 | MY3 | MY4 | MY5 |
|---|---|---|---|---|---|---|
| **Date:** | NA | 11/23/2010 | | 9/16/2012 | | |

| Size | Total | Total | Total | Total | Total | Total |
|---|---|---|---|---|---|---|
| .062 | | 28 | 61 | 35 | | |
| .125 | | 0 | 0 | 15 | | |
| .25 | | 1 | 13 | 8 | | |
| 0.5 | | 6 | 0 | 6 | | |
| 1.0 | | 5 | 7 | | | |
| 2 | | 2 | 0 | 1 | | |
| 4.0 | | 11 | 2 | 2 | | |
| 5.7 | | 3 | 1 | | | |
| 8 | | 4 | 2 | 1 | | |
| 13 | | 6 | 2 | 3 | | |
| 16 | | 3 | 2 | 2 | | |
| 22.6 | | 6 | 1 | 5 | | |
| 32 | | 6 | 3 | 6 | | |
| 45 | | 4 | 2 | 5 | | |
| 64 | | 11 | 2 | 2 | | |
| 90 | | 0 | 3 | 5 | | |
| 128 | | 4 | 1 | 3 | | |
| 180 | | | 1 | | | |
| 256 | | | 2 | | | |
| 362 | | | | | | |
| 512 | | | | 1 | | |
| 1024 | | | | | | |
| 2048 | | | | | | |
| 40096 | | | | | | |
| | 0 | 100 | 105 | 100 | | |

**Cross Section:** 4 **Feature:** Riffle

| **Year:** | Baseline | MY1 | MY2 | MY3 | MY4 | MY5 |
|---|---|---|---|---|---|---|
| **Date:** | 4/20/2010 | 11/23/2010 | | 9/16/2012 | | |

| Size | Total | Total | Total | Total | Total | Total |
|---|---|---|---|---|---|---|
| .062 | 37 | 36 | 63 | 67 | | |
| .125 | 1 | 0 | 1 | 24 | | |
| .25 | 2 | 8 | 6 | | | |
| 0.5 | 12 | 13 | 2 | | | |
| 1.0 | 5 | 4 | 1 | | | |
| 2 | 5 | 0 | | | | |
| 4.0 | 6.0 | 3 | | | | |
| 5.7 | 3 | 1 | 3 | 1 | | |
| 8 | 0 | 0 | | 1 | | |
| 13 | 2 | 1 | | | | |
| 16 | 2 | 6 | 2 | | | |
| 22.6 | 3 | 8 | | 1 | | |
| 32 | 5 | 3 | 3 | | | |
| 45 | 2 | 6 | 11 | 1 | | |
| 64 | 7 | 5 | 2 | 2 | | |
| 90 | 4 | 4 | 3 | 1 | | |
| 128 | 3 | 2 | 2 | 2 | | |
| 180 | 1 | | | | | |
| 256 | | | | | | |
| 362 | | | | | | |
| 512 | | | | | | |
| 1024 | | | | | | |
| 2048 | | | | | | |
| 40096 | | | 1 | | | |
| | 100 | 100 | 100 | 100 | | |

**Cross Section:** 5 **Feature:** Pool

| **Year:** | Baseline | MY1 | MY2 | MY3 | MY4 | MY5 |
|---|---|---|---|---|---|---|
| **Date:** | NA | 11/23/2010 | | 9/16/2012 | | |

| Size | Total | Total | Total | Total | Total | Total |
|---|---|---|---|---|---|---|
| .062 | | 7 | 35 | 17 | | |
| .125 | | 0 | 2 | | | |
| .25 | | 0 | 0 | | | |
| 0.5 | | 0 | 0 | | | |
| 1.0 | | 1 | 0 | 1 | | |
| 2 | | 4 | 2 | 3 | | |
| 4.0 | | 9 | 6 | 4 | | |
| 5.7 | | 20 | 3 | 1 | | |
| 8 | | 12 | 8 | | | |
| 13 | | 10 | 7 | 5 | | |
| 16 | | 9 | 1 | 5 | | |
| 22.6 | | 5 | 2 | 7 | | |
| 32 | | 5 | 3 | 8 | | |
| 45 | | 1 | 6 | 9 | | |
| 64 | | 4 | 5 | 5 | | |
| 90 | | 4 | 2 | 3 | | |
| 128 | | 4 | 3 | 5 | | |
| 180 | | 2 | 3 | 11 | | |
| 256 | | 2 | 6 | 16 | | |
| 362 | | 1 | 4 | | | |
| 512 | | | 1 | | | |
| 1024 | | | 1 | | | |
| 2048 | | | | | | |
| 40096 | | | | | | |
| | 0 | 100 | 100 | 100 | | |

**Cross Section:** 6 **Feature:** Riffle

| **Year:** | Baseline | MY1 | MY2 | MY3 | MY4 | MY5 |
|---|---|---|---|---|---|---|
| **Date:** | NA | 11/23/2010 | | 9/16/2012 | | |

| Size | Total | Total | Total | Total | Total | Total |
|---|---|---|---|---|---|---|
| .062 | | 47 | 54 | 67 | | |
| .125 | | 0 | 0 | | | |
| .25 | | 4 | 0 | | | |
| 0.5 | | 10 | 0 | | | |
| 1.0 | | 0 | 0 | | | |
| 2 | | 0 | 0 | | | |
| 4.0 | | 0 | 2 | 1 | | |
| 5.7 | | 1 | 0 | 1 | | |
| 8 | | 3 | 5 | 3 | | |
| 13 | | 5 | 3 | 1 | | |
| 16 | | 6 | 10 | 1 | | |
| 22.6 | | 4 | 6 | 4 | | |
| 32 | | 1 | 5 | 4 | | |
| 45 | | 7 | 10 | 4 | | |
| 64 | | 5 | 5 | 3 | | |
| 90 | | 2 | 1 | 2 | | |
| 128 | | 5 | 2 | 3 | | |
| 180 | | | 2 | 6 | | |
| 256 | | | 1 | 1 | | |
| 362 | | | | | | |
| 512 | | | | | | |
| 1024 | | | | | | |
| 2048 | | | | | | |
| 40096 | | | | | | |
| | 0 | 100 | 106 | 101 | | |

**Cross Section:** 7 **Feature:** Riffle

| **Year:** | Baseline | MY1 | MY2 | MY3 | MY4 | MY5 |
|---|---|---|---|---|---|---|
| **Date:** | NA | 11/23/2010 | | 9/16/2012 | | |

| Size | Total | Total | Total | Total | Total | Total |
|---|---|---|---|---|---|---|
| .062 | | 35 | 0 | 44 | | |
| .125 | | 0 | 0 | 1 | | |
| .25 | | 14 | 1 | 1 | | |
| 0.5 | | 3 | 21 | | | |
| 1.0 | | 1 | 29 | | | |
| 2 | | 0 | 19 | | | |
| 4.0 | | 6 | 15 | 7 | | |
| 5.7 | | 8 | 4 | 1 | | |
| 8 | | 9 | 5 | 7 | | |
| 13 | | 19 | 4 | 9 | | |
| 16 | | 12 | 5 | 5 | | |
| 22.6 | | 1 | 3 | 9 | | |
| 32 | | 1 | 3 | 7 | | |
| 45 | | 1 | 1 | 4 | | |
| 64 | | 0 | 0 | 4 | | |
| 90 | | 1 | 0 | | | |
| 128 | | | 1 | 1 | | |
| 180 | | | | | | |
| 256 | | | | | | |
| 362 | | | | | | |
| 512 | | | | | | |
| 1024 | | | | | | |
| 2048 | | | | | | |
| 40096 | | | | | | |
| | 0 | 111 | 111 | 100 | | |

**Cross Section:** 8 **Feature:** Riffle

| **Year:** | Baseline | MY1 | MY2 | MY3 | MY4 | MY5 |
|---|---|---|---|---|---|---|
| **Date:** | NA | 11/23/2010 | | 9/15/2012 | | |

| Size | Total | Total | Total | Total | Total | Total |
|---|---|---|---|---|---|---|
| .062 | | 31 | 37 | 18 | | |
| .125 | | 0 | | | | |
| .25 | | 7 | | 1 | | |
| 0.5 | | 1 | | | | |
| 1.0 | | 5 | 3 | 1 | | |
| 2 | | 0 | | 3 | | |
| 4.0 | | 5 | 3 | 3 | | |
| 5.7 | | 2 | | 7 | | |
| 8 | | 4 | 2 | 5 | | |
| 13 | | 5 | 3 | 6 | | |
| 16 | | 8 | 2 | 5 | | |
| 22.6 | | 9 | 5 | 2 | | |
| 32 | | 2 | 8 | 6 | | |
| 45 | | 3 | 12 | 1 | | |
| 64 | | 4 | 5 | 4 | | |
| 90 | | 5 | 6 | 10 | | |
| 128 | | 5 | 7 | 7 | | |
| 180 | | 0 | 4 | 7 | | |
| 256 | | 4 | 2 | 2 | | |
| 362 | | | 2 | 2 | | |
| 512 | | | | | | |
| 1024 | | | | | | |
| 2048 | | | | | | |
| 40096 | | | | | | |
| | | 100 | 101 | 90 | | |

**Cross Section:** 9 **Feature:** Pool

| **Year:** | Baseline | MY1 | MY2 | MY3 | MY4 | MY5 |
|---|---|---|---|---|---|---|
| **Date:** | NA | 11/23/2010 | | 9/15/2012 | | |

| Size | Total | Total | Total | Total | Total | Total |
|---|---|---|---|---|---|---|
| .062 | | 57 | 83 | 88 | | |
| .125 | | 0 | | | | |
| .25 | | 6 | 1 | | | |
| 0.5 | | 5 | | | | |
| 1.0 | | 1 | 3 | | | |
| 2 | | 0 | | | | |
| 4.0 | | 5 | | | | |
| 5.7 | | 3 | | | | |
| 8 | | 4 | 3 | 4 | | |
| 13 | | 7 | | 7 | | |
| 16 | | 6 | 2 | 7 | | |
| 22.6 | | 2 | 2 | 2 | | |
| 32 | | 1 | | | | |
| 45 | | 1 | 1 | | | |
| 64 | | 0 | 1 | | | |
| 90 | | 0 | 1 | 1 | | |
| 128 | | 0 | | | | |
| 180 | | 1 | | | | |
| 256 | | 1 | 2 | 1 | | |
| 362 | | | | 1 | | |
| 512 | | | | | | |
| 1024 | | | 1 | | | |
| 2048 | | | | | | |
| 40096 | | | | | | |
| | | 100 | 100 | 111 | | |

Table 10.0 Baseline Stream Data Summary
UT to Bear Creek (NCEEP# 92347) - Northern UT (2,975 feet)

| Parameter | Gauge[2] | Regional Curve | | | Pre-Existing Condition | | | | | | Reference Reach(es) Data | | | | | | Design | | | Monitoring Baseline | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Dimension and Substrate - Riffle Only** | | LL | UL | Eq. | Min | Mean | Med | Max | SD[5] | n | Min | Mean | Med | Max | SD[5] | n | Min | Med* | Max | Min | Mean | Med | Max | SD[5] | n |
| Bankfull Width (ft) | NA | | | | -- | 15.2 | -- | -- | -- | -- | -- | 20.2 | -- | -- | -- | -- | -- | 19.0 | -- | 18.3 | 19.0 | 18.7 | 20.3 | 0.9 | 4 |
| Floodprone Width (ft) | | | | | -- | 40.0 | -- | -- | -- | -- | -- | 140.0 | -- | -- | -- | -- | -- | 100.0 | -- | 100.0 | 130.0 | 100.0 | 220.0 | 60.0 | 4 |
| Bankfull Mean Depth (ft) | NA | | | | -- | 1.4 | -- | -- | -- | -- | -- | 1.4 | -- | -- | -- | -- | -- | 1.4 | -- | 1.2 | 1.4 | 1.4 | 1.5 | 0.1 | 4 |
| [1]Bankfull Max Depth (ft) | NA | | | | -- | 1.7 | -- | -- | -- | -- | -- | 1.9 | -- | -- | -- | -- | -- | 1.9 | -- | 1.9 | 2.1 | 2.2 | 2.4 | 0.2 | 4 |
| Bankfull Cross Sectional Area ($ft^2$) | NA | | | | -- | 20.8 | -- | -- | -- | -- | -- | 28.2 | -- | -- | -- | -- | -- | 25.8 | -- | 23.0 | 25.7 | 25.2 | 29.5 | 2.9 | 4 |
| Width/Depth Ratio | NA | | | | -- | 11.0 | -- | -- | -- | -- | -- | 14.5 | -- | -- | -- | -- | -- | 14.0 | -- | 13.0 | 14.1 | 13.9 | 15.6 | 1.1 | 4 |
| Entrenchment Ratio | NA | | | | -- | 2.6 | -- | -- | -- | -- | -- | 6.9 | -- | -- | -- | -- | -- | 5.3 | -- | 4.9 | 6.9 | 5.4 | 11.6 | 3.2 | 4 |
| [1]Bank Height Ratio | NA | | | | -- | 1.4 | -- | -- | -- | -- | -- | 1.0 | -- | -- | -- | -- | -- | 1.0 | -- | 1.0 | 1.0 | 1.0 | 1.0 | 0.0 | 4 |
| **Profile** | | | | | | | | | | | | | | | | | | | | | | | | | |
| Riffle Length (ft) | | | | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 13.9 | 33.8 | 35.7 | 67.0 | 12.0 | 21 |
| Riffle Slope (ft/ft) | | | | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 0.002 | 0.008 | 0.006 | 0.024 | 0.006 | 21 |
| Pool Length (ft) | | | | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 28.7 | 58.2 | 58.7 | 112.8 | 18.9 | 23 |
| Pool Max depth (ft) | | | | | -- | 2.0 | -- | -- | -- | -- | -- | 2.7 | -- | -- | -- | -- | -- | 2.7 | -- | 1.8 | 2.6 | 2.6 | 3.7 | 0.5 | 23 |
| Pool Spacing (ft) | | | | | 25.5 | -- | -- | 127.0 | -- | -- | 25.0 | -- | -- | 104.0 | -- | -- | 22.8 | | 114.0 | 42.6 | 131.1 | 103.2 | 309.1 | 75.8 | 22 |
| **Pattern** | | | | | | | | | | | | | | | | | | | | | | | | | |
| Channel Beltwidth (ft) | | | | | 41.0 | -- | -- | 116.0 | -- | -- | 20.0 | -- | -- | 77.0 | -- | -- | 38.0 | -- | 114.0 | 28.9 | 62.5 | 61.4 | 112.3 | 19.4 | 20 |
| Radius of Curvature (ft) | | | | | 21.0 | -- | -- | 75.0 | -- | -- | 10.2 | -- | -- | 13.3 | -- | -- | 38.0 | -- | 76.0 | 31.6 | 57.5 | 53.6 | 98.2 | 17.5 | 22 |
| Rc:Bankfull width (ft/ft) | | | | | 1.4 | -- | -- | 4.9 | -- | -- | 0.5 | -- | -- | 0.7 | -- | -- | 2.0 | -- | 4.0 | 1.6 | 2.9 | 2.7 | 5.0 | 0.9 | 22 |
| Meander Wavelength (ft) | | | | | 125.0 | -- | -- | 250.0 | -- | -- | 94.0 | -- | -- | 100.0 | -- | -- | 95.0 | -- | 228.0 | 166.0 | 227.1 | 225.8 | 310.3 | 34.6 | 21 |
| Meander Width Ratio | | | | | 2.7 | -- | -- | 7.7 | -- | -- | 1.0 | -- | -- | 3.8 | -- | -- | 2.0 | -- | 6.0 | 1.5 | 3.2 | 3.1 | 5.7 | 1.0 | 20 |
| **Transport parameters** | | | | | | | | | | | | | | | | | | | | | | | | | |
| Reach Shear Stress (competency) $lb/f^2$ | | | | | 0.53 | | | | | | | | | | | | 0.22 | | | 0.28 | | | | | |
| Max part size (mm) mobilized at bankfull | | | | | 145 | | | | | | | | | | | | 50 | | | 80 | | | | | |
| Stream Power (transport capacity) $W/m^2$ | | | | | 3.8 | | | | | | | | | | | | 1.15 | | | 1.23 | | | | | |
| **Additional Reach Parameters** | | | | | | | | | | | | | | | | | | | | | | | | | |
| Rosgen Classification | NA | | | | Degraded E4/F4 | | | | | | C4 | | | | | | C4 | | | C4 | | | | | |
| Mean Bankfull Velocity (fps) | NA | | | | 4.8 | | | | | | 6.2 | | | | | | 3.5 | | | 3.0 | | | | | |
| Bankfull Discharge (cfs) | NA | | | | 100 | | | | | | 173.7 | | | | | | 100 | | | 77.0 | | | | | |
| Valley length (ft) | | | | | 2697 | | | | | | -- | | | | | | | | | | | | | | |
| Channel Thalweg length (ft) | | | | | 2832 | | | | | | -- | | | | | | 3132 | | | 2975 | | | | | |
| Sinuosity (ft) | | | | | 1.05 | | | | | | 1.12 | | | | | | 1.13 | | | 1.10 | | | | | |
| Water Surface Slope (Channel) (ft/ft) | NA | | | | 0.0062 | | | | | | 0.0077 | | | | | | 0.0028 | | | -- | | | | | |
| BF slope (ft/ft) | NA | | | | -- | | | | | | -- | | | | | | -- | | | 0.003 | | | | | |
| [3]Bankfull Floodplain Area (acres) | | | | | -- | | | | | | -- | | | | | | -- | | | 8.19 | | | | | |
| [4]% of Reach with Eroding Banks | | | | | -- | | | | | | -- | | | | | | | | | | | | | | |
| Channel Stability or Habitat Metric | | | | | -- | | | | | | -- | | | | | | | | | | | | | | |
| Biological or Other | | | | | -- | | | | | | -- | | | | | | | | | | | | | | |

Shaded cells indicate that these will typically not be filled in.

