Fletcher Stream and Wetland Mitigation Site

Annual Monitoring Report

Monitoring Year 1 of 7

Final

Fletcher Stream and Wetland Mitigation Site
NCDMS Contract No. 006997
NCDMS Project No. 100004
DWR# 16-1076
USACE Action ID: SAW-2016-02205
Henderson County, North Carolina
Data Collected: February 1st, 2020 – October 20th, 2020.
Date Submitted: February 2021

Submitted to:
NCDEQ-Division of Mitigation Services
1652 Mail Service Center Raleigh N C 27699-1652

Mitigation Project Name	**Fletcher Stream and Wetland Site**	**USACE Action ID**	**2016-02205**
DMS ID	**100004**	**DWR Permit**	**2016-1076**
River Basin	**French Broad**	**Date Project Instituted**	**10/4/2016**
Cataloging Unit	**06010105**	**Date Prepared**	**4/28/2020**
County	**Henderson**	**Stream/Wet. Service Area**	**French Broad 06010105**

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Date: 2020.06.17 10:00:28 -04'00'

Signature of Official Approving Credit Release

1 - For NCDMS, no credits are released during the first milestone

2 - For NCDMS projects, the initial credit release milestone occurs when the as-built report (baseline monitoring report) has been approved by the NCIRT and posted to the NCDMS Portal, provided the following criteria have been met:

1) Approved of Final Mitigation Plan
2) Recordation of the preservation mechanism, as well as a title opinion acceptable to the USACE covering the property.
3) Completion of all physical and biological improvements to the mitigation site pursuant to the mitigation plan.
4) Receipt of necessary DA permit authorization or written DA approval for projects where DA permit issuance is not required.

3 - A 10% reserve of credits is to be held back until the bankfull event performance standard has been met.

Credit Release Milestone	Cool Stream Credits						
Project Credits	**Scheduled Releases %**	**Proposed Releases %**	**Proposed Released #**	**Not Approved # Releases**	**Approved Credits**	**Anticipated Release Year**	**Actual Release Date**
1 - Site Establishment	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2 - Year 0 / As-Built	30.00%	30.00%	2,175.990	0.000	2,175.990	2020	4/28/2020
3 - Year 1 Monitoring	10.00%					2021	
4 - Year 2 Monitoring	10.00%					2022	
5 - Year 3 Monitoring	10.00%					2023	
6 - Year 4 Monitoring	5.00%					2024	
7 - Year 5 Monitoring	10.00%					2025	
8 - Year 6 Monitoring	5.00%					2026	
9 - Year 7 Monitoring	10.00%					2027	
Stream Bankfull Standard	10.00%						
			Totals		2,175.990		

Total Gross Credits	7,253.300
Total Unrealized Credits to Date	0.000
Total Released Credits to Date	2,175.990
Total Percentage Released	30.00%
Remaining Unreleased Credits	5,077.310

Credit Release Milestone	Cold Stream Credits						
Project Credits	**Scheduled Releases %**	**Proposed Releases %**	**Proposed Released #**	**Not Approved # Releases**	**Approved Credits**	**Anticipated Release Year**	**Actual Release Date**
1 - Site Establishment	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2 - Year 0 / As-Built	30.00%	30.00%	827.400	0.000	827.400	2020	4/28/2020
3 - Year 1 Monitoring	10.00%					2021	
4 - Year 2 Monitoring	10.00%					2022	
5 - Year 3 Monitoring	10.00%					2023	
6 - Year 4 Monitoring	5.00%					2024	
7 - Year 5 Monitoring	10.00%					2025	
8 - Year 6 Monitoring	5.00%					2026	
9 - Year 7 Monitoring	10.00%					2027	
Stream Bankfull Standard	10.00%						
			Totals		827.400		

Total Gross Credits	2,758.000
Total Unrealized Credits to Date	0.000
Total Released Credits to Date	827.400
Total Percentage Released	30.00%
Remaining Unreleased Credits	1,930.600

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County	**Henderson**	**Stream/Wet. Service Area**	**French Broad 06010105**

Credit Release Milestone	**Riparian Credits**						
Project Credits	**Scheduled Releases %**	**Proposed Releases %**	**Proposed Released #**	**Not Approved # Releases**	**Approved Credits**	**Anticipated Release Year**	**Actual Release Date**
1 - Site Establishment	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2 - Year 0 / As-Built	30.00%	30.00%	2.673	0.000	2.673	2020	4/28/2020
3 - Year 1 Monitoring	10.00%					2021	
4 - Year 2 Monitoring	10.00%					2022	
5 - Year 3 Monitoring	15.00%					2023	
6 - Year 4 Monitoring	5.00%					2024	
7 - Year 5 Monitoring	15.00%					2025	
8 - Year 6 Monitoring	5.00%					2026	
9 - Year 7 Monitoring	10.00%					2027	
Stream Bankfull Standard	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			Totals		2.673		

Total Gross Credits	8.910
Total Unrealized Credits to Date	0.000
Total Released Credits to Date	2.673
Total Percentage Released	30.00%
Remaining Unreleased Credits	6.237

Notes

Contingencies (if any)

Project Quantities

Mitigation Type	**Restoration Type**	**Physical Quantity**
Cold Stream	Restoration	2,758.000
Cool Stream	Restoration	6,770.000
Cool Stream	Enhancement II	896.000
Cool Stream	Preservation	1,249.000
Riparian	Restoration	8.910

Debits

							Stream Restoration Credits	**Stream Restoration Equivalent Credits**	**Riparian Restoration**
Beginning Balance (mitigation credits)							**9,886.400**	**124.900**	**8.910**
Released Credits							**2,965.920**	**37.470**	**2.673**
Unrealized Credits							**0.000**	**0.000**	**0.000**
Owning Program	**Req. Id**	**TIP #**	**Project Name**	**USACE Permit #**	**DWR Permit #**	**DCM Permit #**			
NCDOT Stream & Wetland ILF Program	REQ-002570	R-0619E	NC 281 Improvements	2004-30595	2005-0071		297.000		
NCDOT Stream & Wetland ILF Program	REQ-005126	B-4034	Bridge 124 on NC 151	2009-01502-311	2009-0838		439.000		

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Statewide Stream & Wetland ILF Program	REQ-005439		Asheville Airport Expansion Phases 1 and 2	2010-00036	2007-1841		60.013		
NCDOT Stream & Wetland ILF Program	REQ-005733	R-5524C	Roundabout Intersection - SR 3526/SR 1419/SR 1420	2013-00633			102.530		
NCDOT Stream & Wetland ILF Program	REQ-005929	R-2518A	US 19 Improvements	2007-02197-300, 2007-02197-357	2007-1134		91.400		
NCDOT Stream & Wetland ILF Program	REQ-007164	U-3301	NC 63 Improvements	2014-01633	2016-0401		224.899		
NCDOT Stream & Wetland ILF Program	REQ-007990	I-4700A & B	I-26 Improvements - NC 280 to I-40	2013-01883	2018-1645		1,448.091		
NCDOT Stream & Wetland ILF Program	REQ-005733	R-5524C	Roundabout Intersection - SR 3526/SR 1419/SR 1420	2013-00633				37.470	
NCDOT Stream & Wetland ILF Program	REQ-002621	R-2813B	NC 146 Widening	2007-03084-311					0.380
NCDOT Stream & Wetland ILF Program	REQ-005502	R-5207B	SR 1006 Widening	2012-00114					0.030
NCDOT Stream & Wetland ILF Program	REQ-005712	R-5207A	SR 1006 Widening	2013-00411					0.020
NCDOT Stream & Wetland ILF Program	REQ-005767	B-5149	Bridge 38 on SR 1574 over Clear Creek	2013-00665					0.040
NCDOT Stream & Wetland ILF Program	REQ-006907	I-5504	I-26 at NC 191 Interchange	2014-02016	2016-1157				0.020
NCDOT Stream & Wetland ILF Program	REQ-007163	U-3301	NC 63 Improvements	2014-01633	2016-0401				0.070
NCDOT Stream & Wetland ILF Program	REQ-007989	I-4700A & B	I-26 Improvements - NC 280 to I-40	2013-01883	2018-1645				1.560
NCDOT Stream & Wetland ILF Program	REQ-008221	I-4400BB	I-26 Improvements - US 64 to US 25 Business	2013-01883	2018-1645				0.050
NCDOT Stream & Wetland ILF Program	REQ-008224	I-4400C	I-26 Improvements - US 25 Business to NC 280	2013-01883	2018-1645				0.413
NCDOT Stream & Wetland ILF Program	REQ-004665	R-2518A	US 19 Improvements	2007-02197-300, 2007-02197-357	2007-1134				0.090
Total Credits Debited							**2,662.993**	**37.470**	**2.673**
Remaining Available balance (Released credits)							**302.987**	**0.000**	**0.000**
Remaining Credits (Unreleased credits)							**6,920.480**	**87.430**	**6.237**

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February 27, 2021

Harry Tsomides
Project Manager
DENR Division of Mitigation Services
5 Ravencroft Dr, Suite 102
Asheville, NC 28801

RE: Draft MY01 Monitoring Report
Fletcher Stream and Wetland Site, Henderson County
French Broad River CU 06010105
DMS Project ID No. 100004 / DEQ Contract #006997

Mr. Tsomides,

Equinox has completed the review of the Fletcher Stream and Wetland Site Draft MY01 Monitoring Report comments. Following are our responses to the review comments/questions: In Red.

- Table 7b – "Supplimental" is misspelled. Also the name is misleading. This was not a supplemental planting to address failure; it was an initial planting that had an extra year of monitoring due to the project repairs on Weston Creek pushing MY1 out a year. Please explain this more fully in the text section. Recommend putting this Pre-MY1 data table in an appendix to avoid confusion. Table 7b renamed and text added to further clarify the data, background, and timetable of sampling.
- "Table 8 – Random veg plot data" sheet insert – please remove. Random plots were not performed. Removed reference to table 8 from the report. Table numbering conserved to allow for future reporting.
- Appendices/ tables / figures etc – Except for CCPVs, if possible all pages should all be letter sized; 11x17 tables and figures should be formatted to fit the letter size report. Please tri-fold any 11x17 CCPV foldout sheets in the final hard copies. 11x17s reduced to letter where legibility can be maintained.
- Please update the monitoring performance bond as necessary prior to finalizing the task. All Financial Assurances are secured and up to-date.

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DIGITAL SUPPORT FILES

- Please segment the design centerline features so that the segments in the asset table are reflected in the attribute table. If discrepancies exist between these features and the mitigation plan footage column of the asset table, please attempt to address them. Design centerline features segmented to reflect Mitigation Plan footage in Mitigation Assets table.
- The As_Built_TW features have two segments that do not match what is reported in the As-Built column of the asset table, outlined below as feature length vs. asset table length. Please review these and attempt to address the differences.
  - Raccoon Branch 1a: 476 ft vs 489 ft
  - Raccoon Branch 1c: 142 ft vs 153 ft (after segmenting based on wetland exclusion)

  Feature classes included for As-Built Centerline and As-Built Thalweg. As-Built centerline feature (AsBuilt_CL) lengths and assets table revised to match.
- The CVS minidatabase Table 7 export does not support Table 7a in the report. Please review and ensure the data in the minidatabase support the table in the report. Database file revised and re-submitted in the digital deliverables.
- Please submit updated groundwater gauge features to include MW12. The groundwater gauge identified as MW12 is a monitoring well intended for internal use in identifying potential groundwater trespass as opposed to meeting wetland hydrology criteria. The data and graph for MW12 have been removed from the report.