1 = The distributions for these parameters can include information from both the cross-section surveys and the longitudinal profile. 2 = For projects with a proximal USGS gauge in-line with the project reach (added bankfull verification - rare).

3. Utilizing survey data produce an estimate of the bankfull floodplain area in acres, which should be the area from the top of bank to the toe of the terrace riser/slope. 4 = Proportion of reach exhibiting banks that are eroding based on the visual survey for comparison to monitoring data; 5. Of value/needed only if the n exceeds 3

* Mean, not median, provided for design numbers.

Table 10.1 Baseline Stream Data Summary
UT to Bear Creek (NCEEP# 92347) - Southern UT (1,700 feet)

| Parameter | Gauge[2] | Regional Curve | | | Pre-Existing Condition | | | | | | Reference Reach(es) Data | | | | | | Design | | | Monitoring Baseline | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Dimension and Substrate - Riffle Only** | | LL | UL | Eq. | Min | Mean | Med | Max | SD[5] | n | Min | Mean | Med | Max | SD[5] | n | Min | Med* | Max | Min | Mean | Med | Max | SD[5] | n |
| Bankfull Width (ft) | | | | | -- | 5.0 | -- | -- | -- | -- | -- | 20.2 | -- | -- | -- | -- | -- | 8.5 | -- | 7.9 | 10.7 | 10.7 | 13.5 | NA | 2 |
| Floodprone Width (ft) | | | | | -- | 14.3 | -- | -- | -- | -- | -- | 140.0 | -- | -- | -- | -- | -- | 50.0 | -- | 50.0 | 75.0 | 75.0 | 100.0 | NA | 2 |
| Bankfull Mean Depth (ft) | | | | | -- | 1.1 | -- | -- | -- | -- | -- | 1.4 | -- | -- | -- | -- | -- | 0.7 | -- | 0.6 | 0.6 | 0.6 | 0.7 | NA | 2 |
| [1]Bankfull Max Depth (ft) | | | | | -- | 1.3 | -- | -- | -- | -- | -- | 1.9 | -- | -- | -- | -- | -- | 1.1 | -- | 1.2 | 1.3 | 1.3 | 1.4 | NA | 2 |
| Bankfull Cross Sectional Area ($ft^2$) | | | | | -- | 5.2 | -- | -- | -- | -- | -- | 28.2 | -- | -- | -- | -- | -- | 6.0 | -- | 5.3 | 6.5 | 6.5 | 7.8 | NA | 2 |
| Width/Depth Ratio | | | | | -- | 4.7 | -- | -- | -- | -- | -- | 14.5 | -- | -- | -- | -- | -- | 12.0 | -- | 12.0 | 17.7 | 17.7 | 23.3 | NA | 2 |
| Entrenchment Ratio | | | | | -- | 2.9 | -- | -- | -- | -- | -- | 6.9 | -- | -- | -- | -- | -- | 5.9 | -- | 3.7 | 8.1 | 8.1 | 12.6 | NA | 2 |
| [1]Bank Height Ratio | | | | | -- | 1.4 | -- | -- | -- | -- | -- | 1.0 | -- | -- | -- | -- | -- | 1.0 | -- | 1.0 | 1.0 | 1.0 | 1.0 | NA | 2 |
| **Profile** | | | | | | | | | | | | | | | | | | | | | | | | | |
| Riffle Length (ft) | | | | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.0 | 20.9 | 17.6 | 40.2 | 8.9 | 13 |
| Riffle Slope (ft/ft) | | | | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 0.004 | 0.021 | 0.019 | 0.046 | 0.011 | 13 |
| Pool Length (ft) | | | | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.7 | 30.9 | 29.5 | 53.0 | 12.8 | 30 |
| Pool Max depth (ft) | | | | | -- | 1.7 | -- | -- | -- | -- | -- | 2.7 | -- | -- | -- | -- | -- | 1.4 | -- | 0.5 | 1.7 | 1.7 | 3.0 | 0.5 | 30 |
| Pool Spacing (ft) | | | | | 6.8 | -- | -- | 21.5 | -- | -- | 25.0 | -- | -- | 104.0 | -- | -- | 10.2 | | 51.0 | 15.9 | 49.1 | 41.8 | 169.3 | 34.3 | 29 |
| **Pattern** | | | | | | | | | | | | | | | | | | | | | | | | | |
| Channel Beltwidth (ft) | | | | | 25.0 | -- | -- | 36.0 | -- | -- | 20.0 | -- | -- | 77.0 | -- | -- | 34.0 | -- | 51.0 | 16.1 | 31.1 | 28.4 | 96.7 | 16.0 | 26 |
| Radius of Curvature (ft) | | | | | 5.0 | -- | -- | 30.0 | -- | -- | 10.2 | -- | -- | 13.3 | -- | -- | 17.0 | -- | 34.0 | 15.4 | 24.7 | 23.8 | 35.6 | 5.5 | 28 |
| Rc:Bankfull width (ft/ft) | | | | | 1.0 | -- | -- | 6.1 | -- | -- | 0.5 | -- | -- | 0.7 | -- | -- | 2.0 | -- | 4.0 | 1.4 | 2.3 | 2.2 | 3.3 | 0.5 | 28 |
| Meander Wavelength (ft) | | | | | 40.0 | -- | -- | 53.0 | -- | -- | 94.0 | -- | -- | 100.0 | -- | -- | 42.5 | -- | 102.0 | 58.2 | 99.5 | 98.9 | 176.5 | 22.2 | 27 |
| Meander Width Ratio | | | | | 5.0 | -- | -- | 7.3 | -- | -- | 1.0 | -- | -- | 3.8 | -- | -- | 4.0 | -- | 6.0 | 1.5 | 2.9 | 2.6 | 9.0 | 1.5 | 26 |
| **Transport parameters** | | | | | | | | | | | | | | | | | | | | | | | | | |
| Reach Shear Stress (competency) $lb/f^2$ | | | | | 0.76 | | | | | | | | | | | | 0.161 | | 0.39 | | | | | | |
| Max part size (mm) mobilized at bankfull | | | | | 185 | | | | | | | | | | | | 36 | | 100 | | | | | | |
| Stream Power (transport capacity) $W/m^2$ | | | | | 4.75 | | | | | | | | | | | | 0.94 | | 2.07 | | | | | | |
| **Additional Reach Parameters** | | | | | | | | | | | | | | | | | | | | | | | | | |
| Rosgen Classification | | | | | Degraded E4/F4 | | | | | | C4 | | | | | | C4 | | C4 | | | | | | |
| Mean Bankfull Velocity (fps) | | | | | 4.2 | | | | | | 6.2 | | | | | | 3.9 | | 3.6 | | | | | | |
| Bankfull Discharge (cfs) | | | | | 22 | | | | | | 173.7 | | | | | | 23.4 | | 23.4 | | | | | | |
| Valley length (ft) | | | | | 1542 | | | | | | -- | | | | | | | | | | | | | | |
| Channel Thalweg length (ft) | | | | | 1635 | | | | | | -- | | | | | | 1.745 | | 1,700 | | | | | | |
| Sinuosity (ft) | | | | | 1.06 | | | | | | 1.12 | | | | | | 1.14 | | 1.10 | | | | | | |
| Water Surface Slope (Channel) (ft/ft) | | | | | 0.0145 | | | | | | 0.0077 | | | | | | 0.0041 | | -- | | | | | | |
| BF slope (ft/ft) | | | | | -- | | | | | | -- | | | | | | -- | | 0.01 | | | | | | |
| [3]Bankfull Floodplain Area (acres) | | | | | -- | | | | | | -- | | | | | | -- | | 3.33 | | | | | | |
| [4]% of Reach with Eroding Banks | | | | | 90 | | | | | | -- | | | | | | | | | | | | | | |
| Channel Stability or Habitat Metric | | | | | -- | | | | | | -- | | | | | | | | | | | | | | |
| Biological or Other | | | | | -- | | | | | | -- | | | | | | | | | | | | | | |

Shaded cells indicate that these will typically not be filled in.

1 = The distributions for these parameters can include information from both the cross-section surveys and the longitudinal profile. 2 = For projects with a proximal USGS gauge in-line with the project reach (added bankfull verification - rare).

3. Utilizing survey data produce an estimate of the bankfull floodplain area in acres, which should be the area from the top of bank to the toe of the terrace riser/slope. 4 = Proportion of reach exhibiting banks that are eroding based on the visual survey for comparison to monitoring data; 5. Of value/needed only if the n exceeds 3

* Mean, not median, provided for design numbers.

## Table 11.0 Monitoring Data - Dimensional Morphology Summary (Dimensional Parameters – Cross Sections)

## UT to Bear Creek (NCEEP# 92347) - Northern UT (2,975 feet) & Southern UT (1,700 feet)

| | Cross Section 1 (Riffle) | | | | | | | Cross Section 2 (Riffle) | | | | | | | Cross Section 3 (Pool) | | | | | | | Cross Section 4 (Riffle) | | | | | | | Cross Section 5 (Pool) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Based on fixed baseline bankfull elevation[1]** | Base | MY1 | MY2 | MY3 | MY4 | MY5 | MY+ | Base | MY1 | MY2 | MY3 | MY4 | MY5 | MY+ | Base | MY1 | MY2 | MY3 | MY4 | MY5 | MY+ | Base | MY1 | MY2 | MY3 | MY4 | MY5 | MY+ | Base | MY1 | MY2 | MY3 | MY4 | MY5 | MY+ |
| **Record elevation (datum) used** | 100 | 100 | 100 | | | | | 100 | 100 | 100 | | | | | 100 | 100 | 100 | | | | | 100 | 100 | 100 | | | | | 100 | 100 | 100 | | | | |
| Bankfull Width (ft) | 18.5 | 18.4 | 18.5 | 20.1 | | | | 18.3 | 18.6 | 17.9 | 20.7 | | | | 20.0 | 21.0 | 19.0 | 20.1 | | | | 20.3 | 19.1 | 20.9 | 19.6 | | | | 22.9 | 22.2 | 24.7 | 25.3 | | | |
| Floodprone Width (ft) | 100.0 | 100.0 | 100.0 | 100.0 | | | | 100.0 | 100.0 | 100.0 | 100.0 | | | | 100.0 | 100.0 | 100.0 | 100.0 | | | | 100.0 | 100.0 | 100.0 | 100.0 | | | | 220.0 | 220.0 | 220.0 | 220.0 | | | |
| Bankfull Mean Depth (ft) | 1.4 | 1.4 | 1.4 | 1.2 | | | | 1.3 | 1.3 | 1.3 | 1.1 | | | | 2.2 | 2.1 | 2.2 | 2.3 | | | | 1.5 | 1.5 | 1.4 | 1.4 | | | | 1.5 | 1.6 | 1.4 | 1.4 | | | |
| Bankfull Max Depth (ft) | 2.2 | 2.2 | 2.2 | 2.1 | | | | 2.1 | 2.0 | 2.1 | 1.8 | | | | 3.9 | 3.8 | 3.9 | 4.0 | | | | 2.4 | 2.3 | 2.3 | 2.2 | | | | 3.8 | 3.8 | 3.7 | 3.7 | | | |
| Bankfull Cross Sectional Area ($ft^2$) | 26.3 | 25.8 | 25.5 | 23.3 | | | | 24.0 | 23.9 | 23.3 | 21.7 | | | | 44.2 | 44.8 | 42.0 | 45.9 | | | | 29.5 | 28.0 | 29.6 | 26.9 | | | | 33.3 | 34.9 | 35.6 | 34.0 | | | |
| Bankfull Width/Depth Ratio | 13.0 | 13.2 | 13.4 | 17.4 | | | | 13.9 | 14.4 | 13.8 | 19.8 | | | | 9.1 | 9.9 | 8.6 | 8.8 | | | | 14.0 | 13.1 | 14.8 | 14.3 | | | | 15.7 | 14.1 | 17.1 | 18.8 | | | |
| Bankfull Entrenchment Ratio | 5.4 | 5.4 | 5.4 | 5.0 | | | | 5.5 | 5.4 | 5.6 | 4.8 | | | | 5.0 | 4.8 | 5.3 | 5.0 | | | | 4.9 | 5.2 | 4.8 | 5.1 | | | | 9.6 | 9.9 | 8.9 | 8.7 | | | |
| Bankfull Bank Height Ratio | 1.0 | 1.0 | 1.0 | 1.0 | | | | 1.0 | 1.0 | 1.0 | 1.0 | | | | 1.0 | 1.0 | 1.0 | 1.0 | | | | 1.0 | 1.0 | 1.0 | 1.0 | | | | 1.0 | 1.0 | 1.0 | 1.0 | | | |
| Cross Sectional Area between end pins ($ft^2$) | 75.3 | 76.9 | 75.7 | 71.1 | | | | 96.9 | 96.5 | 91.4 | 76.9 | | | | 119.5 | 115.9 | 105.0 | 84.2 | | | 119.5 | 115.9 | 105.0 | 84.2 | 50.4 | | | | 66.5 | 59.5 | 66.6 | 61.9 | | | |
| d50 (mm) | | 0.04 | 0.03 | 0.03 | | | | | 0.06 | 0.05 | 0.04 | | | | | 3.45 | 0.05 | 0.13 | | | | 0.44 | 0.37 | 0.37 | 0.05 | | | | | 7.42 | 6.27 | 30.83 | | | |
| | **Cross Section 6 (Riffle)** | | | | | | | **Cross Section 7 (Riffle)** | | | | | | | **Cross Section 8 (Riffle)** | | | | | | | **Cross Section 9 (Pool)** | | | | | | | | | | | | | |
| **Based on fixed baseline bankfull elevation[1]** | Base | MY1 | MY2 | MY3 | MY4 | MY5 | MY+ | Base | MY1 | MY2 | MY3 | MY4 | MY5 | MY+ | Base | MY1 | MY2 | MY3 | MY4 | MY5 | MY+ | Base | MY1 | MY2 | MY3 | MY4 | MY5 | MY+ | Base | MY1 | MY2 | MY3 | MY4 | MY5 | MY+ |
| **Record elevation (datum) used** | 100 | 100 | 100 | | | | | 100 | 100 | 100 | | | | | 100 | 100 | 100 | | | | | 100 | 100 | 100 | | | | | | | | | | | |
| Bankfull Width (ft) | 18.9 | 19.1 | 22.8 | 20.6 | | | | 13.7 | 12.2 | 11.1 | 10.4 | | | | 13.5 | 17.0 | 16.3 | | 4.0 | | | 18.5 | 21.0 | 23.6 | | | | | | | | | | | |
| Floodprone Width (ft) | 220.0 | 220.0 | 220.0 | 220.0 | | | | 100.0 | 100.0 | 100.0 | 100.0 | | | | 50.0 | 50.0 | 50.0 | 50.0 | | | 119.5 | 115.9 | 105.0 | 84.2 | 50.0 | | | | | | | | | | |
| Bankfull Mean Depth (ft) | 1.2 | 1.1 | 1.2 | 1.1 | | | | 0.4 | 0.5 | 0.6 | 0.6 | | | | 0.6 | 0.5 | 0.5 | 0.8 | | | | 1.1 | 1.1 | 1.0 | 1.1 | | | | | | | | | | |
| Bankfull Max Depth (ft) | 1.9 | 1.9 | 2.1 | 1.9 | | | | 1.3 | 1.5 | 1.5 | 1.5 | | | | 1.4 | 1.5 | 1.5 | 1.4 | | | | 2.7 | 2.9 | 2.9 | 3.0 | | | | | | | | | | |
| Bankfull Cross Sectional Area ($ft^2$) | 23.0 | 21.4 | 26.2 | 22.9 | | | | 6.1 | 6.0 | 6.2 | 6.2 | | | | 7.8 | 8.2 | 8.9 | 7.0 | | | | 20.7 | 22.9 | 23.2 | 23.8 | | | | | | | | | | |
| Bankfull Width/Depth Ratio | 15.6 | 17.0 | 19.9 | 18.6 | | | | 31.1 | 24.9 | 19.9 | 17.7 | | | | 23.3 | 35.5 | 30.2 | 10.3 | | | | 16.6 | 19.3 | 24.0 | 21.8 | | | | | | | | | | |
| Bankfull Entrenchment Ratio | 11.6 | 11.6 | 9.6 | 10.7 | | | | 7.3 | 8.2 | 9.0 | 9.6 | | | | 3.7 | 2.9 | 3.1 | 5.9 | | | | 2.7 | 2.4 | 2.1 | 2.2 | | | | | | | | | | |
| Bankfull Bank Height Ratio | 1.0 | 1.0 | 1.0 | 1.0 | | | | 1.0 | 1.0 | 1.0 | 1.0 | | | | 1.0 | 1.0 | 1.0 | 1.0 | | | | 1.0 | 1.0 | 1.0 | 1.0 | | | | | | | | | | |
| Cross Sectional Area between end pins ($ft^2$) | 55.9 | 56.5 | 51.8 | 33.2 | | | | 23.7 | 24.2 | 23.1 | 13.5 | | | | 42.6 | 44.2 | 46.4 | 26.2 | | | | 95.8 | 93.9 | 97.2 | 59.3 | | | | | | | | | | |
| d50 (mm) | | 0.22 | 0.06 | 0.05 | | | | | 2.83 | 1.24 | 3.14 | | | | | 4.85 | 16.67 | 12.24 | | | | | 0.05 | 0.04 | 0.04 | | | | | | | | | | |