Regards,

Danvey Walsh
Equinox Monitoring Manager

Prepared for:

EW SOLUTIONS

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1.0 PROJECT SUMMARY

1.1. Project Setting and Background

The Fletcher Stream and Wetland Mitigation Site (Fletcher Site) is located in the French Broad River Basin (CU 06010105). The Fletcher Site also lies within the lower portion of the Cane Creek (HUC 060101050703) watershed which is identified as a Targeted Local Watershed (TLW) according to the 2009 French Broad River Basin Restoration Priorities (RBRP) Plan. Project work at the Fletcher Site was completed in March 2019, and included construction, planting, monitoring feature installation, and fence installation. Through the project work, a total of 9,528 linear feet were restored, 896 linear feet were enhanced through Enhancement II activities, 1,249 linear feet were preserved, and 8.91 acres for wetland were re-established. The Fletcher Site generated a total of 10,011.300 SMU's and 8.910 WMU's. Refer to Appendix A, Table 1 for the project components and mitigation credit information and Figure 2 for the Project Asset Map.

Historic land use at the Fletcher Site has consisted primarily of agriculture and livestock grazing. Additional land use practices, including the excavation of drainage ditches, maintenance and removal of riparian vegetation, and the relocating, dredging, and straightening of on-site streams have contributed to unstable channel characteristics, degraded water quality, and degradation of prior wetlands. Previous stream conditions at the site consisted of incised channels with unstable banks and a limited riparian buffer width. Fletcher Creek and Coates Branch flow though active pastures with livestock access to the streams. The floodplain adjacent to Weston Creek contains approximately 8.91 acres of mapped hydric soils that have been farmed for produce. Previous ditching and farming activities eliminated jurisdictional wetlands. The completed project restored ecological function to the existing streams, wetlands, and riparian corridor by returning streams to a proper relationship with the floodplain, excluding cattle from the riparian buffer, eliminating drainage ditches and spoil piles, removing invasive species, and re-vegetating the riparian buffer with native plant species appropriate for the valley and the watershed conditions. Grading activities improved the groundwater hydrology of the onsite wetlands, increased hydrologic access of the floodplain for overbank flows, and provided attenuation of flood flows.

This project is protected by a 34.81 acre conservation easement and is located approximately 1.1 miles southeast of Fletcher, NC in Henderson County at 35.422278° N, -82.486183° W. The Fletcher Site is bounded by agricultural land and is bisected by Jackson Road.

1.2. Project Goals and Objectives

The project goals address stressors identified in the TLW and priority subwatershed, as outlined in the Final Mitigation Plan, and include:

- Provide a network of streams with natural, stable forms that support proper stream functions;
- Improve groundwater hydrology to support recovery of native riparian vegetation;
- Reduce sediment inputs from eroding stream banks to reduce fine sediment loads and percentage of fines in the bed-material load;
- Restore proper sediment transport to support channel stability and bedform diversity;
- Improve substrate quality to facilitate hyporheic flow and support aquatic communities;
- Improve quantity, quality, and diversity of habitats to support healthy aquatic communities;
- Reduce pollutant inputs to the project streams (fecal coliform, nitrogen, phosphorus) to restore a balance to proper nutrient cycles;
- Improve riparian vegetation community to provide temperature regulation of the stream, provide a future source of organic inputs, and aid in long-term channel bank stability;

- Restore areas of former riparian wetlands so that the hydrology and soils will support wetland vegetative communities and wildlife;
- Improve landscape connectivity that allows space for biotic and abiotic process and provides a source and sink for natural populations; and,
- Prevent the site from future impacts of development and agricultural issues.

The following objectives are proposed for accomplishing the above listed goals as outlined in the Final Mitigation Plan:

- Construct stream channels that will maintain proper dimension, pattern, and profile and meet jurisdictional status;
- Construct streams with proper bankfull to floodplain relationship;
- Construct streams that provide naturally stable dimensions and stabilize constructed banks with appropriate bioengineering;
- Construct streams that maintain an appropriate sediment transport balance with the sediment that is supplied by the watershed so that the overall stream profile neither aggrades nor degrades over time;
- Create and improve stream bedform diversity by constructing pools of varied depths and riffles of varied slopes;
- Construct stable riffles that provide an improved diversity of bed material clast and a reduction in fines relative to existing conditions;
- Construct in-stream habitat features from native material to provide diversity of habitat;
- Prevent cattle from access to the streams and riparian areas by installing exclusion fencing;
- Install BMP's in concentrated runoff areas that drain agricultural fields;
- Provide a buffer from agricultural activates and row crops;
- Plant native climax tree species and understory species in the riparian zone;
- Reconstruct stream channels that are properly connected to the riparian wetlands;
- Re-grade topography to eliminate ditches and drainage features;
- Plant native wetland tree and shrub species; and,
- Establish a conservation easement that provides a minimum buffer from future activities in the adjacent watershed.

1.3. Project Performance Standards

The stream restoration performance standards for the project will follow accepted and approved criteria based on the Final Mitigation Plan for the Fletcher Mitigation Site (2018). Performance criteria will be evaluated throughout the monitoring period as defined in Table 4 of the Fletcher Adaptive Management Summary Packet. The table below provides a list of the performance standards associated with each project objective along with a description of the monitoring approach.

Fletcher Mitigation Site Project Performance Standards		
Objective	Performance Standard	Monitoring Approach
Construct stream channels that will maintain proper dimension, pattern, and profile and that meet jurisdictional status.	•Riffle section W/D ratios should remain within the range of the appropriate stream type. •BHR should not exceed 1.2. BHR should not change more than 10% in any given monitoring interval. Changes that do occur should indicate a trend toward stability. • Entrenchment Ratios should be ≥ 2.2 for C/E channels and ≥ 1.4 for B channels. • Document continuous surface flow in tributaries for at least 30 consectutive days each year.	•Survey of select cross sections and visual assessment. •Continuous stage recorders for base flow on tributaries.
Construct streams with proper bankfull to floodplain relationship	Four bankfull events or greater, in separate years, will be documented during the monitoring period	Crest gauges, continuous stage recorders, and debris lines.
Construct streams that provide naturally stable dimensions and stabilize constructed banks with appropriate bioengineering	Channel banks should generally remain stable. Where bank migration does occur it should not exceed 20% of the bankfull width for the duration of the monitoring.	Visual assessment and bank pin monitoring as necessary.
Construct streams that maintain an appropriate sediment transport balance with the sediment that is supplied by the watershed so that the overall stream profile neither aggrades nor degrades over time	Profile adjustments should not indicate significant aggradation or degradation. BHR requirements as stated above.	Resurvey of longitudinal profile if visual assessment indicates potential instability.
Create and improve stream bedform diversity by constructing pools of varied depths and riffles of varied slopes	Profile should maintain a diversity of depths expressed in riffle/pool forms.	Visual assessment
Construct stable riffles that provide an improved diversity of bed material clast and a reduction in fines relative to existing conditions	Substrate material should progress towards or maintain coarser material in riffles and runs with finer material present in pools and glides.	Pebble count measurements at surveyed cross sections
Construct in-stream habitat features from native material to provide a diversity of habitats	In-stream habitat structures should remain intact and functional.	Visual assessment
Prevent cattle from access to the streams and riparian areas by installing exclusion fencing.	Exclusion fencing should remain intact and effective at preventing livestock access.	Visual assessment
Install BMP's in concentrated runoff areas that drain agricultural fields	None. No maintainance will be performed on BMP's	Visual assessment
Provide a buffer from agricultural activities and row crops	Record conservation easement prior to implementation.	None
Plant native climax tree species and understory species in the riparian zone	Minimum of 320 stems/ac present at MY-3. Minimum of 260 stems/ac present at MY-5. Minimum of 210 stems/ac present at MY-7.	Vegetation plots
Reconstruct stream channels that are properly connected to the riparian wetlands	Groundwater elevation within 12 inches of the ground surface for 12% of the growing season.	Groundwater monitoring gauges
Re-grade topography to eliminate ditches and drainage features	Groundwater elevation within 12 inches of the ground surface for 12% of the growing season.	Groundwater monitoring gauges
Plant native wetland tree and shrub species.	Minimum of 320 stems/ac present at MY-3. Minimum of 260 stems/ac present at MY-5. Minimum of 210 stems/ac present at MY-7.	Vegetation plots
Establish a conservation easement that provides a minimum buffer from future activities in the adjacent watershed.	Record conservation easement prior to implementation.	None

1.4. Mitigation Components

The Fletcher Site generated 10,011.3 SMUs and 8.91 WMUs. Refer to Table 1 for project components and mitigation credit information for the Fletcher Site and Table 2 for the project component and the CCPV for a visual description of the project assets. These credits are based on the Approved Fletcher Site Mitigation Plan.

1.5. Project Performance

Monitoring Year 1 (MY1) data was collected from February to October 2020. Monitoring activities included visual assessment of all reaches and the surrounding easement, collection of images at 33

permanent photo stations, inventory of 26 permanent vegetation monitoring plots, surveying of 28 cross-sections, and conducting 14 pebble counts.

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 Restoration Plan) documents available on the NCDMS website (http://portal.NCDEQ.org/web/eep). All raw data supporting the tables and figures in the appendices is available from DMS upon request.

1.5.1. Vegetation

Visual assessment of vegetation outside of the monitoring plots (Appendix B – Table 6) indicates that the herbaceous vegetation is becoming well established throughout the southern portion of the project. Some areas within the Weston Creek reach remain sparse following the repairs conducted in 2019 and early 2020. Additionally, limited portions of Fletcher Creek proper have some areas of weak herbaceous vegetation establishment. This is to be expected in the first few years following construction and will be monitored in future site visits.

Monitoring of the permanent vegetation plots (n = 26; VP) was completed in October 2020. Summary tables and photographs associated with MY1 vegetation monitoring are located in Appendix B and Appendix C. MY1 monitoring data indicates that all but vegetation plots #7 and #25 are on track to meet the MY3 interim success criteria of 320 planted stems per acre. Planted stem densities among plots ranged from 243 to 809 planted stems per acre with an annual mean of 549 planted stems per acre across all plots. A total of 29 species of stems were documented within the plots. When volunteer stems are included, the mean annual total stems per acre rises to 1128 and ranged between 243 and 4816 stems per acre, Table 7a, Appendix C. Results from the vegetation plots surveyed during Pre-MY1(2019) adaptive management period can be found in Table 7b, Appendix C. This data depicts plot data collected from 19 of the 26 plots during the 2019 monitoring effort. Planted stem densities among plots ranged from 405 to 850 planted stems per acre with an annual mean of 662 planted stems per acre across the subset of plots. A total of 19 species of planted stems were documented within the plots.

Invasive species occur in low abundance throughout the site. A limited number of dense infestations were documented and treated in MY1 (n=6). The primary species documented at the Fletcher Site include Privet spp. (*Ligustrum sinense*) and Multiflora Rose (*Rosa multiflora*). The largest area of invasive vegetation occurs along Raccoon Branch Reach 1B/1C, Coates Branch Reach 1A and a small portion of Coates Reach 1B. Details on invasive species density and area can be found in Table 6 and the CCPV, Appendix B.

1.5.2. Stream Geomorphology

Visual assessment of the stream channel was performed to document signs of beaver damage, structural instability, such as eroding banks, structural instability, or excessive sedimentation. One small area of bank scour was noted on Fletcher Creek Reach 2B at the top of the reach near STA 142+25 (Table 5, Figure 2 CCPV). Here the right descending bank (RDB) has scoured in a tight bend. This area was re-seeded, matted, and additional live stakes were installed to address the instability. This area and the remainder of the project will continue to be monitored in future site visits for further signs of structural instability.

Two beaver dams were documented on Weston Creek Reach 1B during MY1. These beaver dams were located at Stations 420+75 and 424+50. USDA APHIS was contracted to manage the beaver within the site. Beaver dams were removed in early July 2020. The site will continue to be monitored for signs of beaver activity.

Geomorphic data for MY1 was collected during October 2020. Summary tables and cross-section data plots related to stream morphology are located in Appendix D. Cross-sectional dimensions remained relatively stable between baseline conditions and MY1 monitoring efforts. The most substantial changes took place at cross-section 9. Cross-section 9 has shown some aggradation in the Pre-MY1 survey. This had cleared by the MY1 monitoring period, reverting to near as-built condition (Appendix D, cross-section graphics and Table 11a). Riffle dimensions for each reach also remained relatively similar between baseline conditions and MY1 monitoring (Appendix D, Table 11b).

Substrate monitoring was performed during adaptive management on the Weston Creek Reach in the 2019 Pre-MY1 effort and again during MY1 in the fall of 2020. Fletcher Creek Reaches 1B and 1C both showed no change to a slight coarsening of substrate between Baseline and MY1, falling between the medium and very coarse gravel categories. Fletcher Creek Reach 2A remained unchanged with D_{50} falling in the medium to coarse gravel categories. The greatest increase in D_{50} values was observed at Fletcher Creek Reach 2B where substrate fell within the coarse to very coarse gravels. Pebble count D_{50} fell into the Silt/Clay range for Weston Creek Reaches 1A and 1B. Similarly, Raccoon Branch Reach 1D and both Coates Branch Reach 1B and 1C fell into the same category, Silt/Clay. The channel substrate will be monitored in future years for shifts in particle size distributions.

1.5.3.Stream Hydrology

Since project completion in late 2019, a total of five bankfull events have been documented at three of the four streams within the Fletcher Creek Site. Continuous stage recorder data indicate events occurring in April 2019, February 2020, April 2020 and two events in August of 2020 (Table 10, Appendix E).

2.0 METHODS

The visual assessment of the project was performed at the beginning and end of each monitoring year. Permanent photo station photos were taken during the initial visual assessment when leaf-off conditions exist. Additional photos of vegetation or stream problem areas were taken as needed.

Geomorphic measurements were taken during low flow conditions using a Nikon® NPR 332 Total Station. Three-dimensional coordinates associated with cross-section and profile data were collected in the field and geo-referenced (NAD83 State Plane feet FIPS 3200). Morphological data were collected at 28 cross-sections. Survey data was imported into CAD, ArcGIS®, and Microsoft Excel® for data processing and analysis. Channel substrate was characterized using a Wolman Pebble Count as outlined in Harrelson et al. (1994) and processed using Microsoft Excel. Vegetation success is being monitored at 26 permanent monitoring plots. Vegetation monitoring follows the CVS-EEP Level 2 Protocol for Recording Vegetation, version 4.2 (Lee et al. 2008) and includes analysis of species composition and density of planted species. Data is processed using the CVS data entry tool. In the field, the four corners of each plot were permanently marked with metal t-posts and photos of each plot are taken from the origin each monitoring year.

Precipitation data was reported from the onsite Onset HOBO Data Logging Rain Gauge and the NCCRONOS station in at the Asheville Regional Airport. Bankfull events were documented with crest gauges and continuous stage recorders, each cross-referenced with the bankfull elevation at its location. Crest gauges will be monitored semi-annually. The height of the corklines was recorded and cross-referenced with known bankfull elevations at each crest gauge.

Groundwater for hydrologic success of restored wetlands was monitored using eight HOBO U20 Water Level Loggers. An additional logger was installed on site, above ground, for use as a barometric reference. Data loggers collected depth to groundwater daily and all data were processed using HOBOware and analyzed using Microsoft Excel.

3.0 REFERENCE

Equinox Environmental. 2019. As-Built Baseline Report – Fletcher Mitigation Site. Prepared for North Carolina Department of Environmental Quality, Division of Mitigation Services. DMS Project No. 100004.

Kee Mapping and Survey. 2019. As-Built Survey of Fletcher Creek Restoration Project. Prepared for EW Solutions.

Lee, Michael T., R.K. Peet, S.D. Roberts, and T.R. Wentworth. 2008. CVS-EEP Protocol for Recording Vegetation, Version 4.2 (http://cvs.bio.unc.edu/methods.htm)

Stantec Consulting, Inc. 2018. Final Mitigation Plan – Fletcher Mitigation Site. Prepared for North Carolina Department of Environmental Quality, Division of Mitigation Services. DMS Project No. 100004.

USACE (U.S. Army Corps of Engineers). 2003. Stream Mitigation Guidelines. U.S. Army Corps of Engineers, U.S. Environmental Protection Agency, North Carolina Wildlife Resources Commission, North Carolina Department of Environment and Natural Resources-Division of Water Quality. Wilmington District

Appendix A
Project Background Data and Maps

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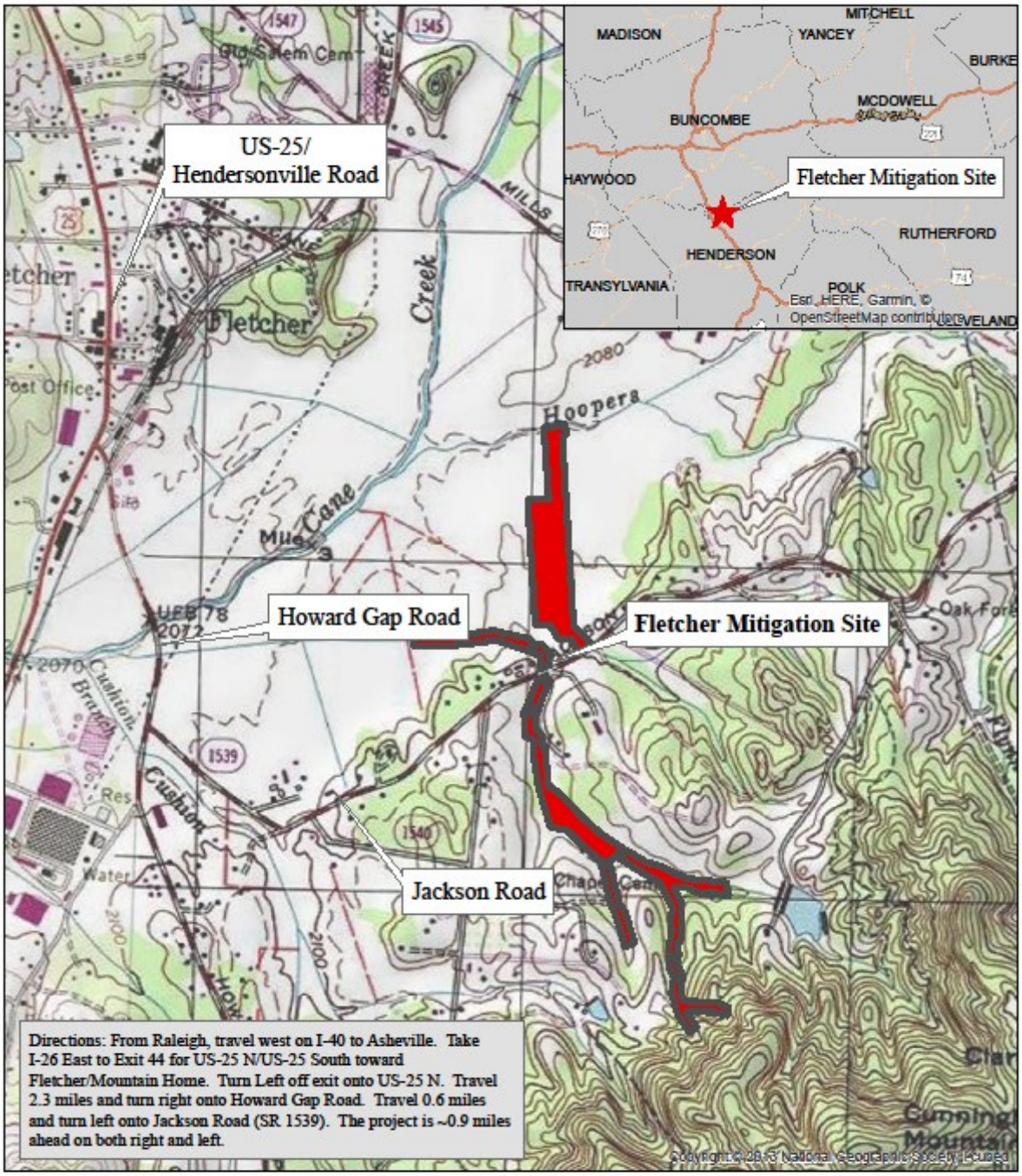

EQUINOX

Figure 1
Vicinity Map
Fletcher Mitigation Site

Proposed Site

0 500 1,000 2,000 Feet

This map is not a survey and is not to be construed as such.

Table 1. Project Mitigation Assets and Components Fletcher Mitigation Site							
Project Segment	Mitigation Plan (ft/Ac)	As-Built Centerline (ft/Ac)^	Mitigation Category	Restoration Level	Mitigation Ratio (X:1)	Mitigation Plan Credits*	Comments
Fletcher Creek 1a	461	457	Cool	EII	2.5	184.400	
Fletcher Creek 1b	377	377	Cool	R	1.0	377.000	
Fletcher Creek 1c	1,540	1,507	Cool	R	1.0	1,540.000	Less 51' for crossing
Fletcher Creek 2a	1,296	1,290	Cool	R	1.0	1,296.000	Less 33' for utility crossing; Less than 30' buffer for 86 LF
Fletcher Creek 2b	1,470	1,558	Cool	R	1.0	1,470.000	Less 33' for outlet protection and 51' and 73' for 2 crossings
Raccoon Branch 1a	489	489	Cool	P	10.0	48.900	.001 ac temporary impact to Wetland A
Raccoon Branch 1b	461	461	Cool	P	10.0	46.100	.006 ac temporary impact to Wetland B
Raccoon Branch 1c	153	143	Cool	EII	2.5	61.200	Less 53' for crossing; Stream length not included in wetlands
Raccoon Branch 1d	448	439	Cool	R	1.0	448.000	
Pine Branch 1	299	301	Cool	P	10.0	29.900	
Coates Branch Reach 1a	282	283	Cool	EII	2.5	112.800	
Coates Branch Reach 1b	606	598	Cool	R	1.0	606.000	.016 ac temporary impact to Wetland D
Coates Branch Reach 1c	708	702	Cool	R	1.0	708.000	Less 44' for crossing
Coates Branch Reach 1d	325	321	Cool	R	1.0	325.000	
Weston Creek 1a	1,954	1,916	Cold	R	1.0	1,954.000	Less 29' for ROW and outlet protection
Weston Creek 1b	804	798	Cold	R	1.0	804.000	
Wetland A	0.03	n/a	RNR	E	n/a	n/a	0.001 ac temporary impact to Wetland A
Wetland B	0.11	n/a	RNR	E	n/a	n/a	0.006 ac temporary impact to Wetland A
Wetland D	0.05	n/a	RNR	E	n/a	n/a	0.016 ac temporary impact to Wetland A
Wetland E	8.9	8.910	RNR	REE	1.0	8.910	

* Mitigation plan credits account for breaks in conservation easements and are based on design stream stationing and taken from the approved mitigation plan. Mitigation plan credits are the same as the approved mitigation plan.