1 = Widths and depths for monitoring resurvey will be based on the baseline bankfull datum regardless of dimensional/depositional development. Input the elevation used as the datum, which should be consistent and based on the baseline datum established. If the performer has inherited the project and cannot acquire the datum used for prior years this must be discussed with EEP. If this cannot be resolved in time for a given years report submission a footnote in this should be included that states: "It is uncertain if the monitoring datum has been consistent over the monitoring history, which may influence calculated values. Additional data from a prior performer is being acquired to provide confirmation. Values will be recalculated in a future submission based on a consistent datum if determined to be necessary."

## Table 11.1 Monitoring Data - Stream Reach Data Summary
## UT to Bear Creek (NCEEP# 92347) - Northern UT (2,975 feet)

| Parameter | Baseline | | | | | | MY-1 | | | | | | MY-2 | | | | | | MY- 3 | | | | | | MY- 4 | | | | | | MY- 5 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Dimension and Substrate - Riffle only** | Min | Mean | Med | Max | SD[4] | n | Min | Mean | Med | Max | SD[4] | n | Min | Mean | Med | Max | SD[4] | n | Min | Mean | Med | Max | SD[4] | n | Min | Mean | Med | Max | SD[4] | n | Min | Mean | Med | Max | SD[4] | n |
| Bankfull Width (ft) | 18.3 | 19.0 | 18.7 | 20.3 | 0.9 | 4 | 18.4 | 18.8 | 18.8 | 19.1 | 0.3 | 4 | 17.9 | 20.0 | 19.7 | 22.8 | 2.3 | 4 | 19.6 | 20.3 | 20.4 | 20.7 | 0.5 | 4 | | | | | | | | | | | | |
| Floodprone Width (ft) | 100.0 | 130.0 | 100.0 | 220.0 | 60.0 | 4 | 100.0 | 130.0 | 100.0 | 220.0 | 60.0 | 4 | 100.0 | 130.0 | 100.0 | 220.0 | 60.0 | 4 | 100.0 | 130.0 | 100.0 | 220.0 | 60.0 | 4 | | | | | | | | | | | | |
| Bankfull Mean Depth (ft) | 1.2 | 1.4 | 1.4 | 1.5 | 0.1 | 4 | 1.1 | 1.3 | 1.3 | 1.5 | 0.1 | 4 | 1.2 | 1.3 | 1.3 | 1.4 | 0.1 | 4 | 1.1 | 1.2 | 1.1 | 1.4 | 0.1 | 4 | | | | | | | | | | | | |
| [1]Bankfull Max Depth (ft) | 1.9 | 2.1 | 2.2 | 2.4 | 0.2 | 4 | 1.9 | 2.1 | 2.1 | 2.3 | 0.2 | 4 | 2.1 | 2.2 | 2.1 | 2.3 | 0.1 | 4 | 1.8 | 2.0 | 2.0 | 2.2 | 0.2 | 4 | | | | | | | | | | | | |
| Bankfull Cross Sectional Area ($ft^2$) | 23.0 | 25.7 | 25.2 | 29.5 | 2.9 | 4 | 21.4 | 24.8 | 24.9 | 28.0 | 2.8 | 4 | 23.3 | 26.1 | 25.9 | 29.6 | 2.6 | 4 | 21.7 | 23.7 | 23.1 | 26.9 | 2.2 | 4 | | | | | | | | | | | | |
| Width/Depth Ratio | 13.0 | 14.1 | 13.9 | 15.6 | 1.1 | 4 | 13.1 | 14.4 | 13.8 | 17.0 | 1.8 | 4 | 13.4 | 15.5 | 14.3 | 19.9 | 3.0 | 4 | 14.3 | 17.5 | 18.0 | 19.8 | 2.4 | 4 | | | | | | | | | | | | |
| Entrenchment Ratio | 4.9 | 6.9 | 5.4 | 11.6 | 3.2 | 4 | 5.2 | 6.9 | 5.4 | 11.6 | 3.1 | 4 | 4.8 | 6.4 | 5.5 | 9.6 | 2.2 | 4 | 4.8 | 6.4 | 5.0 | 10.7 | 2.9 | 4 | | | | | | | | | | | | |
| [1]Bank Height Ratio | 1.0 | 1.0 | 1.0 | 1.0 | 0.0 | 4 | 1.0 | 1.0 | 1.0 | 1.0 | 0.0 | 4 | 1.0 | 1.0 | 1.0 | 1.0 | 0.0 | 4 | 1.0 | 1.0 | 1.0 | 1.0 | 0.0 | 4 | | | | | | | | | | | | |
| **Profile** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Riffle Length (ft) | 13.9 | 33.8 | 35.7 | 67.0 | 12.0 | 21 | 10 | 30.3 | 30 | 54.5 | 12.1 | 21 | 9 | 31.1 | 28.5 | 81.5 | 14 | 25 | 20 | 39.6 | 34.5 | 73 | 18 | 22 | | | | | | | | | | | | |
| Riffle Slope (ft/ft) | 0.002 | 0.008 | 0.006 | 0.024 | 0.006 | 21 | 0.006 | 0.013 | 0.009 | 0.040 | 0.006 | 21 | 0.005 | 0.01 | 0.01 | 0.05 | 0.007 | 25 | 0 | 0.01 | 0.01 | 0.02 | 0 | 22 | | | | | | | | | | | | |
| Pool Length (ft) | 28.7 | 58.2 | 58.7 | 112.8 | 18.9 | 23 | 22 | 35.1 | 32.5 | 80 | 15.5 | 31 | 22 | 36.4 | 34.5 | 80 | 16.3 | 31 | 26 | 45.1 | 38 | 83 | 22.5 | 31 | | | | | | | | | | | | |
| Pool Max depth (ft) | 1.8 | 2.6 | 2.6 | 3.7 | 0.5 | 23 | 2.3 | 3.3 | 3.3 | 4.1 | 0.5 | 31 | 1.9 | 3.1 | 3.1 | 3.9 | 0.5 | 31 | 2.15 | 3.24 | 3.29 | 4.05 | 0.51 | 29 | | | | | | | | | | | | |
| Pool Spacing (ft) | 42.6 | 131.1 | 103.2 | 309.1 | 75.8 | 22 | 52 | 92.3 | 85.5 | 172 | 41.7 | 30 | 52 | 91.4 | 82.8 | 174 | 40.7 | 31 | 4 | 99 | 87.5 | 179 | 47.3 | 28 | | | | | | | | | | | | |
| **Pattern** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Channel Beltwidth (ft) | 28.9 | 62.5 | 61.4 | 112 | 19.4 | 20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Radius of Curvature (ft) | 31.6 | 57.5 | 53.6 | 98.2 | 17.5 | 22 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Rc:Bankfull width (ft/ft) | 1.6 | 2.9 | 2.7 | 4.96 | 0.88 | 22 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Meander Wavelength (ft) | 166 | 227 | 226 | 310 | 34.6 | 21 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Meander Width Ratio | 1.46 | 3.16 | 3.1 | 5.67 | 0.98 | 20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Pattern data will not typically be collected unless visual data, dimensional data or profile data indicate significant shifts from baseline

| **Additional Reach Parameters** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Rosgen Classification | C4 | | | | | | C4 | | | | | | C5 | | | | | | C4 | | | | | | | | | | | | | | | | | |
| Channel Thalweg length (ft) | 2975 | | | | | | 3041 | | | | | | 3036 | | | | | | 3064 | | | | | | | | | | | | | | | | | |
| Sinuosity (ft) | 1.1 | | | | | | 1.13 | | | | | | 1.13 | | | | | | 1.14 | | | | | | | | | | | | | | | | | |
| Water Surface Slope (Channel) (ft/ft) | -- | | | | | | 0.003 | | | | | | 0.004 | | | | | | 0.004 | | | | | | | | | | | | | | | | | |
| BF slope (ft/ft) | 0.003 | | | | | | 0.003 | | | | | | 0.003 | | | | | | 0.003 | | | | | | | | | | | | | | | | | |
| [3]Ri% / Ru% / P% / G% / S% | 29 | 14 | 56 | 1 | 0 | | 21 | 16 | 37 | 9 | 0 | | 31 | 16 | 44 | 9 | 0 | | 29.7 | 11 | 47.7 | 11.5 | 0 | | | | | | | | | | | | | |
| [3]SC% / Sa% / G% / C% / B% / Be% | | | | | | | | | | | | | 56 | 9 | 28 | 6 | 1 | | 62.2 | 9.67 | 17.3 | 10.6 | 0.17 | 0 | | | | | | | | | | | | |
| [3]d16 / d35 / d50 / d84 / d95 / | | | | | | | | | | | | | 0.02 | 0.04 | 1.14 | 36.6 | 96.2 | | 0.03 | 2.54 | 5.19 | 42.2 | 96 | | | | | | | | | | | | | |
| [2]% of Reach with Eroding Banks | 3 | | | | | | 2 | | | | | | 2 | | | | | | 1 | | | | | | | | | | | | | | | | | |
| Channel Stability or Habitat Metric | -- | | | | | | -- | | | | | | -- | | | | | | -- | | | | | | | | | | | | | | | | | |
| Biological or Other | -- | | | | | | -- | | | | | | -- | | | | | | -- | | | | | | | | | | | | | | | | | |

Shaded cells indicate that these will typically not be filled in.
1 = The distributions for these parameters can include information from both the cross-section surveys and the longitudinal profile.
2 = Proportion of reach exhibiting banks that are eroding based on the visual survey from visual assessment table
3 = Riffle, Run, Pool, Glide, Step; Silt/Clay, Sand, Gravel, Cobble, Boulder, Bedrock; dip = max pave, disp = max subpave
4. = Of value/needed only if the n exceeds 3

## Table 11.2 Monitoring Data - Stream Reach Data Summary
## UT to Bear Creek (NCEEP# 92347) - Southern UT (1,700 feet)

| Parameter | Baseline | | | | | | MY-1 | | | | | | MY-2 | | | | | | MY- 3 | | | | | | MY- 4 | | | | | | MY- 5 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Dimension and Substrate - Riffle only** | Min | Mean | Med | Max | SD[4] | n | Min | Mean | Med | Max | SD[4] | n | Min | Mean | Med | Max | SD[4] | n | Min | Mean | Med | Max | SD[4] | n | Min | Mean | Med | Max | SD[4] | n | Min | Mean | Med | Max | SD[4] | n |
| Bankfull Width (ft) | 13.5 | 13.6 | 13.6 | 13.7 | -- | 2 | 12.2 | 14.6 | 14.6 | 17.0 | -- | 2 | 11.1 | 13.7 | 13.7 | 16.3 | -- | 2 | 10.4 | 10.4 | 10.4 | 10.4 | -- | 2 | | | | | | | | | | | | |
| Floodprone Width (ft) | 50.0 | 75.0 | 75.0 | 100.0 | -- | 2 | 50.0 | 75.0 | 75.0 | 100.0 | -- | 2 | 50.0 | 75.0 | 75.0 | 100.0 | -- | 2 | 50.0 | 75.0 | 75.0 | 100.0 | -- | 2 | | | | | | | | | | | | |
| Bankfull Mean Depth (ft) | 0.4 | 0.5 | 0.5 | 0.6 | -- | 2 | 0.5 | 0.5 | 0.5 | 0.5 | -- | 2 | 0.5 | 0.6 | 0.6 | 0.6 | -- | 2 | 0.6 | 0.7 | 0.7 | 0.8 | -- | 2 | | | | | | | | | | | | |
| [1]Bankfull Max Depth (ft) | 1.3 | 1.3 | 1.3 | 1.4 | -- | 2 | 1.5 | 1.5 | 1.5 | 1.5 | -- | 2 | 1.5 | 1.5 | 1.5 | 1.5 | -- | 2 | 1.4 | 1.4 | 1.4 | 1.5 | -- | 2 | | | | | | | | | | | | |
| Bankfull Cross Sectional Area ($ft^2$) | 6.1 | 6.9 | 6.9 | 7.8 | -- | 2 | 6.0 | 7.1 | 7.1 | 8.2 | -- | 2 | 6.2 | 7.5 | 7.5 | 8.9 | -- | 2 | 6.2 | 6.6 | 6.6 | 7.0 | -- | 2 | | | | | | | | | | | | |
| Width/Depth Ratio | 23.3 | 27.2 | 27.2 | 31.1 | -- | 2 | 24.9 | 30.2 | 30.2 | 35.5 | -- | 2 | 19.9 | 25.0 | 25.0 | 30.2 | -- | 2 | 10.3 | 14.0 | 14.0 | 17.7 | -- | 2 | | | | | | | | | | | | |
| Entrenchment Ratio | 3.7 | 5.5 | 5.5 | 7.3 | -- | 2 | 2.9 | 5.6 | 5.6 | 8.2 | -- | 2 | 3.1 | 6.0 | 6.0 | 9.0 | -- | 2 | 5.9 | 7.7 | 7.7 | 9.6 | -- | 2 | | | | | | | | | | | | |
| [1]Bank Height Ratio | 1.0 | 1.0 | 1.0 | 1.0 | -- | 2 | 1.0 | 1.0 | 1.0 | 1.0 | -- | 2 | 1.0 | 1.0 | 1.0 | 1.0 | -- | 2 | 1.0 | 1.0 | 1.0 | 1.0 | -- | 2 | | | | | | | | | | | | |
| **Profile** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Riffle Length (ft) | 9.0 | 20.9 | 17.6 | 40.2 | 8.9 | 13 | 3.5 | 10.67 | 10 | 24 | 4.4 | 27 | 3.5 | 11.45 | 9.75 | 29 | 4.85 | 28 | 5 | 15.87 | 16 | 31 | 6.877 | 23 | | | | | | | | | | | | |
| Riffle Slope (ft/ft) | 0.004 | 0.021 | 0.019 | 0.046 | 0.011 | 13 | 0.010 | 0.033 | 0.037 | 0.078 | 0.014 | 27 | 0.002 | 0.03 | 0.02 | 0.13 | 0.018 | 28 | 0.004 | 0.077 | 0.022 | 1.006 | 0.091 | 23 | | | | | | | | | | | | |
| Pool Length (ft) | 7.7 | 30.9 | 29.5 | 53.0 | 12.8 | 30 | 7.0 | 14.7 | 14.5 | 25.0 | 6.9 | 48 | 4 | 14.73 | 13 | 34.5 | 7.398 | 49 | 7 | 19.54 | 19 | 40 | 10.29 | 39 | | | | | | | | | | | | |
| Pool Max depth (ft) | 0.5 | 1.7 | 1.7 | 3.0 | 0.5 | 30 | 1.4 | 1.9 | 1.9 | 2.9 | 0.4 | 47 | 1.32 | 2.1 | 2.07 | 3.18 | 0.396 | 48 | 0.911 | 2.191 | 2.117 | 4.037 | 0.536 | 39 | | | | | | | | | | | | |
| Pool Spacing (ft) | 15.9 | 49.1 | 41.8 | 169.3 | 34.3 | 29 | 9.5 | 33.71 | 32 | 112 | 18.12 | 47 | 6.5 | 33.04 | 29.25 | 113.5 | 17.83 | 48 | 4 | 42.95 | 33 | 183 | 27.78 | 38 | | | | | | | | | | | | |
| **Pattern** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Channel Beltwidth (ft) | 16.1 | 31.1 | 28.4 | 96.7 | 16.0 | 26 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Radius of Curvature (ft) | 15.4 | 24.7 | 23.8 | 35.6 | 5.5 | 28 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Rc:Bankfull width (ft/ft) | 1.4 | 2.3 | 2.2 | 3.3 | 0.5 | 28 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Meander Wavelength (ft) | 58.2 | 99.5 | 98.9 | 176.5 | 22.2 | 27 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Meander Width Ratio | 1.5 | 2.9 | 2.6 | 9.0 | 1.5 | 26 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Pattern data will not typically be collected unless visual data, dimensional data or profile data indicate significant shifts from baseline

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Additional Reach Parameters** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Rosgen Classification | C4 | | | | | | C4 | | | | | | C4 | | | | | | C4 | | | | | | | | | | | | | | | | | |
| Channel Thalweg length (ft) | 1700 | | | | | | 1741 | | | | | | 1737 | | | | | | 1724 | | | | | | | | | | | | | | | | | |
| Sinuosity (ft) | 1.10 | | | | | | 1.13 | | | | | | 1.13 | | | | | | 1.12 | | | | | | | | | | | | | | | | | |
| Water Surface Slope (Channel) (ft/ft) | -- | | | | | | 0.01 | | | | | | 0.01 | | | | | | 0.01 | | | | | | | | | | | | | | | | | |
| BF slope (ft/ft) | 0.01 | | | | | | 0.01 | | | | | | 0.01 | | | | | | 0.009 | | | | | | | | | | | | | | | | | |
| [3]Ri% / Ru% / P% / G% / S% | 16 | 12 | 55 | 0 | 0 | | 17 | 16 | 42 | 6 | 0 | | 22 | 17 | 50 | 11 | 0 | | 23 | 21 | 49 | 7 | 0 | | | | | | | | | | | | | |
| [3]SC% / Sa% / G% / C% / B% / Be% | | | | | | | | | | | | | 40 | 23 | 28 | 8 | 1 | 0 | 47.76 | 2.52 | 38.12 | 10.56 | 1.04 | 0 | | | | | | | | | | | | |
| [3]d16 / d35 / d50 / d84 / d95 / | | | | | | | | | | | | | 0.163 | 0.293 | 5.983 | 30.96 | 77.57 | | 0.027 | 1.807 | 5.14 | 46.91 | 78.96 | | | | | | | | | | | | | |
| [2]% of Reach with Eroding Banks | 1 | | | | | | 0 | | | | | | 0 | | | | | | 0 | | | | | | | | | | | | | | | | | |
| Channel Stability or Habitat Metric | -- | | | | | | -- | | | | | | -- | | | | | | -- | | | | | | | | | | | | | | | | | |
| Biological or Other | -- | | | | | | -- | | | | | | -- | | | | | | -- | | | | | | | | | | | | | | | | | |

Shaded cells indicate that these will typically not be filled in.
1 = The distributions for these parameters can include information from both the cross-section surveys and the longitudinal profile.
2 = Proportion of reach exhibiting banks that are eroding based on the visual survey from visual assessment table
3 = Riffle, Run, Pool, Glide, Step; Silt/Clay, Sand, Gravel, Cobble, Boulder, Bedrock; dip = max pave, disp = max subpave
4. = Of value/needed only if the n exceeds 3

## Appendix E. Hydrologic Data

**Table 12.0. Bankfull Verification**
**UT Bear Creek (Weaver/McLeod) - EEP# 92347 - 2012 (MY-3)**

| Date of Data Collection | SILR Precip Gage Date of Occurrence | Evaluation Method | Photo # (if available) |
|---|---|---|---|
| 25-Mar-10 | Nov 11, 2009 (2.34”), Dec 2, 2009 (1.73”) and Feb 5, 2010 (1.94”). | Crest gauge evaluation, presence of wrack and drift lines, evaluation of NC CRONOS data | NA |
| 24-Nov-10 | May 17, 2010 (1.52"), May 23, 2010 (1.6"), Jun 15, 2010 (1.25"), Jul 9, 2010 (1.25"), Sep26, 2010 (1.28"), and Sep 30, 2010 (2.87") | Crest gauge evaluation, presence of wrack and drift lines, evaluation of NC CRONOS data | NA |
| 11-Mar-11 | Unknown. No substantial rainfall events recorded at SILR precipitation gage | Crest gauge evaluation, presence of wrack and drift lines | NA |
| 26-Sep-11 | Crest gauge does not indicate any bankfull event during Apr to Sep 2011, and no recent wrack/drift lines were observed, despite 2.13" rainfall at SILR on Sep 21, 2011 | Crest gauge evaluation, presence of wrack and drift lines | NA |
| 10-May-12 | May 14+15, 2012 (1.80"). Ant colony in crest gage carried cork to top of stake; flood stage record is unclear. | Crest gauge evaluation, presence of wrack and drift lines, NC CRONOS data | NA |
| 26-Oct-12 | Jul 9-11, 2012 (2.2"), Sep 17-19 (1.0"), Sep 28-30 (1.4"). Crest gage does not indicate any recent bankfull event. | Crest gauge evaluation, presence of wrack and drift lines, NC CRONOS data | NA |
| | | | |
| | | | |

| Table 13.0. Wetland Gauge Attainment Data<br>UT Bear Creek (Weaver/McLeod) EEP# 92347 - 2012 (MY-3) | | | | | |
|---|---|---|---|---|---|
| | Success Criteria Achieved/Max Consecutive Days during Growing Season (Percentage of 216-day Growing Season) | | | | |
| Gauge | Year 1 (2010) | Year 2 (2011) | Year 3 (2012) | Year 4 (2013) | Year 5 (2014) |
| 09BEA457 | No/21 days (9.7%) | Yes/37 days (17.1%) | Yes/28 days (13.0%) | | |
| 138BDBD7 | No/20 days (9.2%) | Yes/43 days (19.9%) | Yes/30 days (13.8%) | | |

Monthly Precipitation Totals at Siler City Airport (SILR)

| Month-Yr | # Days | Precip Total |
|---|---|---|
| | | inches |
| Dec-11 | 31 | 1.84 |
| Jan-12 | 31 | 1.60 |
| Feb-12 | 29 | 2.18 |
| Mar-12 | 31 | 3.10 |
| Apr-12 | 30 | 1.97 |
| May-12 | 31 | 4.08 |
| Jun-12 | 30 | 1.47 |
| Jul-12 | 31 | 4.50 |
| Aug-12 | 31 | 2.17 |
| Sep-12 | 30 | 3.77 |
| Oct-12 | 31 | 0.54 |
| Nov-12 | 30 | 0.29 |
| | | |
| | 12-mo Total | 27.51 |

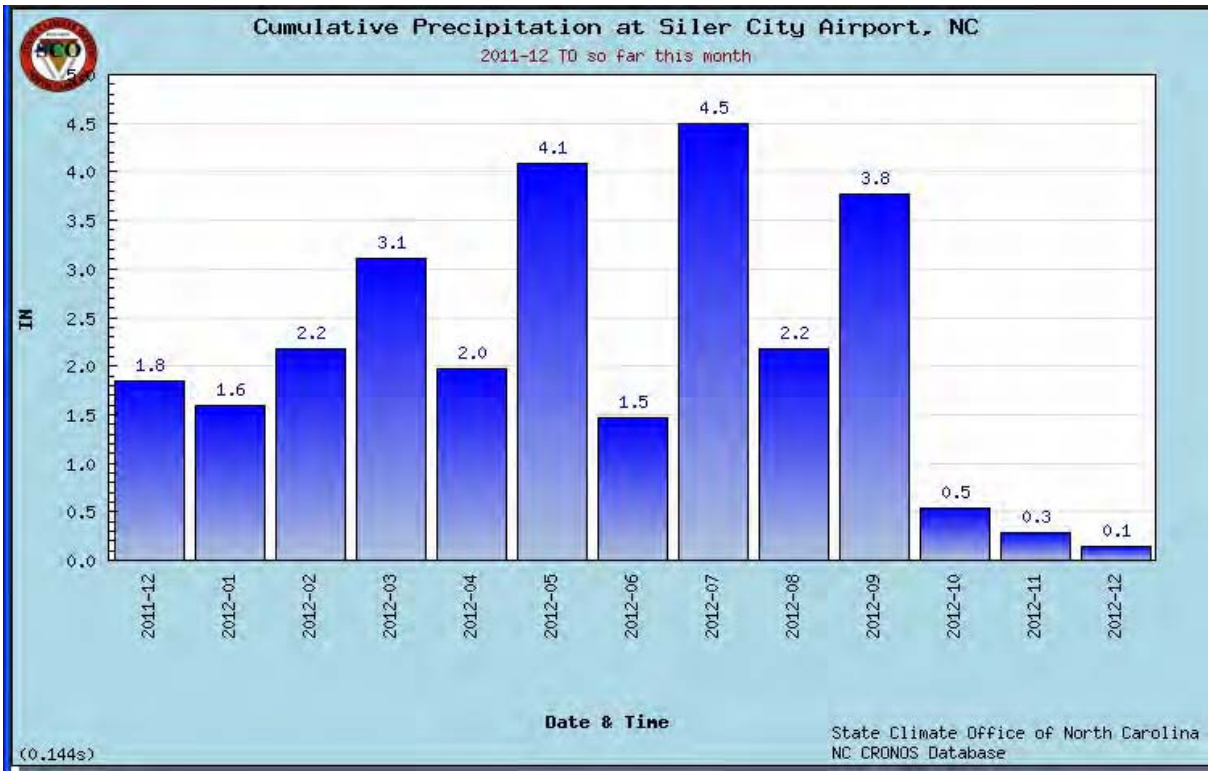



Figure 8.0 Monthly Precipitation Data Graph at Siler City Airport (SILR), Chatham County NC

Figure 8.1 UT Bear Creek (EWeaver/McLeod) EEP #92347 -- 2012 (MY3)
Groundwater Monitoring Gauge 9BEA457

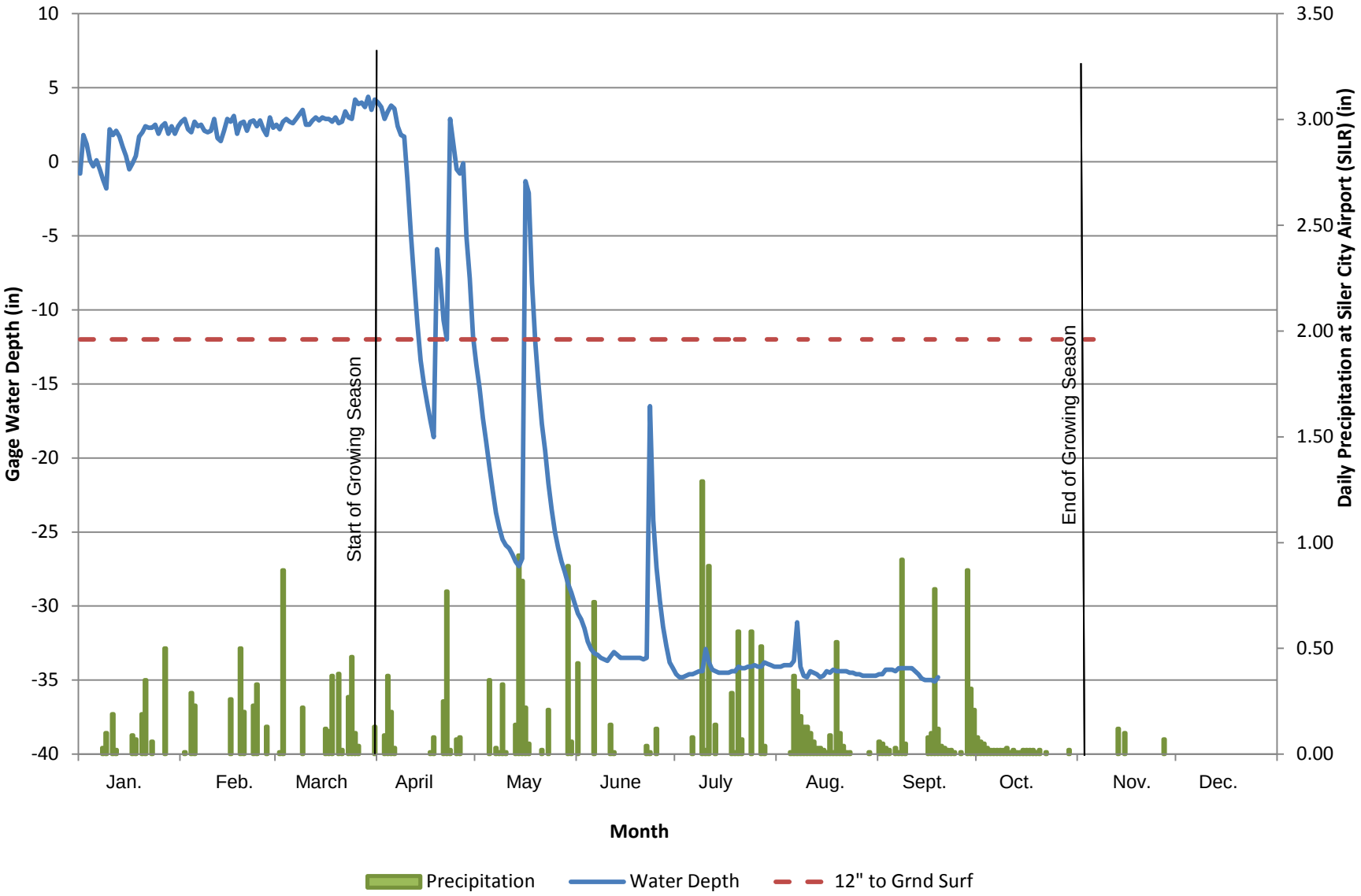
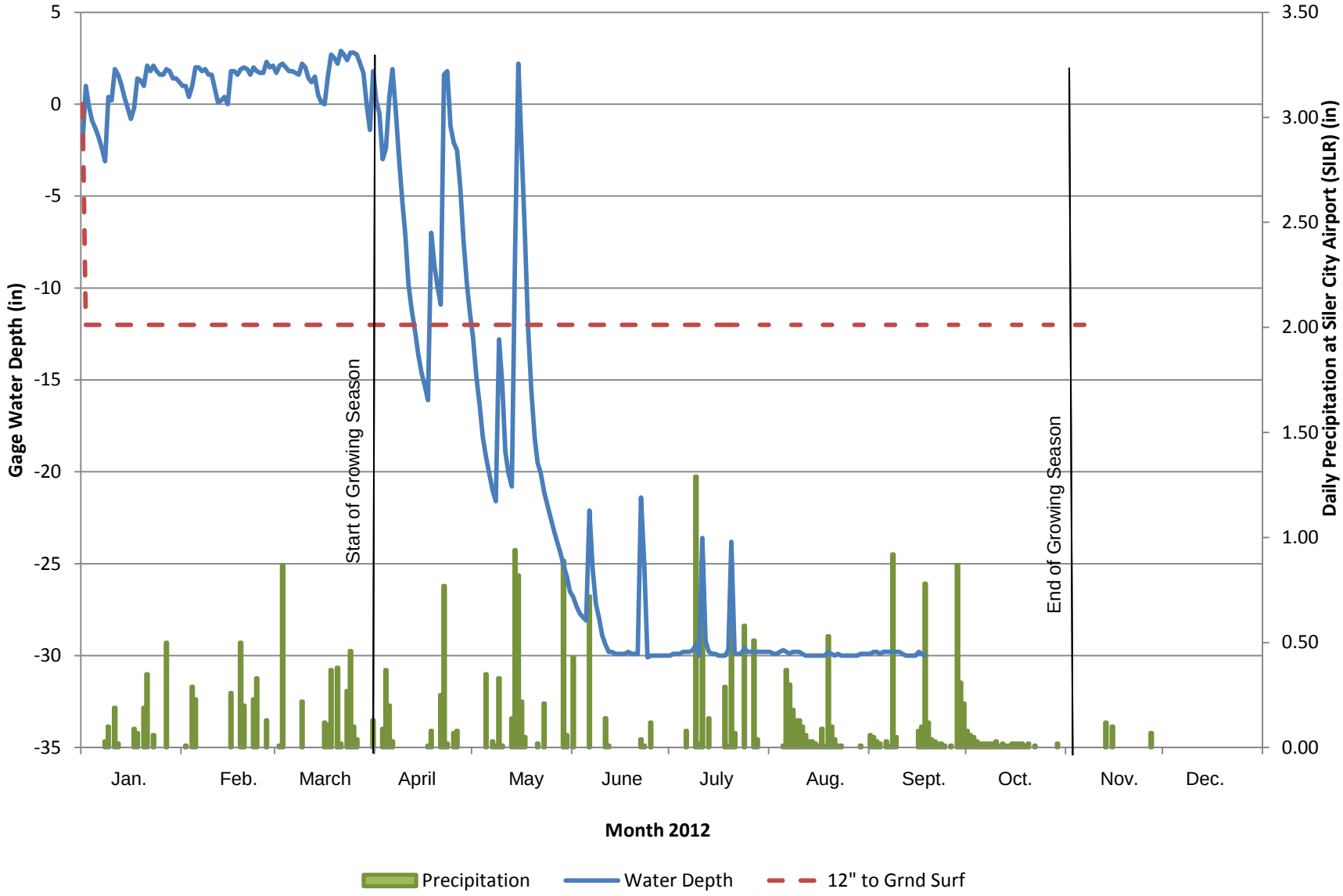