^ Based on centerline calculations from the as-built survey, accounts for breaks in conservation easement and utility right-of-ways.

Project Credits

	Stream			Wetland	Non-Rip	Coastal
Restoration Level	Warm	Cool	Cold	Non-Riv	Wetland	Marsh
Restoration	-	6770.000	2758.000	-	-	-
Re-establishment				8.910	-	-
Rehabilitation				-	-	-
Enhancement				-	-	-
Enhancement I	-	-	-			
Enhancement II	-	358.400	-			
Creation						
Preservation	-	124.900	-	-	-	
Total Credits[%]	**-**	**7253.300**	**2758.000**	**8.910**	**-**	**-**

[%] Project credits reflect the sum of credits outlined in the approved mitigation plan.

Total Stream Credit 10,011.300

Total Wetland Credit 8.910

Wetland Mitigation Category

CM	Coastal Marsh
R	Riparian
NR	Non-Riparian

Restoration Level

HQP	High Quality Preservation
P	Preservation
E	Wetland Enhancement - Veg and Hydro
EII	Stream Enhancement II
EI	Stream Enhancement I
C	Wetland Creation
RH	Wetland Rehabilitation - Veg and Hydro
REE	Wetland Re-establishment Veg and Hydro
R	Restoration

Table 2. Project Activity and Reporting History Fletcher Mitigation Site		
Activity or Report	**Data Collection Complete**	**Completion or Delivery**
Mitigation Plan	Feb - 2018	Feb - 2018
Mitigation Plan Addendum	-	-
Final Design - Construction Plans	-	Mar - 2018
Construction	-	Mar - 2019
Temporary S&E Mix Applied	-	Mar - 2019
Permanent Seed Mix Applied	-	Mar - 2019
Bare Root and Live Stake Plantings	-	Mar- 2019
Baseline Monitoring Document (Year 0 Monitoring - Baseline)	Mar - 2019	Apr - 2019
Stream Assessment	Mar - 2019	Apr - 2019
Vegetation Assessment	Mar - 2019	
Adaptive Management-Weston Cr	-	Dec-2019
Adaptive Management-Weston Cr replant	-	Jan-2020
Pre-Year 1 Vegetation Monitoring-North Side	Dec 2019	-
Pre-Year 1 Geomorphology Monitoring-North Side	Dec 2019	-
Pre-Year 1 Vegetation Monitoring-South Side	Dec 2019	-
Pre-Year 1 Geomorphology Monitoring-South Side	Dec 2019	-
Weston Cr flood damage repair	-	Feb-2020
Weston Cr flood damage replant	-	Feb-2020
MY1 Invasive Vegetation Treatments	Jun 2020	-
MY1 Invasive Vegetation Treatments	Jul 2020	
MY1 Invasive Vegetation Treatments	Aug 2020	-
MY1 Weston Reach Beaver Removal	-	July 2020
MY1 Monitoring Geomorphology	Oct 2020	-
MY1 Monitoring Vegetation	Oct 2020	-
MY1 Monitoring Report	-	Dec-2020
MY2 Monitoring		
MY3 Monitoring		
MY4 Monitoring		
MY5 Monitoring		
MY6 Monitoring		
MY7 Monitoring		

Table 3. Project Contacts	
Fletcher Mitigation Site	
Prime Contractor	EW Solutions 37 Haywood Street, Suite 100 Asheville, NC 28801 David Tuch (828) 253-6856
Designer	Stantec Consulting, Inc 56 College Street, Suite 201 Asheville, North Carolina 28801 Grant Ginn (828) 449-1930
Construction Contractor (North Side)	Penland Contracting, Inc 300 NP&L Loop Franklin, NC 28734 Lewis Penland (828) 421-1753
Construction Contractor (South Side)	Baker Construction 1000 Bat Cave Road Old Fort, NC 28762 Charles Baker (828) 668-5060
Seeding Contractor (North Side)	Penland Contracting, Inc 300 NP&L Loop Franklin, NC 28734 Lewis Penland (828) 421-1753
Seeding Contractor (South Side)	Baker Construction 1000 Bat Cave Road Old Fort, NC 28762 Charles Baker (828) 668-5060
Planting Contractor	Equinox 37 Haywood St. Asheville, North Carolina 28801 Owen Carson (828) 253-6856
As-built Surveys	Kee Mapping 88 Central Ave. Asheville, NC 28801 Brad Kee (828) 575-9021
Seeding Mix Source	SESSCO LLC 209 Cane Creek Rd Fletcher , NC 28732 (828) 654-8991
Live Stakes	Mellow Marsh Farms 1312 Woody Store Road Siler City, NC 27344 (919) 742-1200
Monitoring Performers (MY1)- 2020	Equinox 37 Haywood St. Asheville, North Carolina 28801 Danvey Walsh (828) 253-6856

Table 4. Project Baseline Information and Attributes

Project Information

Project Name	Fletcher Stream and Wetland Mitigation Site
County	Henderson
Project Area (acres)	34.8
Project Coordinates (latitude and longitude)	35.422278° N, -82.486183° W

Project Watershed Summary Information

Physiographic Province		Blue Ridge	
River Basin		French Broad River	
USGS Hydrologic Unit 8-digit	6010105	USGS Hydrologic Unit 14-digit	06010105040010
DWR Sub-basin		04-03-02	
Project Drainage Area (sq. miles)		0.52 Fletcher Creek / 0.37 Weston Branch	
Project Drainage Area Percentage of Impervious Area		< 1%	
CGIA Land Use Classification		Agricultural	

Reach Summary Information

Parameters	Fletcher Creek 1A	Fletcher Creek 1B	Fletcher Creek 1C	Fletcher Creek 2A	Fletcher Creek 2B	Raccoon Branch 1A	Raccoon Branch 1B	Raccoon Branch 1C	Raccoon Branch 1D	Pine Branch	Coates Branch 1A	Coates Branch 1B	Coates Branch 1C	Coates Branch 1D	Weston Creek 1A	Weston Creek 1B
Length of Reach (linear feet) ^	457	380	1,541	1,299	1,510	489	461	143	440	301	283	601	708	325	1,982	825
Valley Confinement (Rosgen)	II	II	II	II	VIII	II	II	II	II	II	II	II	II	II	VIII	VIII
Drainage area (miles^2)	0.30	0.30	0.37	0.49	0.52	0.01	0.03	0.04	0.04	0.01	0.02	0.03	0.04	0.07	0.30	0.37
Perennial, Intermittent, Ephemeral	Perennial	Perennial	Perennial	Perennial	Perennial	Perennial	Perennial	Perennial	Perennial	Intermittent	Perennial	Perennial	Perennial	Perennial	Perennial	Perennial
NCDWR Water Quality Classification	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C: Tr	C: Tr
Stream Classification (existing)	G	G	B, F, G	B, G	B, E, G	B	B	B, G	B, G	B	B, G	B, G	B, F, G	B	E, G	E, G
Stream Classification (proposed)	B4	B4	B4	B4	B5	B4	B4	B4	B4	B4	B4	B4	B4	B4	C5	C5
FEMA classification	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Wetland Summary Information

Parameters	Wetland A	Wetland B	Wetland D	Wetland E
Size of Wetland (acres)	0.03	0.11	0.05	8.91
Wetland Type (non-riparian, riparian riverine or riparian non-riverine)	Riparian	Riparian	Riparian	Riparian
Mapped Soil Series	-	-	-	Ha
Drainage class	-	-	-	poorly
Soil Hydric Status	Hydric	Hydric	Hydric	Hydric
Source of Hydrology	Spring	Spring	Spring	Groundwater
Hydrologic Impairment	Agriculture/ Livestock Grazing	Agriculture/ Livestock Grazing	Agriculture/ Livestock Grazing	Agriculture
Native vegetation community	Mountain Alluvial Forest	Mountain Alluvial Forest	Mountain Alluvial Forest	Mountain Alluvial Forest
Percent composition of exotic invasive vegetation	15%	15%	15%	1%

Regulatory Considerations

Regulation	Applicable ?	Resolved?	Supporting Documentation
Waters of the United States – Section 404	Yes	Yes	Jurisdictional Determination
Waters of the United States – Section 401	Yes	Yes	Jurisdictional Determination
Endangered Species Act	Yes	Yes	ERTR
Historic Preservation Act	No	N/A	ERTR
Coastal Zone Management Act (CZMA)/ Coastal Area Management Act (CAMA)	No	N/A	N/A
FEMA Floodplain Compliance	Yes	Yes	Yes
Essential Fisheries Habitat	No	N/A	N/A

^ Based on actual thalweg calculations from the as-built survey, accounts for breaks in conservation easement and utility right-of-ways.