Figure 8.1. UT Bear Creek (Weaver/McLeod) EEP #92347) -- 2011 (MY3)
Groundwater Monitoring Gauge 138BDBD7



| Gauge 09BEA457 -- Eastern (lower) gage near creek | | | | |
|---|---|---|---|---|
| Date | Time | Depth | Unit | 12" to Grnd Surf |
| 1/1/2012 | 0:00 | -0.8 | in | -12 |
| 1/2/2012 | 0:00 | 1.8 | in | -12 |
| 1/3/2012 | 0:00 | 1.2 | in | -12 |
| 1/4/2012 | 0:00 | 0.1 | in | -12 |
| 1/5/2012 | 0:00 | -0.3 | in | -12 |
| 1/6/2012 | 0:00 | 0.1 | in | -12 |
| 1/7/2012 | 0:00 | -0.5 | in | -12 |
| 1/8/2012 | 0:00 | -1.2 | in | -12 |
| 1/9/2012 | 0:00 | -1.8 | in | -12 |
| 1/10/2012 | 0:00 | 2.2 | in | -12 |
| 1/11/2012 | 0:00 | 1.8 | in | -12 |
| 1/12/2012 | 0:00 | 2.1 | in | -12 |
| 1/13/2012 | 0:00 | 1.7 | in | -12 |
| 1/14/2012 | 0:00 | 1 | in | -12 |
| 1/15/2012 | 0:00 | 0.4 | in | -12 |
| 1/16/2012 | 0:00 | -0.5 | in | -12 |
| 1/17/2012 | 0:00 | -0.1 | in | -12 |
| 1/18/2012 | 0:00 | 0.4 | in | -12 |
| 1/19/2012 | 0:00 | 1.7 | in | -12 |
| 1/20/2012 | 0:00 | 2 | in | -12 |
| 1/21/2012 | 0:00 | 2.4 | in | -12 |
| 1/22/2012 | 0:00 | 2.3 | in | -12 |
| 1/23/2012 | 0:00 | 2.3 | in | -12 |
| 1/24/2012 | 0:00 | 2.5 | in | -12 |
| 1/25/2012 | 0:00 | 1.9 | in | -12 |
| 1/26/2012 | 0:00 | 2.4 | in | -12 |
| 1/27/2012 | 0:00 | 2.6 | in | -12 |
| 1/28/2012 | 0:00 | 1.9 | in | -12 |
| 1/29/2012 | 0:00 | 2.4 | in | -12 |
| 1/30/2012 | 0:00 | 1.9 | in | -12 |
| 1/31/2012 | 0:00 | 2.4 | in | -12 |
| 2/1/2012 | 0:00 | 2.7 | in | -12 |
| 2/2/2012 | 0:00 | 2.9 | in | -12 |
| 2/3/2012 | 0:00 | 2.2 | in | -12 |
| 2/4/2012 | 0:00 | 2 | in | -12 |
| 2/5/2012 | 0:00 | 2.7 | in | -12 |
| 2/6/2012 | 0:00 | 2.4 | in | -12 |
| 2/7/2012 | 0:00 | 2.5 | in | -12 |
| 2/8/2012 | 0:00 | 2.1 | in | -12 |
| 2/9/2012 | 0:00 | 2 | in | -12 |
| 2/10/2012 | 0:00 | 2.1 | in | -12 |
| 2/11/2012 | 0:00 | 2.9 | in | -12 |
| 2/12/2012 | 0:00 | 1.6 | in | -12 |
| 2/13/2012 | 0:00 | 1.4 | in | -12 |
| 2/14/2012 | 0:00 | 2.1 | in | -12 |

# Days < 12" Depth

28

% Grow season

12.96%

Growing Season

Depth < 12" in Grow Seas

| Gauge 09BEA457 -- Eastern (lower) gage near creek | | | | |
|---|---|---|---|---|
| Date | Time | Depth | Unit | 12" to Grnd Surf |
| 2/15/2012 | 0:00 | 2.9 | in | -12 |
| 2/16/2012 | 0:00 | 2.7 | in | -12 |
| 2/17/2012 | 0:00 | 3.1 | in | -12 |
| 2/18/2012 | 0:00 | 1.9 | in | -12 |
| 2/19/2012 | 0:00 | 2.6 | in | -12 |
| 2/20/2012 | 0:00 | 2.7 | in | -12 |
| 2/21/2012 | 0:00 | 2.1 | in | -12 |
| 2/22/2012 | 0:00 | 2.7 | in | -12 |
| 2/23/2012 | 0:00 | 2.8 | in | -12 |
| 2/24/2012 | 0:00 | 2.4 | in | -12 |
| 2/25/2012 | 0:00 | 2.8 | in | -12 |
| 2/26/2012 | 0:00 | 2.2 | in | -12 |
| 2/27/2012 | 0:00 | 1.8 | in | -12 |
| 2/28/2012 | 0:00 | 3 | in | -12 |
| 2/29/2012 | 0:00 | 2.3 | in | -12 |
| 3/1/2012 | 0:00 | 2.5 | in | -12 |
| 3/2/2012 | 0:00 | 2.2 | in | -12 |
| 3/3/2012 | 0:00 | 2.7 | in | -12 |
| 3/4/2012 | 0:00 | 2.9 | in | -12 |
| 3/5/2012 | 0:00 | 2.7 | in | -12 |
| 3/6/2012 | 0:00 | 2.6 | in | -12 |
| 3/7/2012 | 0:00 | 2.9 | in | -12 |
| 3/8/2012 | 0:00 | 3.2 | in | -12 |
| 3/9/2012 | 0:00 | 3.5 | in | -12 |
| 3/10/2012 | 0:00 | 2.5 | in | -12 |
| 3/11/2012 | 0:00 | 2.5 | in | -12 |
| 3/12/2012 | 0:00 | 2.8 | in | -12 |
| 3/13/2012 | 0:00 | 3 | in | -12 |
| 3/14/2012 | 0:00 | 2.8 | in | -12 |
| 3/15/2012 | 0:00 | 3 | in | -12 |
| 3/16/2012 | 0:00 | 2.9 | in | -12 |
| 3/17/2012 | 0:00 | 2.9 | in | -12 |
| 3/18/2012 | 0:00 | 2.7 | in | -12 |
| 3/19/2012 | 0:00 | 3 | in | -12 |
| 3/20/2012 | 0:00 | 2.6 | in | -12 |
| 3/21/2012 | 0:00 | 2.7 | in | -12 |
| 3/22/2012 | 0:00 | 3.4 | in | -12 |
| 3/23/2012 | 0:00 | 3 | in | -12 |
| 3/24/2012 | 0:00 | 2.9 | in | -12 |
| 3/25/2012 | 0:00 | 4.2 | in | -12 |
| 3/26/2012 | 0:00 | 3.9 | in | -12 |
| 3/27/2012 | 0:00 | 4 | in | -12 |
| 3/28/2012 | 0:00 | 3.7 | in | -12 |
| 3/29/2012 | 0:00 | 4.4 | in | -12 |
| 3/30/2012 | 0:00 | 3.5 | in | -12 |

Growing Season

Depth < 12" in Grow Seas

| Gauge 09BEA457 -- Eastern (lower) gage near creek | | | | |
|---|---|---|---|---|
| Date | Time | Depth | Unit | 12" to Grnd Surf |
| 3/31/2012 | 0:00 | 4.2 | in | -12 |
| 4/1/2012 | 0:00 | 4 | in | -12 |
| 4/2/2012 | 0:00 | 3.7 | in | -12 |
| 4/3/2012 | 0:00 | 2.9 | in | -12 |
| 4/4/2012 | 0:00 | 3.4 | in | -12 |
| 4/5/2012 | 0:00 | 3.8 | in | -12 |
| 4/6/2012 | 0:00 | 3.6 | in | -12 |
| 4/7/2012 | 0:00 | 2.4 | in | -12 |
| 4/8/2012 | 0:00 | 1.8 | in | -12 |
| 4/9/2012 | 0:00 | 1.7 | in | -12 |
| 4/10/2012 | 0:00 | -1.3 | in | -12 |
| 4/11/2012 | 0:00 | -4.8 | in | -12 |
| 4/12/2012 | 0:00 | -7.9 | in | -12 |
| 4/13/2012 | 0:00 | -10.9 | in | -12 |
| 4/14/2012 | 0:00 | -13.4 | in | -12 |
| 4/15/2012 | 0:00 | -15 | in | -12 |
| 4/16/2012 | 0:00 | -16.3 | in | -12 |
| 4/17/2012 | 0:00 | -17.5 | in | -12 |
| 4/18/2012 | 0:00 | -18.6 | in | -12 |
| 4/19/2012 | 0:00 | -5.9 | in | -12 |
| 4/20/2012 | 0:00 | -7.9 | in | -12 |
| 4/21/2012 | 0:00 | -10.7 | in | -12 |
| 4/22/2012 | 0:00 | -12 | in | -12 |
| 4/23/2012 | 0:00 | 2.9 | in | -12 |
| 4/24/2012 | 0:00 | 1.2 | in | -12 |
| 4/25/2012 | 0:00 | -0.5 | in | -12 |
| 4/26/2012 | 0:00 | -0.8 | in | -12 |
| 4/27/2012 | 0:00 | -0.1 | in | -12 |
| 4/28/2012 | 0:00 | -5.1 | in | -12 |
| 4/29/2012 | 0:00 | -7.9 | in | -12 |
| 4/30/2012 | 0:00 | -11.8 | in | -12 |
| 5/1/2012 | 0:00 | -13.7 | in | -12 |
| 5/2/2012 | 0:00 | -15.3 | in | -12 |
| 5/3/2012 | 0:00 | -17.3 | in | -12 |
| 5/4/2012 | 0:00 | -18.9 | in | -12 |
| 5/5/2012 | 0:00 | -20.6 | in | -12 |
| 5/6/2012 | 0:00 | -22.2 | in | -12 |
| 5/7/2012 | 0:00 | -23.7 | in | -12 |
| 5/8/2012 | 0:00 | -24.7 | in | -12 |
| 5/9/2012 | 0:00 | -25.5 | in | -12 |
| 5/10/2012 | 0:00 | -25.9 | in | -12 |
| 5/11/2012 | 0:00 | -26.1 | in | -12 |
| 5/12/2012 | 0:00 | -26.5 | in | -12 |
| 5/13/2012 | 0:00 | -27 | in | -12 |
| 5/14/2012 | 0:00 | -27.3 | in | -12 |

Growing Season

Depth < 12" in Grow Seas

| Gauge 09BEA457 -- Eastern (lower) gage near creek | | | | |
|---|---|---|---|---|
| Date | Time | Depth | Unit | 12" to Grnd Surf |
| 5/15/2012 | 0:00 | -26.8 | in | -12 |
| 5/16/2012 | 0:00 | -1.3 | in | -12 |
| 5/17/2012 | 0:00 | -2.1 | in | -12 |
| 5/18/2012 | 0:00 | -8.2 | in | -12 |
| 5/19/2012 | 0:00 | -12.2 | in | -12 |
| 5/20/2012 | 0:00 | -15.1 | in | -12 |
| 5/21/2012 | 0:00 | -17.7 | in | -12 |
| 5/22/2012 | 0:00 | -19.5 | in | -12 |
| 5/23/2012 | 0:00 | -21.7 | in | -12 |
| 5/24/2012 | 0:00 | -23.5 | in | -12 |
| 5/25/2012 | 0:00 | -25 | in | -12 |
| 5/26/2012 | 0:00 | -26.1 | in | -12 |
| 5/27/2012 | 0:00 | -27 | in | -12 |
| 5/28/2012 | 0:00 | -27.7 | in | -12 |
| 5/29/2012 | 0:00 | -28.5 | in | -12 |
| 5/30/2012 | 0:00 | -29.1 | in | -12 |
| 5/31/2012 | 0:00 | -29.8 | in | -12 |
| 6/1/2012 | 0:00 | -30.5 | in | -12 |
| 6/2/2012 | 0:00 | -30.9 | in | -12 |
| 6/3/2012 | 0:00 | -31.5 | in | -12 |
| 6/4/2012 | 0:00 | -32.4 | in | -12 |
| 6/5/2012 | 0:00 | -32.9 | in | -12 |
| 6/6/2012 | 0:00 | -33.2 | in | -12 |
| 6/7/2012 | 0:00 | -33.3 | in | -12 |
| 6/8/2012 | 0:00 | -33.5 | in | -12 |
| 6/9/2012 | 0:00 | -33.6 | in | -12 |
| 6/10/2012 | 0:00 | -33.7 | in | -12 |
| 6/11/2012 | 0:00 | -33.4 | in | -12 |
| 6/12/2012 | 0:00 | -33.1 | in | -12 |
| 6/13/2012 | 0:00 | -33.3 | in | -12 |
| 6/14/2012 | 0:00 | -33.5 | in | -12 |
| 6/15/2012 | 0:00 | -33.5 | in | -12 |
| 6/16/2012 | 0:00 | -33.5 | in | -12 |
| 6/17/2012 | 0:00 | -33.5 | in | -12 |
| 6/18/2012 | 0:00 | -33.5 | in | -12 |
| 6/19/2012 | 0:00 | -33.5 | in | -12 |
| 6/20/2012 | 0:00 | -33.5 | in | -12 |
| 6/21/2012 | 0:00 | -33.6 | in | -12 |
| 6/22/2012 | 0:00 | -33.5 | in | -12 |
| 6/23/2012 | 0:00 | -16.5 | in | -12 |
| 6/24/2012 | 0:00 | -24.2 | in | -12 |
| 6/25/2012 | 0:00 | -27.4 | in | -12 |
| 6/26/2012 | 0:00 | -29.6 | in | -12 |
| 6/27/2012 | 0:00 | -31.4 | in | -12 |
| 6/28/2012 | 0:00 | -32.7 | in | -12 |

Growing Season

Depth < 12" in Grow Seas

| Gauge 09BEA457 -- Eastern (lower) gage near creek | | | | |
|---|---|---|---|---|
| Date | Time | Depth | Unit | 12" to Grnd Surf |
| 6/29/2012 | 0:00 | -33.8 | in | -12 |
| 6/30/2012 | 0:00 | -34.2 | in | -12 |
| 7/1/2012 | 0:00 | -34.6 | in | -12 |
| 7/2/2012 | 0:00 | -34.8 | in | -12 |
| 7/3/2012 | 0:00 | -34.8 | in | -12 |
| 7/4/2012 | 0:00 | -34.7 | in | -12 |
| 7/5/2012 | 0:00 | -34.6 | in | -12 |
| 7/6/2012 | 0:00 | -34.6 | in | -12 |
| 7/7/2012 | 0:00 | -34.5 | in | -12 |
| 7/8/2012 | 0:00 | -34.4 | in | -12 |
| 7/9/2012 | 0:00 | -34.4 | in | -12 |
| 7/10/2012 | 0:00 | -32.9 | in | -12 |
| 7/11/2012 | 0:00 | -33.8 | in | -12 |
| 7/12/2012 | 0:00 | -34.3 | in | -12 |
| 7/13/2012 | 0:00 | -34.4 | in | -12 |
| 7/14/2012 | 0:00 | -34.5 | in | -12 |
| 7/15/2012 | 0:00 | -34.5 | in | -12 |
| 7/16/2012 | 0:00 | -34.5 | in | -12 |
| 7/17/2012 | 0:00 | -34.5 | in | -12 |
| 7/18/2012 | 0:00 | -34.4 | in | -12 |
| 7/19/2012 | 0:00 | -34.4 | in | -12 |
| 7/20/2012 | 0:00 | -34.1 | in | -12 |
| 7/21/2012 | 0:00 | -34.2 | in | -12 |
| 7/22/2012 | 0:00 | -34.2 | in | -12 |
| 7/23/2012 | 0:00 | -34.1 | in | -12 |
| 7/24/2012 | 0:00 | -34.1 | in | -12 |
| 7/25/2012 | 0:00 | -34 | in | -12 |
| 7/26/2012 | 0:00 | -34.1 | in | -12 |
| 7/27/2012 | 0:00 | -34.1 | in | -12 |
| 7/28/2012 | 0:00 | -33.8 | in | -12 |
| 7/29/2012 | 0:00 | -33.9 | in | -12 |
| 7/30/2012 | 0:00 | -34 | in | -12 |
| 7/31/2012 | 0:00 | -34.1 | in | -12 |
| 8/1/2012 | 0:00 | -34.1 | in | -12 |
| 8/2/2012 | 0:00 | -34.1 | in | -12 |
| 8/3/2012 | 0:00 | -34 | in | -12 |
| 8/4/2012 | 0:00 | -34 | in | -12 |
| 8/5/2012 | 0:00 | -34 | in | -12 |
| 8/6/2012 | 0:00 | -33.7 | in | -12 |
| 8/7/2012 | 0:00 | -31.1 | in | -12 |
| 8/8/2012 | 0:00 | -34.1 | in | -12 |
| 8/9/2012 | 0:00 | -34.7 | in | -12 |
| 8/10/2012 | 0:00 | -34.8 | in | -12 |
| 8/11/2012 | 0:00 | -34.4 | in | -12 |
| 8/12/2012 | 0:00 | -34.5 | in | -12 |

Growing Season

Depth < 12" in Grow Seas

| Gauge 09BEA457 -- Eastern (lower) gage near creek | | | | |
|---|---|---|---|---|
| Date | Time | Depth | Unit | 12" to Grnd Surf |
| 8/13/2012 | 0:00 | -34.6 | in | -12 |
| 8/14/2012 | 0:00 | -34.8 | in | -12 |
| 8/15/2012 | 0:00 | -34.7 | in | -12 |
| 8/16/2012 | 0:00 | -34.4 | in | -12 |
| 8/17/2012 | 0:00 | -34.5 | in | -12 |
| 8/18/2012 | 0:00 | -34.3 | in | -12 |
| 8/19/2012 | 0:00 | -34.4 | in | -12 |
| 8/20/2012 | 0:00 | -34.4 | in | -12 |
| 8/21/2012 | 0:00 | -34.4 | in | -12 |
| 8/22/2012 | 0:00 | -34.4 | in | -12 |
| 8/23/2012 | 0:00 | -34.5 | in | -12 |
| 8/24/2012 | 0:00 | -34.5 | in | -12 |
| 8/25/2012 | 0:00 | -34.6 | in | -12 |
| 8/26/2012 | 0:00 | -34.6 | in | -12 |
| 8/27/2012 | 0:00 | -34.7 | in | -12 |
| 8/28/2012 | 0:00 | -34.7 | in | -12 |
| 8/29/2012 | 0:00 | -34.7 | in | -12 |
| 8/30/2012 | 0:00 | -34.7 | in | -12 |
| 8/31/2012 | 0:00 | -34.7 | in | -12 |
| 9/1/2012 | 0:00 | -34.6 | in | -12 |
| 9/2/2012 | 0:00 | -34.6 | in | -12 |
| 9/3/2012 | 0:00 | -34.3 | in | -12 |
| 9/4/2012 | 0:00 | -34.3 | in | -12 |
| 9/5/2012 | 0:00 | -34.3 | in | -12 |
| 9/6/2012 | 0:00 | -34.4 | in | -12 |
| 9/7/2012 | 0:00 | -34.2 | in | -12 |
| 9/8/2012 | 0:00 | -34.2 | in | -12 |
| 9/9/2012 | 0:00 | -34.2 | in | -12 |
| 9/10/2012 | 0:00 | -34.2 | in | -12 |
| 9/11/2012 | 0:00 | -34.2 | in | -12 |
| 9/12/2012 | 0:00 | -34.4 | in | -12 |
| 9/13/2012 | 0:00 | -34.6 | in | -12 |
| 9/14/2012 | 0:00 | -34.9 | in | -12 |
| 9/15/2012 | 0:00 | -35 | in | -12 |
| 9/16/2012 | 0:00 | -35 | in | -12 |
| 9/17/2012 | 0:00 | -35 | in | -12 |
| 9/18/2012 | 0:00 | -35.1 | in | -12 |
| 9/19/2012 | 0:00 | -34.8 | in | -12 |
| 9/20/2012 | 0:00 | -33.8 | in | -12 |
| 9/21/2012 | 0:00 | -35 | in | -12 |
| 9/22/2012 | 0:00 | -35.1 | in | -12 |
| 9/23/2012 | 0:00 | -35.2 | in | -12 |
| 9/24/2012 | 0:00 | -35.3 | in | -12 |
| 9/25/2012 | 0:00 | -35.3 | in | -12 |
| 9/26/2012 | 0:00 | -35.4 | in | -12 |

Growing Season

Depth < 12" in Grow Seas

| Gauge 09BEA457 -- Eastern (lower) gage near creek | | | | |
|---|---|---|---|---|
| Date | Time | Depth | Unit | 12" to Grnd Surf |
| 9/27/2012 | 0:00 | -35.5 | in | -12 |
| 9/28/2012 | 0:00 | -35.5 | in | -12 |
| 9/29/2012 | 0:00 | -35.3 | in | -12 |
| 9/30/2012 | 0:00 | -33.7 | in | -12 |
| 10/1/2012 | 0:00 | -26.4 | in | -12 |
| 10/2/2012 | 0:00 | -24.8 | in | -12 |
| 10/3/2012 | 0:00 | -15.4 | in | -12 |
| 10/4/2012 | 0:00 | -14.6 | in | -12 |
| 10/5/2012 | 0:00 | -16 | in | -12 |
| 10/6/2012 | 0:00 | -17.7 | in | -12 |
| 10/7/2012 | 0:00 | -18.9 | in | -12 |
| 10/8/2012 | 0:00 | -20.8 | in | -12 |
| 10/9/2012 | 0:00 | -22.1 | in | -12 |
| 10/10/2012 | 0:00 | -21.6 | in | -12 |
| 10/11/2012 | 0:00 | -21.5 | in | -12 |
| 10/12/2012 | 0:00 | -22.4 | in | -12 |
| 10/13/2012 | 0:00 | -23.3 | in | -12 |
| 10/14/2012 | 0:00 | -24.1 | in | -12 |
| 10/15/2012 | 0:00 | -24.9 | in | -12 |
| 10/16/2012 | 0:00 | -25.7 | in | -12 |
| 10/17/2012 | 0:00 | -26.6 | in | -12 |
| 10/18/2012 | 0:00 | -27.3 | in | -12 |
| 10/19/2012 | 0:00 | -27.8 | in | -12 |
| 10/20/2012 | 0:00 | -28.4 | in | -12 |
| 10/21/2012 | 0:00 | -29 | in | -12 |
| 10/22/2012 | 0:00 | -29.8 | in | -12 |
| 10/23/2012 | 0:00 | -30.4 | in | -12 |
| 10/24/2012 | 0:00 | -30.9 | in | -12 |
| 10/25/2012 | 0:00 | -31.5 | in | -12 |
| 10/26/2012 | 0:00 | -32.2 | in | -12 |
| 10/27/2012 | | | | -12 |
| 10/28/2012 | | | | -12 |
| 10/29/2012 | | | | -12 |
| 10/30/2012 | | | | -12 |
| 10/31/2012 | | | | -12 |
| 11/1/2012 | | | | -12 |
| 11/2/2012 | | | | -12 |
| 11/3/2012 | | | | -12 |
| 11/4/2012 | | | | -12 |
| 11/5/2012 | | | | -12 |
| 11/6/2012 | | | | -12 |
| 11/7/2012 | | | | -12 |
| 11/8/2012 | | | | -12 |
| 11/9/2012 | | | | -12 |
| 11/10/2012 | | | | -12 |

Growing Season

Depth < 12" in Grow Seas

| Gauge 138BDBD7 -- West (upper) gauge near fence | | | | |
|---|---|---|---|---|
| Date | Time | Depth | Unit | 12" to Grnd Surf |
| 1/1/2012 | 15:00 | -2.1 | in | -12 |
| 1/2/2012 | 15:00 | 1 | in | -12 |
| 1/3/2012 | 15:00 | -0.1 | in | -12 |
| 1/4/2012 | 15:00 | -0.9 | in | -12 |
| 1/5/2012 | 15:00 | -1.3 | in | -12 |
| 1/6/2012 | 15:00 | -1.8 | in | -12 |
| 1/7/2012 | 15:00 | -2.4 | in | -12 |
| 1/8/2012 | 15:00 | -3.1 | in | -12 |
| 1/9/2012 | 15:00 | 0.4 | in | -12 |
| 1/10/2012 | 15:00 | 0.2 | in | -12 |
| 1/11/2012 | 15:00 | 1.9 | in | -12 |
| 1/12/2012 | 15:00 | 1.6 | in | -12 |
| 1/13/2012 | 15:00 | 1.1 | in | -12 |
| 1/14/2012 | 15:00 | 0.4 | in | -12 |
| 1/15/2012 | 15:00 | -0.2 | in | -12 |
| 1/16/2012 | 15:00 | -0.8 | in | -12 |
| 1/17/2012 | 15:00 | -0.2 | in | -12 |
| 1/18/2012 | 15:00 | 1.4 | in | -12 |
| 1/19/2012 | 15:00 | 1.3 | in | -12 |
| 1/20/2012 | 15:00 | 1 | in | -12 |
| 1/21/2012 | 15:00 | 2.1 | in | -12 |
| 1/22/2012 | 15:00 | 1.8 | in | -12 |
| 1/23/2012 | 15:00 | 2.1 | in | -12 |
| 1/24/2012 | 15:00 | 1.8 | in | -12 |
| 1/25/2012 | 15:00 | 1.6 | in | -12 |
| 1/26/2012 | 15:00 | 1.6 | in | -12 |
| 1/27/2012 | 15:00 | 1.9 | in | -12 |
| 1/28/2012 | 15:00 | 1.8 | in | -12 |
| 1/29/2012 | 15:00 | 1.4 | in | -12 |
| 1/30/2012 | 15:00 | 1.4 | in | -12 |
| 1/31/2012 | 15:00 | 1.2 | in | -12 |
| 2/1/2012 | 15:00 | 1 | in | -12 |
| 2/2/2012 | 15:00 | 1 | in | -12 |
| 2/3/2012 | 15:00 | 0.4 | in | -12 |
| 2/4/2012 | 15:00 | 1 | in | -12 |
| 2/5/2012 | 15:00 | 2 | in | -12 |
| 2/6/2012 | 15:00 | 2 | in | -12 |
| 2/7/2012 | 15:00 | 1.8 | in | -12 |
| 2/8/2012 | 15:00 | 1.9 | in | -12 |
| 2/9/2012 | 15:00 | 1.6 | in | -12 |
| 2/10/2012 | 15:00 | 1.6 | in | -12 |
| 2/11/2012 | 15:00 | 0.8 | in | -12 |
| 2/12/2012 | 15:00 | 0.1 | in | -12 |
| 2/13/2012 | 15:00 | 0.2 | in | -12 |
| 2/14/2012 | 15:00 | 0.4 | in | -12 |

# Days <_ 12" Depth

30

% Grow season

13.89%

Growing Season

Depth < 12" in Grow Seas

| Gauge 138BDBD7 -- West (upper) gauge near fence | | | | |
|---|---|---|---|---|
| Date | Time | Depth | Unit | 12" to Grnd Surf |
| 2/15/2012 | 15:00 | 0 | in | -12 |
| 2/16/2012 | 15:00 | 1.8 | in | -12 |
| 2/17/2012 | 15:00 | 1.8 | in | -12 |
| 2/18/2012 | 15:00 | 1.6 | in | -12 |
| 2/19/2012 | 15:00 | 1.9 | in | -12 |
| 2/20/2012 | 15:00 | 2 | in | -12 |
| 2/21/2012 | 15:00 | 1.9 | in | -12 |
| 2/22/2012 | 15:00 | 1.6 | in | -12 |
| 2/23/2012 | 15:00 | 2 | in | -12 |
| 2/24/2012 | 15:00 | 1.8 | in | -12 |
| 2/25/2012 | 15:00 | 1.7 | in | -12 |
| 2/26/2012 | 15:00 | 1.7 | in | -12 |
| 2/27/2012 | 15:00 | 2.3 | in | -12 |
| 2/28/2012 | 15:00 | 2 | in | -12 |
| 2/29/2012 | 15:00 | 2.1 | in | -12 |
| 3/1/2012 | 15:00 | 1.7 | in | -12 |
| 3/2/2012 | 15:00 | 2.1 | in | -12 |
| 3/3/2012 | 15:00 | 2.2 | in | -12 |
| 3/4/2012 | 15:00 | 2 | in | -12 |
| 3/5/2012 | 15:00 | 1.8 | in | -12 |
| 3/6/2012 | 15:00 | 1.8 | in | -12 |
| 3/7/2012 | 15:00 | 1.7 | in | -12 |
| 3/8/2012 | 15:00 | 1.6 | in | -12 |
| 3/9/2012 | 15:00 | 2.2 | in | -12 |
| 3/10/2012 | 15:00 | 2 | in | -12 |
| 3/11/2012 | 15:00 | 1.4 | in | -12 |
| 3/12/2012 | 15:00 | 1.2 | in | -12 |
| 3/13/2012 | 15:00 | 1.5 | in | -12 |
| 3/14/2012 | 15:00 | 0.5 | in | -12 |
| 3/15/2012 | 15:00 | 0.1 | in | -12 |
| 3/16/2012 | 15:00 | 0 | in | -12 |
| 3/17/2012 | 15:00 | 1.5 | in | -12 |
| 3/18/2012 | 15:00 | 2.7 | in | -12 |
| 3/19/2012 | 15:00 | 2.5 | in | -12 |
| 3/20/2012 | 15:00 | 2.2 | in | -12 |
| 3/21/2012 | 15:00 | 2.9 | in | -12 |
| 3/22/2012 | 15:00 | 2.7 | in | -12 |
| 3/23/2012 | 15:00 | 2.4 | in | -12 |
| 3/24/2012 | 15:00 | 2.8 | in | -12 |
| 3/25/2012 | 15:00 | 2.8 | in | -12 |
| 3/26/2012 | 15:00 | 2.7 | in | -12 |
| 3/27/2012 | 15:00 | 2.2 | in | -12 |
| 3/28/2012 | 15:00 | 1.7 | in | -12 |
| 3/29/2012 | 15:00 | 0 | in | -12 |
| 3/30/2012 | 15:00 | -1.4 | in | -12 |