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Appendix B
Visual Assessment Data

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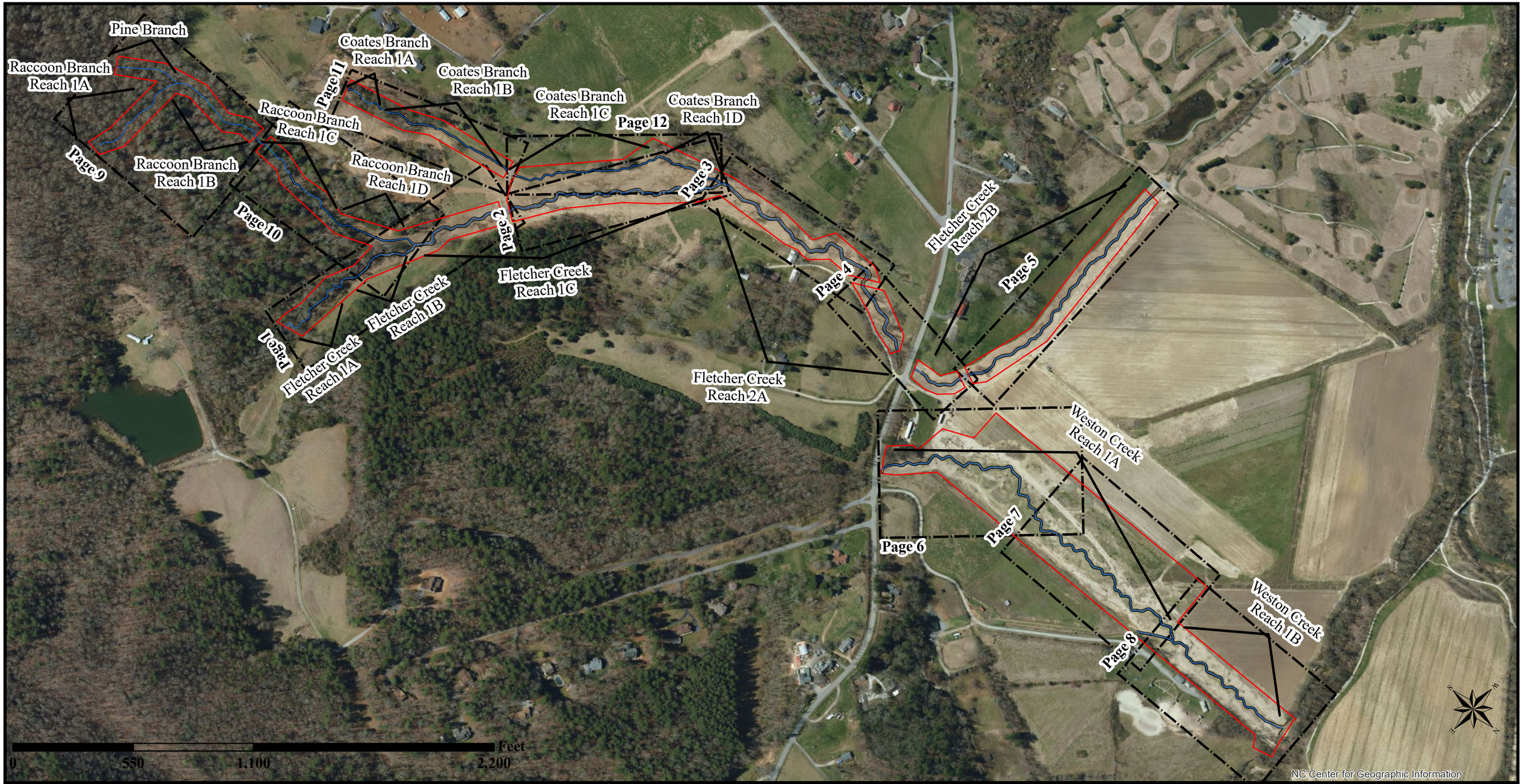

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Current Condition Plan View
Fletcher Mitigation Site
Monitoring Year 1
Henderson County, NC
NCDMS Contract No.: 006997
NCDMS Project No.: 100004
December 2020
Overview

Easement
Map Pages
As-Built Top of Bank
As-Built Thalweg

Notes:
1) Baseline Data Provided by Kee Mapping

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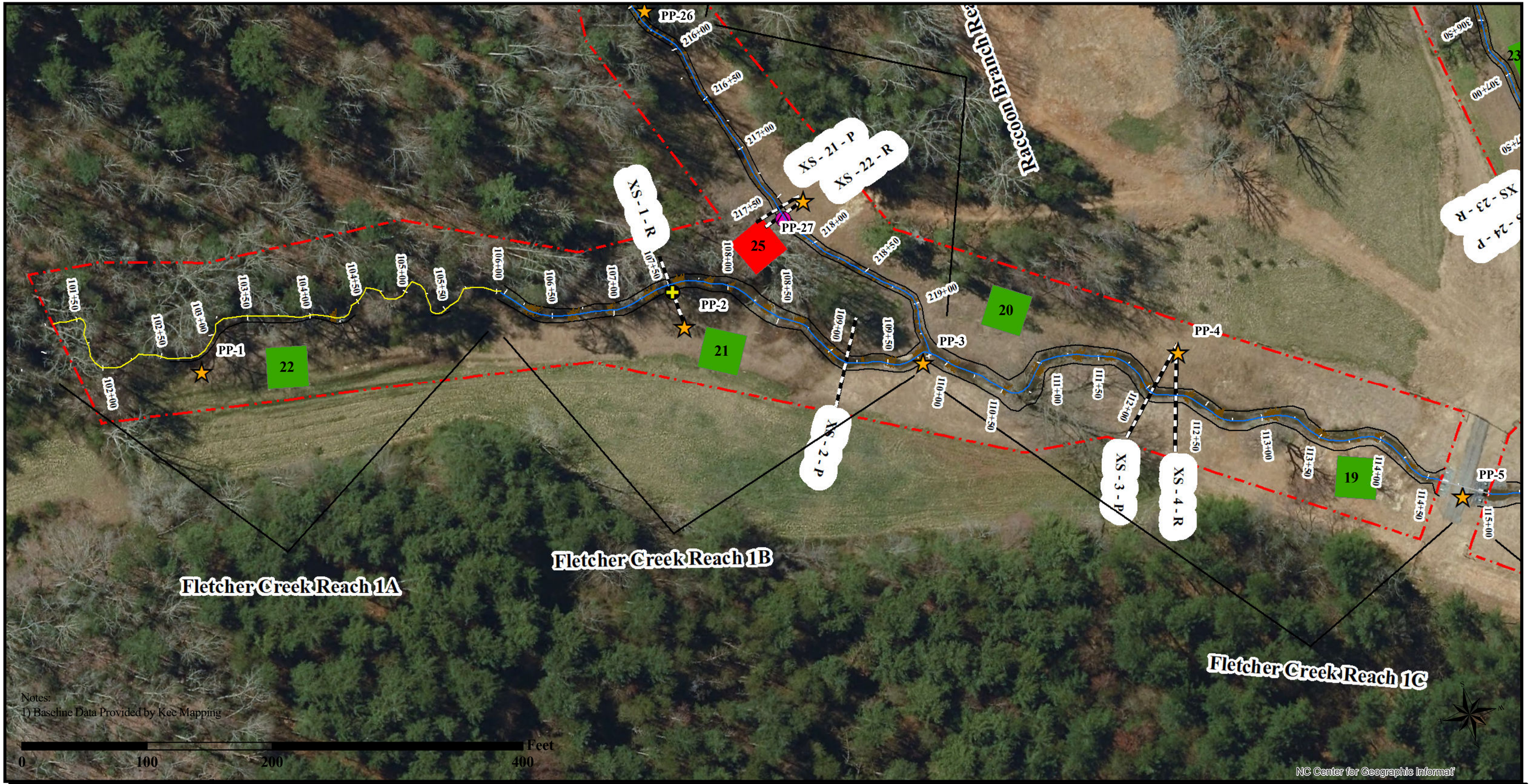

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Fletcher Mitigation Site
Monitoring Year 1
Henderson County, NC
NCDMS Contract No.: 006997
NCDMS Project No.: 100004
December 2020
Sheet 1 of 12

Streams

- Enhancement II
- No Credit
- Restoration

- As-Built Top of Bank
- Continuous Stage Recorder
- Crest Gauge
- Photo Point

- Cross-Section

Vegetation Plot

- Failing > 10%
- Meeting > 10%

- Conservation Easement

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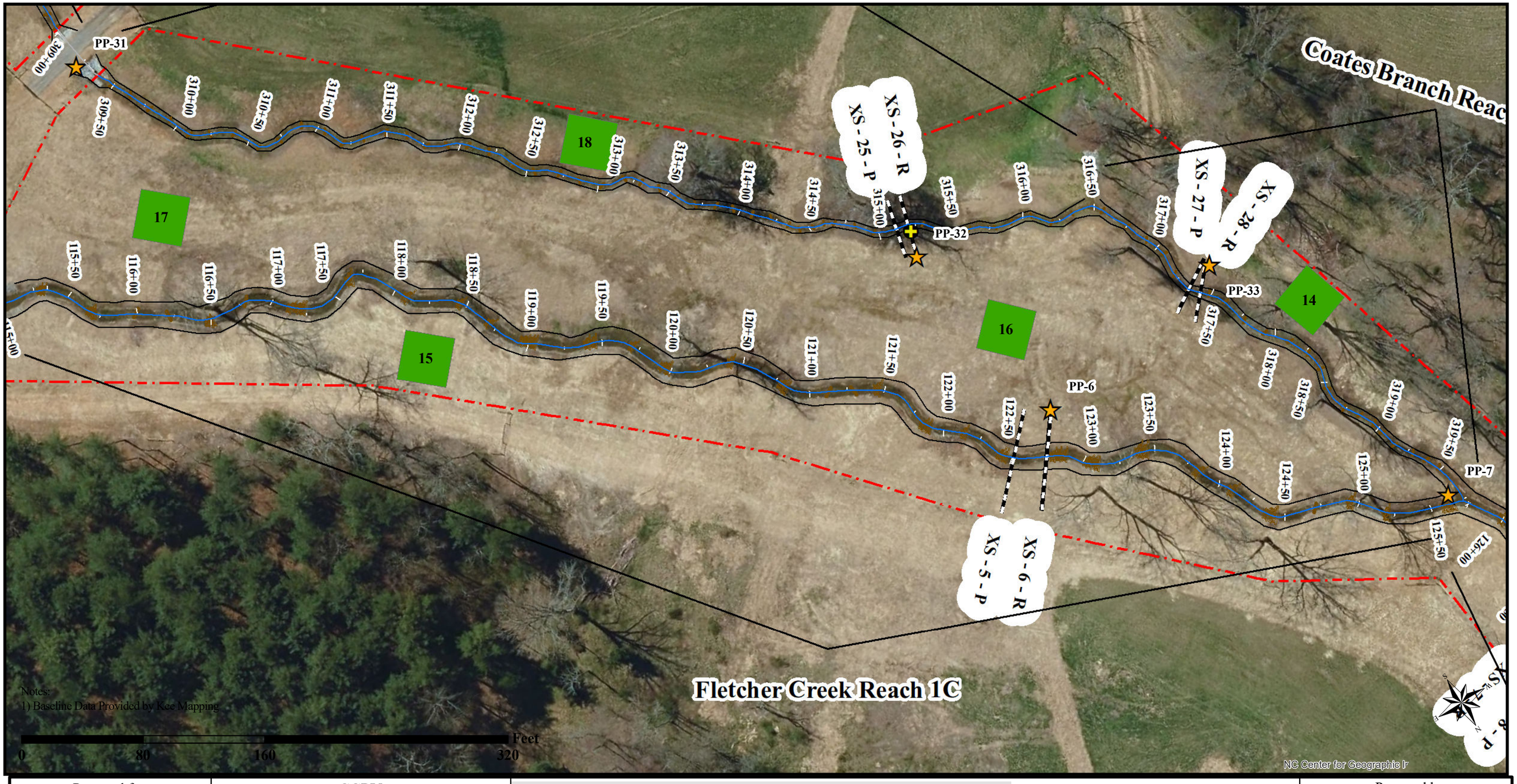

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Fletcher Mitigation Site
Monitoring Year 1
Henderson County, NC
NCDMS Contract No.: 006997
NCDMS Project No.: 100004
December 2020
Sheet 2 of 12

Streams
- No Credit
- Restoration
- As-Built Top of Bank

- Crest Gauge
- Photo Point
- Cross-Section

Vegetation Plot
- Meeting > 10%
- Conservation Easement

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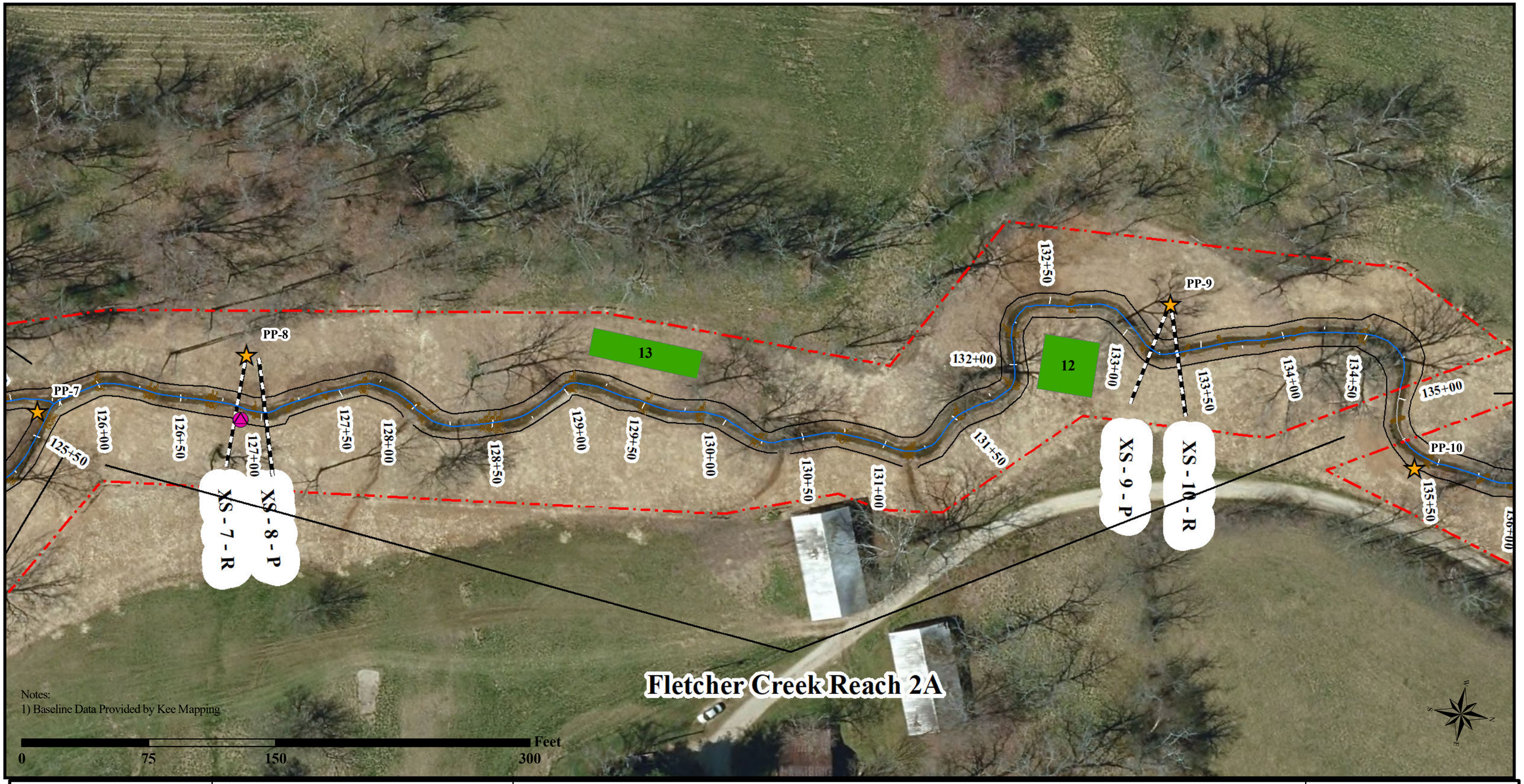

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Fletcher Mitigation Site
Monitoring Year 1
Henderson County, NC
NCDMS Contract No.: 006997
NCDMS Project No.: 100004
December 2020
Sheet 3 of 12

Streams

- No Credit
- Restoration
- As-Built Top of Bank

- Continuous Stage Recorder
- Photo Point
- Cross-Section

Vegetation Plot

- Meeting > 10%
- Conservation Easement

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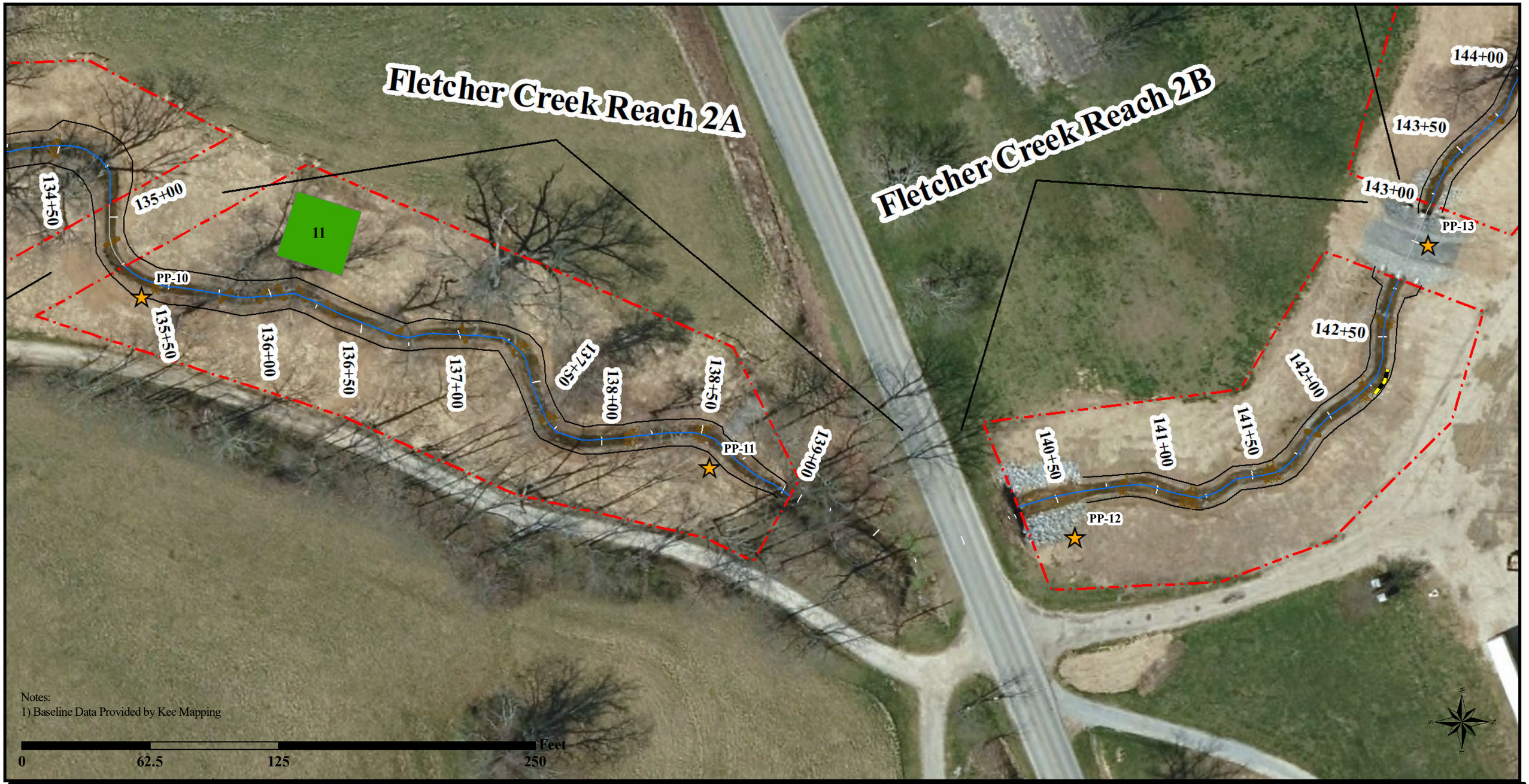

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Fletcher Mitigation Site
Monitoring Year 1
Henderson County, NC
NCDMS Contract No.: 006997
NCDMS Project No.: 100004
December 2020
Sheet 4 of 12

Streams

- No Credit
- Restoration
- As-Built Top of Bank
- Bank Erosion
- Photo Point

Vegetation Plot

- Meeting > 10%

Conservation Easement

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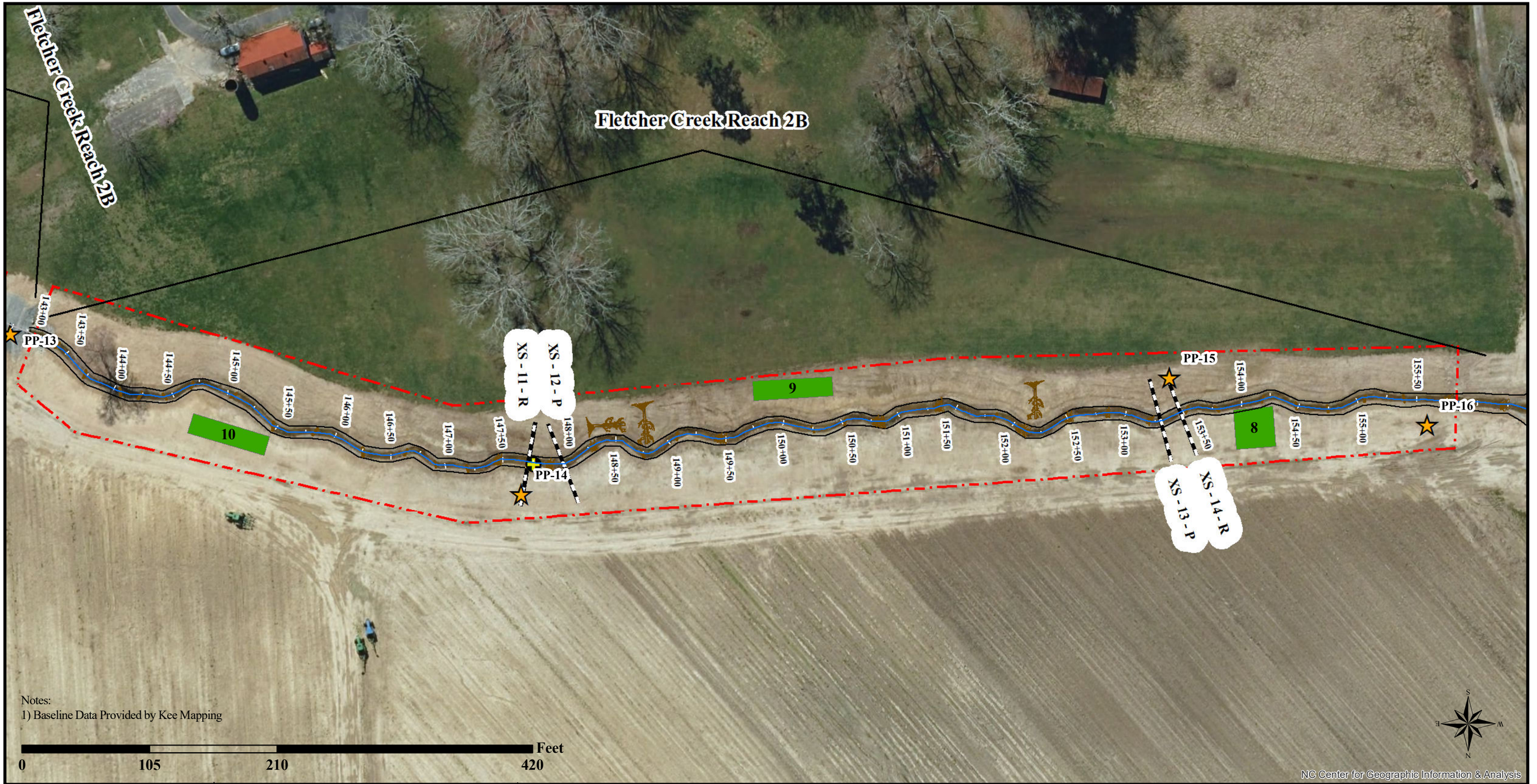