Growing Season

Depth < 12" in Grow Seas

| Gauge 138BDBD7 -- West (upper) gauge near fence | | | | |
|---|---|---|---|---|
| Date | Time | Depth | Unit | 12" to Grnd Surf |
| 3/31/2012 | 15:00 | 1.8 | in | -12 |
| 4/1/2012 | 15:00 | 0.2 | in | -12 |
| 4/2/2012 | 15:00 | -0.5 | in | -12 |
| 4/3/2012 | 15:00 | -3 | in | -12 |
| 4/4/2012 | 15:00 | -2.4 | in | -12 |
| 4/5/2012 | 15:00 | 0.3 | in | -12 |
| 4/6/2012 | 15:00 | 1.9 | in | -12 |
| 4/7/2012 | 15:00 | -0.3 | in | -12 |
| 4/8/2012 | 15:00 | -2.9 | in | -12 |
| 4/9/2012 | 15:00 | -5.2 | in | -12 |
| 4/10/2012 | 15:00 | -7.2 | in | -12 |
| 4/11/2012 | 15:00 | -9.8 | in | -12 |
| 4/12/2012 | 15:00 | -11.2 | in | -12 |
| 4/13/2012 | 15:00 | -12.3 | in | -12 |
| 4/14/2012 | 15:00 | -13.6 | in | -12 |
| 4/15/2012 | 15:00 | -14.6 | in | -12 |
| 4/16/2012 | 15:00 | -15.3 | in | -12 |
| 4/17/2012 | 15:00 | -16.1 | in | -12 |
| 4/18/2012 | 15:00 | -7 | in | -12 |
| 4/19/2012 | 15:00 | -8.8 | in | -12 |
| 4/20/2012 | 15:00 | -10 | in | -12 |
| 4/21/2012 | 15:00 | -10.9 | in | -12 |
| 4/22/2012 | 15:00 | 1.6 | in | -12 |
| 4/23/2012 | 15:00 | 1.8 | in | -12 |
| 4/24/2012 | 15:00 | -1.2 | in | -12 |
| 4/25/2012 | 15:00 | -2.1 | in | -12 |
| 4/26/2012 | 15:00 | -2.5 | in | -12 |
| 4/27/2012 | 15:00 | -4.5 | in | -12 |
| 4/28/2012 | 15:00 | -7.4 | in | -12 |
| 4/29/2012 | 15:00 | -9.7 | in | -12 |
| 4/30/2012 | 15:00 | -11.4 | in | -12 |
| 5/1/2012 | 15:00 | -12.7 | in | -12 |
| 5/2/2012 | 15:00 | -14.8 | in | -12 |
| 5/3/2012 | 15:00 | -16.3 | in | -12 |
| 5/4/2012 | 15:00 | -18.1 | in | -12 |
| 5/5/2012 | 15:00 | -19.2 | in | -12 |
| 5/6/2012 | 15:00 | -20.1 | in | -12 |
| 5/7/2012 | 15:00 | -21 | in | -12 |
| 5/8/2012 | 15:00 | -21.6 | in | -12 |
| 5/9/2012 | 15:00 | -12.8 | in | -12 |
| 5/10/2012 | 15:00 | -15.3 | in | -12 |
| 5/11/2012 | 15:00 | -18.9 | in | -12 |
| 5/12/2012 | 15:00 | -20.1 | in | -12 |
| 5/13/2012 | 15:00 | -20.8 | in | -12 |
| 5/14/2012 | 15:00 | -8 | in | -12 |

Growing Season

Depth < 12" in Grow Seas

| Gauge 138BDBD7 -- West (upper) gauge near fence | | | | |
|---|---|---|---|---|
| Date | Time | Depth | Unit | 12" to Grnd Surf |
| 5/15/2012 | 15:00 | 2.2 | in | -12 |
| 5/16/2012 | 15:00 | -2.4 | in | -12 |
| 5/17/2012 | 15:00 | -7 | in | -12 |
| 5/18/2012 | 15:00 | -12.2 | in | -12 |
| 5/19/2012 | 15:00 | -15.6 | in | -12 |
| 5/20/2012 | 15:00 | -18.1 | in | -12 |
| 5/21/2012 | 15:00 | -19.5 | in | -12 |
| 5/22/2012 | 15:00 | -20.1 | in | -12 |
| 5/23/2012 | 15:00 | -21.1 | in | -12 |
| 5/24/2012 | 15:00 | -21.8 | in | -12 |
| 5/25/2012 | 15:00 | -22.5 | in | -12 |
| 5/26/2012 | 15:00 | -23.2 | in | -12 |
| 5/27/2012 | 15:00 | -23.8 | in | -12 |
| 5/28/2012 | 15:00 | -24.4 | in | -12 |
| 5/29/2012 | 15:00 | -25.1 | in | -12 |
| 5/30/2012 | 15:00 | -25.7 | in | -12 |
| 5/31/2012 | 15:00 | -26.5 | in | -12 |
| 6/1/2012 | 15:00 | -26.8 | in | -12 |
| 6/2/2012 | 15:00 | -27.3 | in | -12 |
| 6/3/2012 | 15:00 | -27.7 | in | -12 |
| 6/4/2012 | 15:00 | -27.9 | in | -12 |
| 6/5/2012 | 15:00 | -28.1 | in | -12 |
| 6/6/2012 | 15:00 | -22.1 | in | -12 |
| 6/7/2012 | 15:00 | -25.3 | in | -12 |
| 6/8/2012 | 15:00 | -27.2 | in | -12 |
| 6/9/2012 | 15:00 | -28 | in | -12 |
| 6/10/2012 | 15:00 | -28.9 | in | -12 |
| 6/11/2012 | 15:00 | -29.4 | in | -12 |
| 6/12/2012 | 15:00 | -29.8 | in | -12 |
| 6/13/2012 | 15:00 | -29.8 | in | -12 |
| 6/14/2012 | 15:00 | -29.9 | in | -12 |
| 6/15/2012 | 15:00 | -29.9 | in | -12 |
| 6/16/2012 | 15:00 | -29.9 | in | -12 |
| 6/17/2012 | 15:00 | -29.9 | in | -12 |
| 6/18/2012 | 15:00 | -29.8 | in | -12 |
| 6/19/2012 | 15:00 | -29.9 | in | -12 |
| 6/20/2012 | 15:00 | -29.9 | in | -12 |
| 6/21/2012 | 15:00 | -29.9 | in | -12 |
| 6/22/2012 | 15:00 | -21.4 | in | -12 |
| 6/23/2012 | 15:00 | -25 | in | -12 |
| 6/24/2012 | 15:00 | -30.1 | in | -12 |
| 6/25/2012 | 15:00 | -30 | in | -12 |
| 6/26/2012 | 15:00 | -30 | in | -12 |
| 6/27/2012 | 15:00 | -30 | in | -12 |
| 6/28/2012 | 15:00 | -30 | in | -12 |

Growing Season

Depth < 12" in Grow Seas

| Gauge 138BDBD7 -- West (upper) gauge near fence | | | | |
|---|---|---|---|---|
| Date | Time | Depth | Unit | 12" to Grnd Surf |
| 6/29/2012 | 15:00 | -30 | in | -12 |
| 6/30/2012 | 15:00 | -30 | in | -12 |
| 7/1/2012 | 15:00 | -30 | in | -12 |
| 7/2/2012 | 15:00 | -29.9 | in | -12 |
| 7/3/2012 | 15:00 | -29.9 | in | -12 |
| 7/4/2012 | 15:00 | -29.9 | in | -12 |
| 7/5/2012 | 15:00 | -29.8 | in | -12 |
| 7/6/2012 | 15:00 | -29.8 | in | -12 |
| 7/7/2012 | 15:00 | -29.8 | in | -12 |
| 7/8/2012 | 15:00 | -29.7 | in | -12 |
| 7/9/2012 | 15:00 | -29.4 | in | -12 |
| 7/10/2012 | 15:00 | -30 | in | -12 |
| 7/11/2012 | 15:00 | -23.6 | in | -12 |
| 7/12/2012 | 15:00 | -29.2 | in | -12 |
| 7/13/2012 | 15:00 | -29.8 | in | -12 |
| 7/14/2012 | 15:00 | -29.9 | in | -12 |
| 7/15/2012 | 15:00 | -29.9 | in | -12 |
| 7/16/2012 | 15:00 | -30 | in | -12 |
| 7/17/2012 | 15:00 | -30 | in | -12 |
| 7/18/2012 | 15:00 | -30 | in | -12 |
| 7/19/2012 | 15:00 | -29.7 | in | -12 |
| 7/20/2012 | 15:00 | -23.8 | in | -12 |
| 7/21/2012 | 15:00 | -29.9 | in | -12 |
| 7/22/2012 | 15:00 | -29.9 | in | -12 |
| 7/23/2012 | 15:00 | -29.9 | in | -12 |
| 7/24/2012 | 15:00 | -29.6 | in | -12 |
| 7/25/2012 | 15:00 | -29.8 | in | -12 |
| 7/26/2012 | 15:00 | -29.8 | in | -12 |
| 7/27/2012 | 15:00 | -29.8 | in | -12 |
| 7/28/2012 | 15:00 | -29.8 | in | -12 |
| 7/29/2012 | 15:00 | -29.8 | in | -12 |
| 7/30/2012 | 15:00 | -29.8 | in | -12 |
| 7/31/2012 | 15:00 | -29.8 | in | -12 |
| 8/1/2012 | 15:00 | -29.8 | in | -12 |
| 8/2/2012 | 15:00 | -29.9 | in | -12 |
| 8/3/2012 | 15:00 | -29.9 | in | -12 |
| 8/4/2012 | 15:00 | -29.8 | in | -12 |
| 8/5/2012 | 15:00 | -29.7 | in | -12 |
| 8/6/2012 | 15:00 | -29.8 | in | -12 |
| 8/7/2012 | 15:00 | -29.9 | in | -12 |
| 8/8/2012 | 15:00 | -29.8 | in | -12 |
| 8/9/2012 | 15:00 | -29.8 | in | -12 |
| 8/10/2012 | 15:00 | -29.8 | in | -12 |
| 8/11/2012 | 15:00 | -29.9 | in | -12 |
| 8/12/2012 | 15:00 | -30 | in | -12 |

Growing Season

Depth < 12" in Grow Seas

| Gauge 138BDBD7 -- West (upper) gauge near fence | | | | |
|---|---|---|---|---|
| Date | Time | Depth | Unit | 12" to Grnd Surf |
| 8/13/2012 | 15:00 | -30 | in | -12 |
| 8/14/2012 | 15:00 | -30 | in | -12 |
| 8/15/2012 | 15:00 | -30 | in | -12 |
| 8/16/2012 | 15:00 | -30 | in | -12 |
| 8/17/2012 | 15:00 | -30 | in | -12 |
| 8/18/2012 | 15:00 | -30 | in | -12 |
| 8/19/2012 | 15:00 | -29.8 | in | -12 |
| 8/20/2012 | 15:00 | -29.9 | in | -12 |
| 8/21/2012 | 15:00 | -30 | in | -12 |
| 8/22/2012 | 15:00 | -29.9 | in | -12 |
| 8/23/2012 | 15:00 | -30 | in | -12 |
| 8/24/2012 | 15:00 | -30 | in | -12 |
| 8/25/2012 | 15:00 | -30 | in | -12 |
| 8/26/2012 | 15:00 | -30 | in | -12 |
| 8/27/2012 | 15:00 | -30 | in | -12 |
| 8/28/2012 | 15:00 | -30 | in | -12 |
| 8/29/2012 | 15:00 | -29.9 | in | -12 |
| 8/30/2012 | 15:00 | -29.9 | in | -12 |
| 8/31/2012 | 15:00 | -29.9 | in | -12 |
| 9/1/2012 | 15:00 | -29.9 | in | -12 |
| 9/2/2012 | 15:00 | -29.8 | in | -12 |
| 9/3/2012 | 15:00 | -29.8 | in | -12 |
| 9/4/2012 | 15:00 | -29.9 | in | -12 |
| 9/5/2012 | 15:00 | -29.8 | in | -12 |
| 9/6/2012 | 15:00 | -29.8 | in | -12 |
| 9/7/2012 | 15:00 | -29.8 | in | -12 |
| 9/8/2012 | 15:00 | -29.8 | in | -12 |
| 9/9/2012 | 15:00 | -29.8 | in | -12 |
| 9/10/2012 | 15:00 | -29.8 | in | -12 |
| 9/11/2012 | 15:00 | -29.9 | in | -12 |
| 9/12/2012 | 15:00 | -30 | in | -12 |
| 9/13/2012 | 15:00 | -30 | in | -12 |
| 9/14/2012 | 15:00 | -30 | in | -12 |
| 9/15/2012 | 15:00 | -30 | in | -12 |
| 9/16/2012 | 15:00 | -29.8 | in | -12 |
| 9/17/2012 | 15:00 | -29.9 | in | -12 |
| 9/18/2012 | 15:00 | -30 | in | -12 |
| 9/19/2012 | 15:00 | -30.1 | | -12 |
| 9/20/2012 | 15:00 | -30.1 | | -12 |
| 9/21/2012 | 15:00 | -30.1 | | -12 |
| 9/22/2012 | 15:00 | -30.1 | | -12 |
| 9/23/2012 | 15:00 | -30.1 | | -12 |
| 9/24/2012 | 15:00 | -30.1 | | -12 |
| 9/25/2012 | 15:00 | -30.1 | | -12 |
| 9/26/2012 | 15:00 | -30.1 | | -12 |



Growing Season



Depth < 12" in Grow Seas

| Gauge 138BDBD7 -- West (upper) gauge near fence | | | | |
|---|---|---|---|---|
| Date | Time | Depth | Unit | 12" to Grnd Surf |
| 9/27/2012 | 15:00 | -30.1 | | -12 |
| 9/28/2012 | 15:00 | -30 | | -12 |
| 9/29/2012 | 15:00 | -30.1 | | -12 |
| 9/30/2012 | 15:00 | -30 | | -12 |
| 10/1/2012 | 15:00 | -30 | | -12 |
| 10/2/2012 | 15:00 | -30 | | -12 |
| 10/3/2012 | 15:00 | -30 | | -12 |
| 10/4/2012 | 15:00 | -30 | | -12 |
| 10/5/2012 | 15:00 | -30.1 | | -12 |
| 10/6/2012 | 15:00 | -30.1 | | -12 |
| 10/7/2012 | 15:00 | -30.2 | | -12 |
| 10/8/2012 | 15:00 | -30.2 | | -12 |
| 10/9/2012 | 15:00 | -30.2 | | -12 |
| 10/10/2012 | 15:00 | -30.2 | | -12 |
| 10/11/2012 | 15:00 | -30.3 | | -12 |
| 10/12/2012 | 15:00 | -30.3 | | -12 |
| 10/13/2012 | 15:00 | -30.3 | | -12 |
| 10/14/2012 | 15:00 | -30.3 | | -12 |
| 10/15/2012 | 15:00 | -30.3 | | -12 |
| 10/16/2012 | 15:00 | -30.3 | | -12 |
| 10/17/2012 | 15:00 | -30.4 | | -12 |
| 10/18/2012 | 15:00 | -30.1 | | -12 |
| 10/19/2012 | 15:00 | -30.3 | | -12 |
| 10/20/2012 | 15:00 | -30.3 | | -12 |
| 10/21/2012 | 15:00 | -30.4 | | -12 |
| 10/22/2012 | 15:00 | -30.4 | | -12 |
| 10/23/2012 | 15:00 | -30.4 | | -12 |
| 10/24/2012 | 15:00 | -30.4 | | -12 |
| 10/25/2012 | 15:00 | -30.4 | | -12 |
| 10/27/2012 | | | | -12 |
| 10/28/2012 | | | | -12 |
| 10/29/2012 | | | | -12 |
| 10/30/2012 | | | | -12 |
| 10/31/2012 | | | | -12 |
| 11/1/2012 | | | | -12 |
| 11/2/2012 | | | | -12 |
| 11/3/2012 | | | | -12 |
| 11/4/2012 | | | | -12 |
| 11/5/2012 | | | | -12 |
| 11/6/2012 | | | | -12 |
| 11/7/2012 | | | | -12 |
| 11/8/2012 | | | | -12 |
| 11/9/2012 | | | | -12 |
| 11/10/2012 | | | | -12 |

Growing Season

Depth < 12" in Grow Seas

| Rain Gauge: Siler City Airport (SILR) | |
|---|---|
| Date | Inches of Precipitation |
| 1/1/2012 | 0.00 |
| 1/2/2012 | 0.00 |
| 1/3/2012 | 0.00 |
| 1/4/2012 | 0.00 |
| 1/5/2012 | 0.00 |
| 1/6/2012 | 0.00 |
| 1/7/2012 | 0.00 |
| 1/8/2012 | 0.03 |
| 1/9/2012 | 0.10 |
| 1/10/2012 | 0.00 |
| 1/11/2012 | 0.19 |
| 1/12/2012 | 0.02 |
| 1/13/2012 | 0.00 |
| 1/14/2012 | 0.00 |
| 1/15/2012 | 0.00 |
| 1/16/2012 | 0.00 |
| 1/17/2012 | 0.09 |
| 1/18/2012 | 0.07 |
| 1/19/2012 | 0.00 |
| 1/20/2012 | 0.19 |
| 1/21/2012 | 0.35 |
| 1/22/2012 | 0.00 |
| 1/23/2012 | 0.06 |
| 1/24/2012 | 0.00 |
| 1/25/2012 | 0.00 |
| 1/26/2012 | 0.00 |
| 1/27/2012 | 0.50 |
| 1/28/2012 | 0.00 |
| 1/29/2012 | 0.00 |
| 1/30/2012 | 0.00 |
| 1/31/2012 | 0.00 |
| 2/1/2012 | 0.00 |
| 2/2/2012 | 0.01 |
| 2/3/2012 | 0.00 |
| 2/4/2012 | 0.29 |
| 2/5/2012 | 0.23 |
| 2/6/2012 | 0.00 |
| 2/7/2012 | 0.00 |
| 2/8/2012 | 0.00 |
| 2/9/2012 | 0.00 |
| 2/10/2012 | 0.00 |
| 2/11/2012 | 0.00 |
| 2/12/2012 | 0.00 |
| 2/13/2012 | 0.00 |
| 2/14/2012 | 0.00 |

| Rain Gauge: Siler City Airport (SILR) | |
|---|---|
| Date | Inches of Precipitation |
| 2/15/2012 | 0.00 |
| 2/16/2012 | 0.26 |
| 2/17/2012 | 0.00 |
| 2/18/2012 | 0.00 |
| 2/19/2012 | 0.50 |
| 2/20/2012 | 0.20 |
| 2/21/2012 | 0.00 |
| 2/22/2012 | 0.00 |
| 2/23/2012 | 0.23 |
| 2/24/2012 | 0.33 |
| 2/25/2012 | 0.00 |
| 2/26/2012 | 0.00 |
| 2/27/2012 | 0.13 |
| 2/28/2012 | 0.00 |
| 2/29/2012 | 0.00 |
| 3/1/2012 | 0.00 |
| 3/2/2012 | 0.01 |
| 3/3/2012 | 0.87 |
| 3/4/2012 | 0.00 |
| 3/5/2012 | 0.00 |
| 3/6/2012 | 0.00 |
| 3/7/2012 | 0.00 |
| 3/8/2012 | 0.00 |
| 3/9/2012 | 0.22 |
| 3/10/2012 | 0.00 |
| 3/11/2012 | 0.00 |
| 3/12/2012 | 0.00 |
| 3/13/2012 | 0.00 |
| 3/14/2012 | 0.00 |
| 3/15/2012 | 0.00 |
| 3/16/2012 | 0.12 |
| 3/17/2012 | 0.11 |
| 3/18/2012 | 0.37 |
| 3/19/2012 | 0.00 |
| 3/20/2012 | 0.38 |
| 3/21/2012 | 0.02 |
| 3/22/2012 | 0.00 |
| 3/23/2012 | 0.27 |
| 3/24/2012 | 0.46 |
| 3/25/2012 | 0.10 |
| 3/26/2012 | 0.04 |
| 3/27/2012 | 0.00 |
| 3/28/2012 | 0.00 |
| 3/29/2012 | 0.00 |
| 3/30/2012 | 0.00 |

| Rain Gauge: Siler City Airport (SILR) | |
|---|---|
| Date | Inches of Precipitation |
| 3/31/2012 | 0.13 |
| 4/1/2012 | 0.00 |
| 4/2/2012 | 0.00 |
| 4/3/2012 | 0.09 |
| 4/4/2012 | 0.37 |
| 4/5/2012 | 0.20 |
| 4/6/2012 | 0.03 |
| 4/7/2012 | 0.00 |
| 4/8/2012 | 0.00 |
| 4/9/2012 | 0.00 |
| 4/10/2012 | 0.00 |
| 4/11/2012 | 0.00 |
| 4/12/2012 | 0.00 |
| 4/13/2012 | 0.00 |
| 4/14/2012 | 0.00 |
| 4/15/2012 | 0.00 |
| 4/16/2012 | 0.00 |
| 4/17/2012 | 0.01 |
| 4/18/2012 | 0.08 |
| 4/19/2012 | 0.00 |
| 4/20/2012 | 0.00 |
| 4/21/2012 | 0.25 |
| 4/22/2012 | 0.77 |
| 4/23/2012 | 0.02 |
| 4/24/2012 | 0.00 |
| 4/25/2012 | 0.07 |
| 4/26/2012 | 0.08 |
| 4/27/2012 | 0.00 |
| 4/28/2012 | 0.00 |
| 4/29/2012 | 0.00 |
| 4/30/2012 | 0.00 |
| 5/1/2012 | 0.00 |
| 5/2/2012 | 0.00 |
| 5/3/2012 | 0.00 |
| 5/4/2012 | 0.00 |
| 5/5/2012 | 0.35 |
| 5/6/2012 | 0.00 |
| 5/7/2012 | 0.03 |
| 5/8/2012 | 0.01 |
| 5/9/2012 | 0.33 |
| 5/10/2012 | 0.01 |
| 5/11/2012 | 0.00 |
| 5/12/2012 | 0.00 |
| 5/13/2012 | 0.14 |
| 5/14/2012 | 0.94 |

| Rain Gauge: Siler City Airport (SILR) | |
|---|---|
| Date | Inches of Precipitation |
| 5/15/2012 | 0.82 |
| 5/16/2012 | 0.22 |
| 5/17/2012 | 0.05 |
| 5/18/2012 | 0.00 |
| 5/19/2012 | 0.00 |
| 5/20/2012 | 0.00 |
| 5/21/2012 | 0.02 |
| 5/22/2012 | 0.00 |
| 5/23/2012 | 0.21 |
| 5/24/2012 | 0.00 |
| 5/25/2012 | 0.00 |
| 5/26/2012 | 0.00 |
| 5/27/2012 | 0.00 |
| 5/28/2012 | 0.00 |
| 5/29/2012 | 0.89 |
| 5/30/2012 | 0.06 |
| 5/31/2012 | 0.00 |
| 6/1/2012 | 0.43 |
| 6/2/2012 | 0.00 |
| 6/3/2012 | 0.00 |
| 6/4/2012 | 0.00 |
| 6/5/2012 | 0.00 |
| 6/6/2012 | 0.72 |
| 6/7/2012 | 0.00 |
| 6/8/2012 | 0.00 |
| 6/9/2012 | 0.00 |
| 6/10/2012 | 0.00 |
| 6/11/2012 | 0.14 |
| 6/12/2012 | 0.01 |
| 6/13/2012 | 0.00 |
| 6/14/2012 | 0.00 |
| 6/15/2012 | 0.00 |
| 6/16/2012 | 0.00 |
| 6/17/2012 | 0.00 |
| 6/18/2012 | 0.00 |
| 6/19/2012 | 0.00 |
| 6/20/2012 | 0.00 |
| 6/21/2012 | 0.00 |
| 6/22/2012 | 0.04 |
| 6/23/2012 | 0.01 |
| 6/24/2012 | 0.00 |
| 6/25/2012 | 0.12 |
| 6/26/2012 | 0.00 |
| 6/27/2012 | 0.00 |
| 6/28/2012 | 0.00 |

| Rain Gauge: Siler City Airport (SILR) | |
|---|---|
| Date | Inches of Precipitation |
| 6/29/2012 | 0.00 |
| 6/30/2012 | 0.00 |
| 7/1/2012 | 0.00 |
| 7/2/2012 | 0.00 |
| 7/3/2012 | 0.00 |
| 7/4/2012 | 0.00 |
| 7/5/2012 | 0.00 |
| 7/6/2012 | 0.08 |
| 7/7/2012 | 0.00 |
| 7/8/2012 | 0.00 |
| 7/9/2012 | 1.29 |
| 7/10/2012 | 0.02 |
| 7/11/2012 | 0.89 |
| 7/12/2012 | 0.00 |
| 7/13/2012 | 0.14 |
| 7/14/2012 | 0.00 |
| 7/15/2012 | 0.00 |
| 7/16/2012 | 0.00 |
| 7/17/2012 | 0.00 |
| 7/18/2012 | 0.29 |
| 7/19/2012 | 0.01 |
| 7/20/2012 | 0.58 |
| 7/21/2012 | 0.07 |
| 7/22/2012 | 0.00 |
| 7/23/2012 | 0.00 |
| 7/24/2012 | 0.58 |
| 7/25/2012 | 0.00 |
| 7/26/2012 | 0.00 |
| 7/27/2012 | 0.51 |
| 7/28/2012 | 0.04 |
| 7/29/2012 | 0.00 |
| 7/30/2012 | 0.00 |
| 7/31/2012 | 0.00 |
| 8/1/2012 | 0.00 |
| 8/2/2012 | 0.00 |
| 8/3/2012 | 0.00 |
| 8/4/2012 | 0.00 |
| 8/5/2012 | 0.01 |
| 8/6/2012 | 0.37 |
| 8/7/2012 | 0.30 |
| 8/8/2012 | 0.18 |
| 8/9/2012 | 0.13 |
| 8/10/2012 | 0.13 |
| 8/11/2012 | 0.10 |
| 8/12/2012 | 0.06 |

| Rain Gauge: Siler City Airport (SILR) | |
|---|---|
| Date | Inches of Precipitation |
| 8/13/2012 | 0.03 |
| 8/14/2012 | 0.03 |
| 8/15/2012 | 0.02 |
| 8/16/2012 | 0.01 |
| 8/17/2012 | 0.09 |
| 8/18/2012 | 0.01 |
| 8/19/2012 | 0.53 |
| 8/20/2012 | 0.10 |
| 8/21/2012 | 0.04 |
| 8/22/2012 | 0.01 |
| 8/23/2012 | 0.01 |
| 8/24/2012 | 0.00 |
| 8/25/2012 | 0.00 |
| 8/26/2012 | 0.00 |
| 8/27/2012 | 0.00 |
| 8/28/2012 | 0.00 |
| 8/29/2012 | 0.01 |
| 8/30/2012 | 0.00 |
| 8/31/2012 | 0.00 |
| 9/1/2012 | 0.06 |
| 9/2/2012 | 0.05 |
| 9/3/2012 | 0.03 |
| 9/4/2012 | 0.02 |
| 9/5/2012 | 0.00 |
| 9/6/2012 | 0.03 |
| 9/7/2012 | 0.01 |
| 9/8/2012 | 0.92 |
| 9/9/2012 | 0.05 |
| 9/10/2012 | 0.00 |
| 9/11/2012 | 0.00 |
| 9/12/2012 | 0.00 |
| 9/13/2012 | 0.00 |
| 9/14/2012 | 0.00 |
| 9/15/2012 | 0.00 |
| 9/16/2012 | 0.08 |
| 9/17/2012 | 0.10 |
| 9/18/2012 | 0.78 |
| 9/19/2012 | 0.12 |
| 9/20/2012 | 0.04 |
| 9/21/2012 | 0.03 |
| 9/22/2012 | 0.02 |
| 9/23/2012 | 0.02 |
| 9/24/2012 | 0.01 |
| 9/25/2012 | 0.00 |
| 9/26/2012 | 0.01 |

| Rain Gauge: Siler City Airport (SILR) | |
|---|---|
| Date | Inches of Precipitation |
| 9/27/2012 | 0.00 |
| 9/28/2012 | 0.87 |
| 9/29/2012 | 0.31 |
| 9/30/2012 | 0.21 |
| 10/1/2012 | 0.08 |
| 10/2/2012 | 0.06 |
| 10/3/2012 | 0.05 |
| 10/4/2012 | 0.03 |
| 10/5/2012 | 0.02 |
| 10/6/2012 | 0.02 |
| 10/7/2012 | 0.02 |
| 10/8/2012 | 0.02 |
| 10/9/2012 | 0.02 |
| 10/10/2012 | 0.03 |
| 10/11/2012 | 0.01 |
| 10/12/2012 | 0.02 |
| 10/13/2012 | 0.01 |
| 10/14/2012 | 0.01 |
| 10/15/2012 | 0.02 |
| 10/16/2012 | 0.02 |
| 10/17/2012 | 0.02 |
| 10/18/2012 | 0.02 |
| 10/19/2012 | 0.01 |
| 10/20/2012 | 0.02 |
| 10/21/2012 | 0.00 |
| 10/22/2012 | 0.01 |
| 10/23/2012 | 0.00 |
| 10/24/2012 | 0.00 |
| 10/25/2012 | 0.00 |
| 10/26/2012 | 0.00 |
| 10/27/2012 | 0.00 |
| 10/28/2012 | 0.00 |
| 10/29/2012 | 0.02 |
| 10/30/2012 | 0.00 |
| 10/31/2012 | 0.00 |
| 11/1/2012 | 0.00 |
| 11/2/2012 | 0.00 |
| 11/3/2012 | 0.00 |
| 11/4/2012 | 0.00 |
| 11/5/2012 | 0.00 |
| 11/6/2012 | 0.00 |
| 11/7/2012 | 0.00 |
| 11/8/2012 | 0.00 |
| 11/9/2012 | 0.00 |
| 11/10/2012 | 0.00 |

| Rain Gauge: Siler City Airport (SILR) | |
|---|---|
| Date | Inches of Precipitation |
| 11/11/2012 | 0.00 |
| 11/12/2012 | 0.00 |
| 11/13/2012 | 0.12 |
| 11/14/2012 | 0.00 |
| 11/15/2012 | 0.10 |
| 11/16/2012 | 0.00 |
| 11/17/2012 | 0.00 |
| 11/18/2012 | 0.00 |
| 11/19/2012 | 0.00 |
| 11/20/2012 | 0.00 |
| 11/21/2012 | 0.00 |
| 11/22/2012 | 0.00 |
| 11/23/2012 | 0.00 |
| 11/24/2012 | 0.00 |
| 11/25/2012 | 0.00 |
| 11/26/2012 | 0.00 |
| 11/27/2012 | 0.07 |
| 11/28/2012 | 0.00 |
| 11/29/2012 | 0.00 |
| 11/30/2012 | 0.00 |
| 12/1/2012 | |
| 12/2/2012 | |
| 12/3/2012 | |
| 12/4/2012 | |
| 12/5/2012 | |
| 12/6/2012 | |
| 12/7/2012 | |
| 12/8/2012 | |
| 12/9/2012 | |
| 12/10/2012 | |
| 12/11/2012 | |
| 12/12/2012 | |
| 12/13/2012 | |
| 12/14/2012 | |
| 12/15/2012 | |