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Fletcher Mitigation Site
Monitoring Year 1
Henderson County, NC
NCDMS Contract No.: 006997
NCDMS Project No.: 100004
December 2020
Sheet 5 of 12

Streams

- No Credit
- Restoration
- As-Built Top of Bank

- Crest Gauge
- Photo Point
- Cross-Section

Vegetation Plot

- Meeting > 10%
- Conservation Easement

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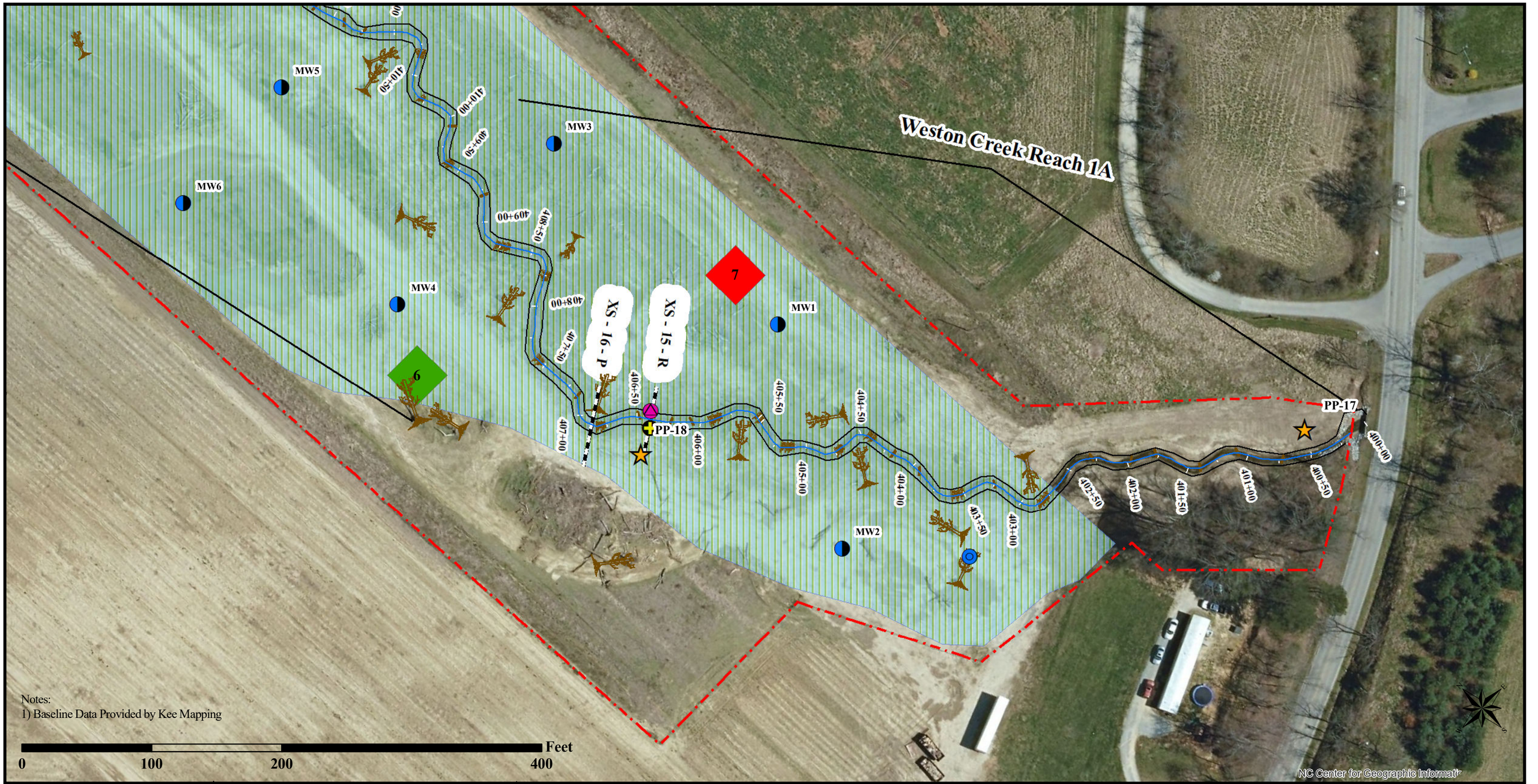

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Fletcher Mitigation Site
Monitoring Year 1
Henderson County, NC
NCDMS Contract No.: 006997
NCDMS Project No.: 100004
December 2020
Sheet 6 of 12

Streams
- Restoration
- As-Built Top of Bank
- Continuous Stage Recorder

- Crest Gauge
- Groudwater Gauge
- Photo Point
- Rain Gauge

- Cross-Section

Vegetation Plot
- Failing > 10%
- Meeting > 10%

- Wetland Re-Establishment
- Conservation Easement

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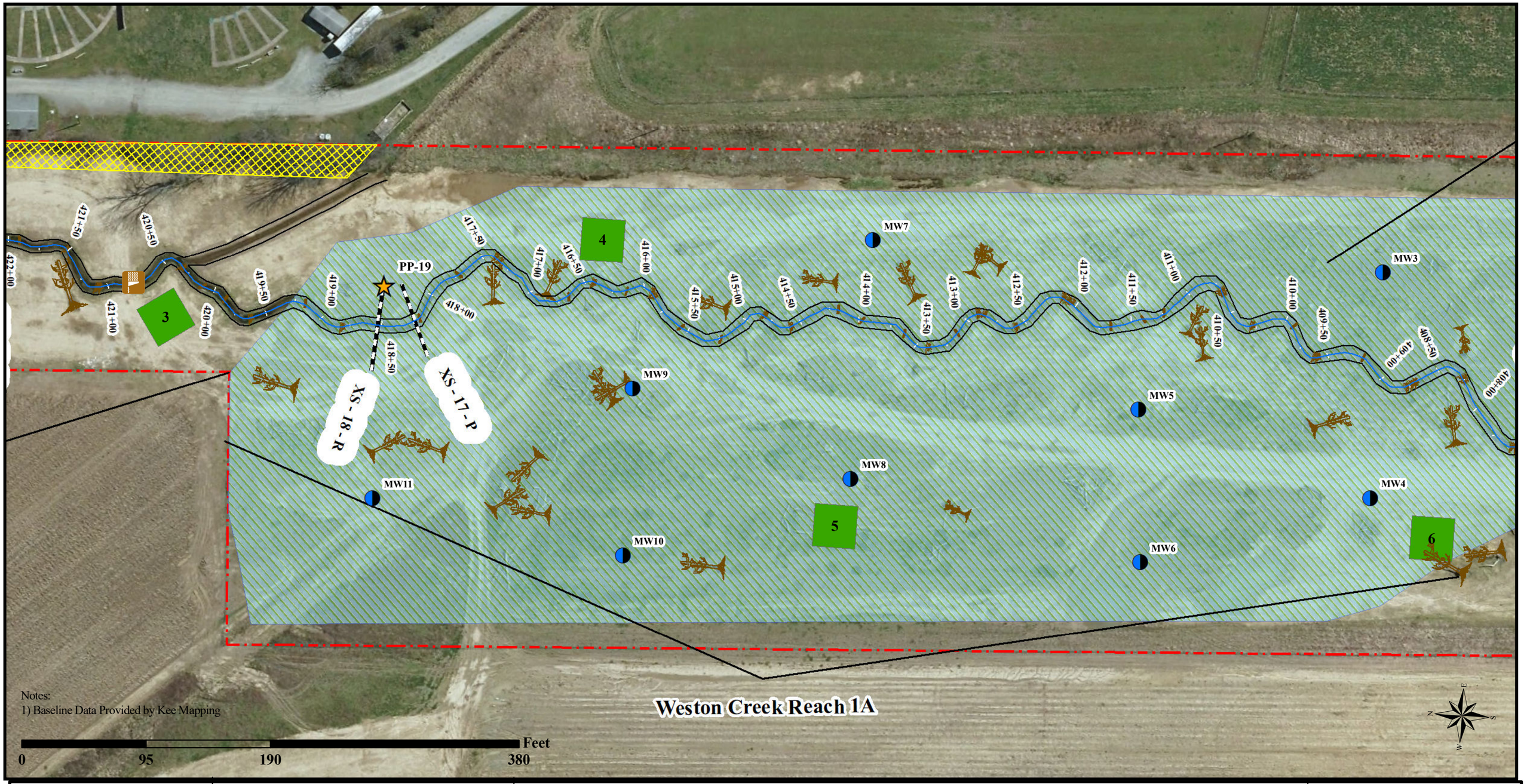

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Fletcher Mitigation Site
Monitoring Year 1
Henderson County, NC
NCDMS Contract No.: 006997
NCDMS Project No.: 100004
December 2020
Sheet 7 of 12

Streams
- Restoration
- As-Built Top of Bank
- Beaver dam

Groudwater Gauge
Photo Point
Cross-Section

Invasive Vegetation
- Present

Vegetation Plot
- Meeting > 10%
- Wetland Re-Establishment

Conservation Easement

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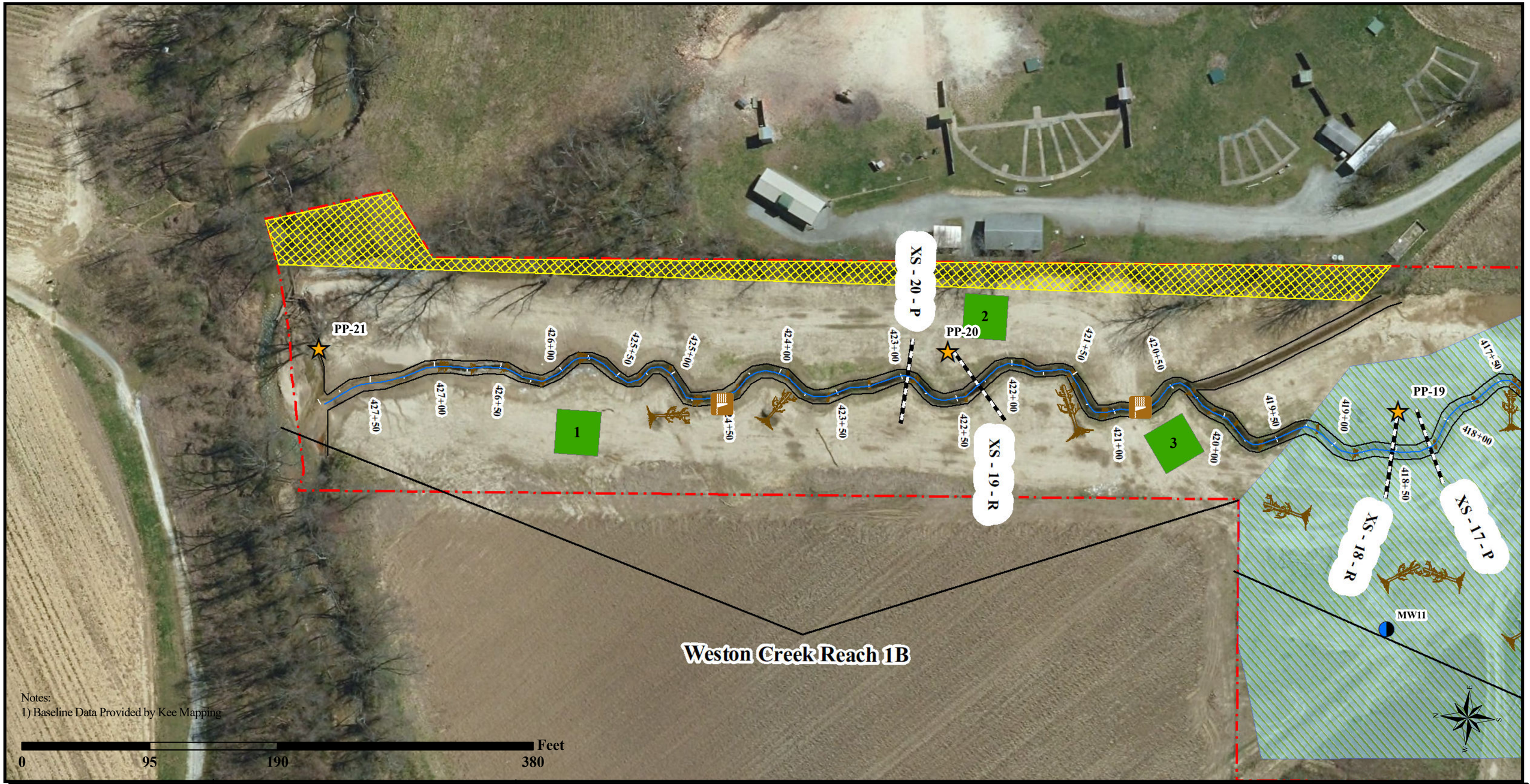

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Fletcher Mitigation Site
Monitoring Year 1
Henderson County, NC
NCDMS Contract No.: 006997
NCDMS Project No.: 100004
December 2020
Sheet 8 of 12

Streams
- Restoration
- As-Built Top of Bank
- Beaver dam

Groudwater Gauge
Photo Point
Cross-Section

Invasive Vegetation
- Present

Vegetation Plot
- Meeting > 10%
- Wetland Re-Establishment

Conservation Easement

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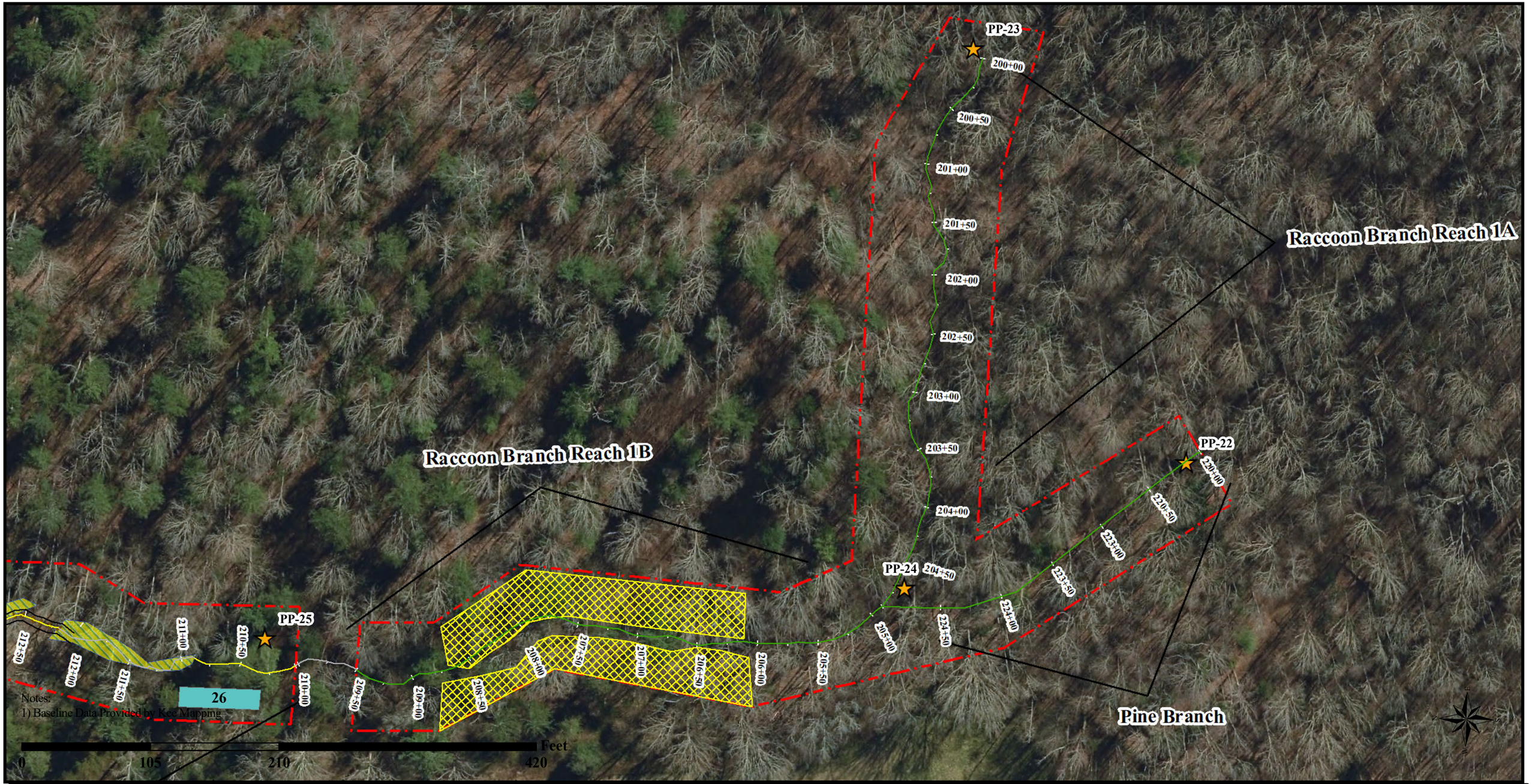

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Fletcher Mitigation Site
Monitoring Year 1
Henderson County, NC
NCDMS Contract No.: 006997
NCDMS Project No.: 100004
December 2020
Sheet 9 of 12

Streams
- Enhancement II
- No Credit
- Preservation
- As-Built Top of Bank
- Photo Point

Invasive Vegetation
- Present

Vegetation Plot
- Meeting < 10%
- Wetlands Enhancement
- Conservation Easement

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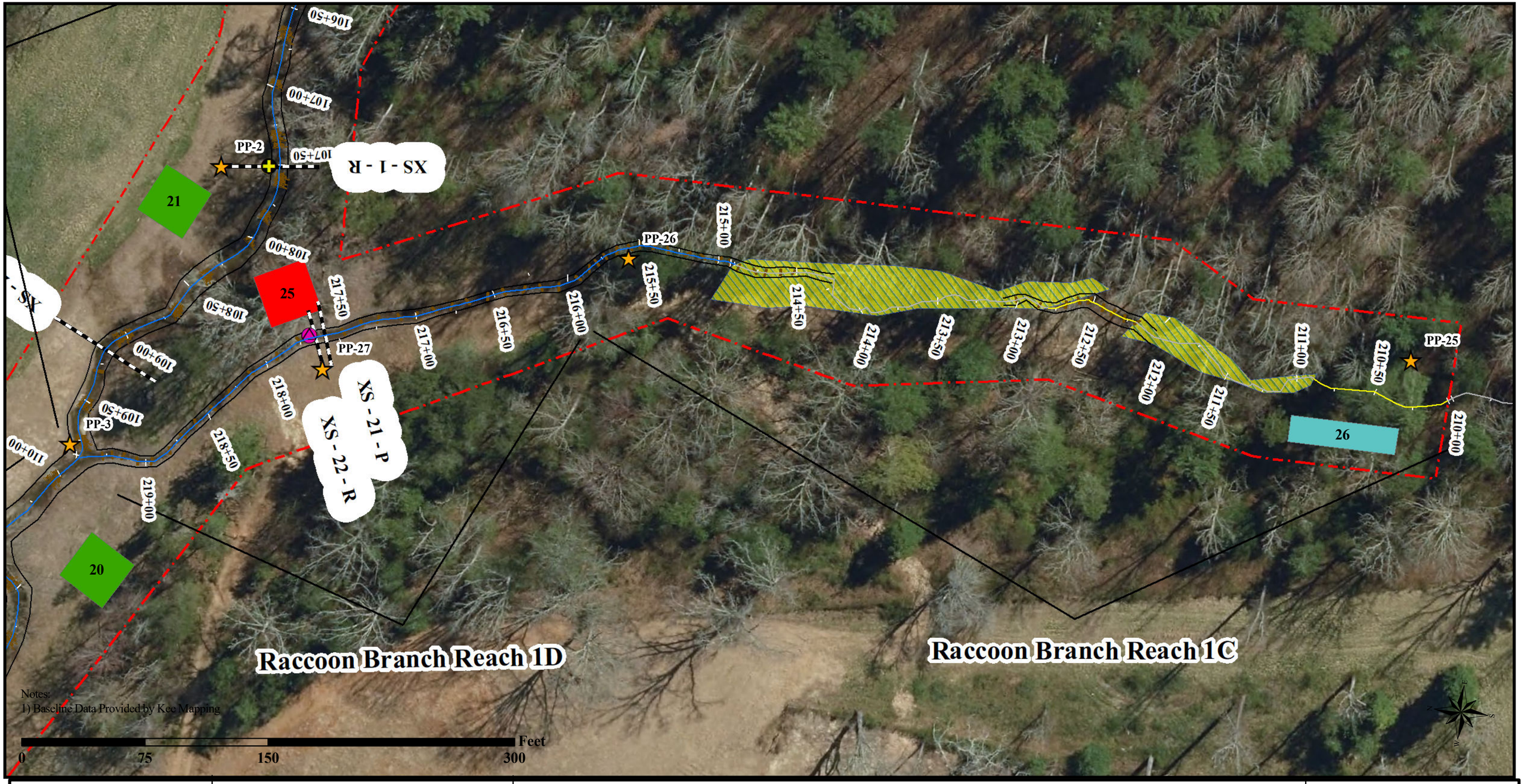

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Fletcher Mitigation Site
Monitoring Year 1
Henderson County, NC
NCDMS Contract No.: 006997
NCDMS Project No.: 100004
December 2020
Sheet 10 of 12

Streams

- Enhancement II
- No Credit
- Restoration
- As-Built Top of Bank
- Continuous Stage Recorder
- Crest Gauge
- Photo Point
- Cross-Section

Vegetation Plot

- Failing > 10%
- Meeting < 10%
- Meeting > 10%
- Wetlands Enhancement
- Conservation Easement

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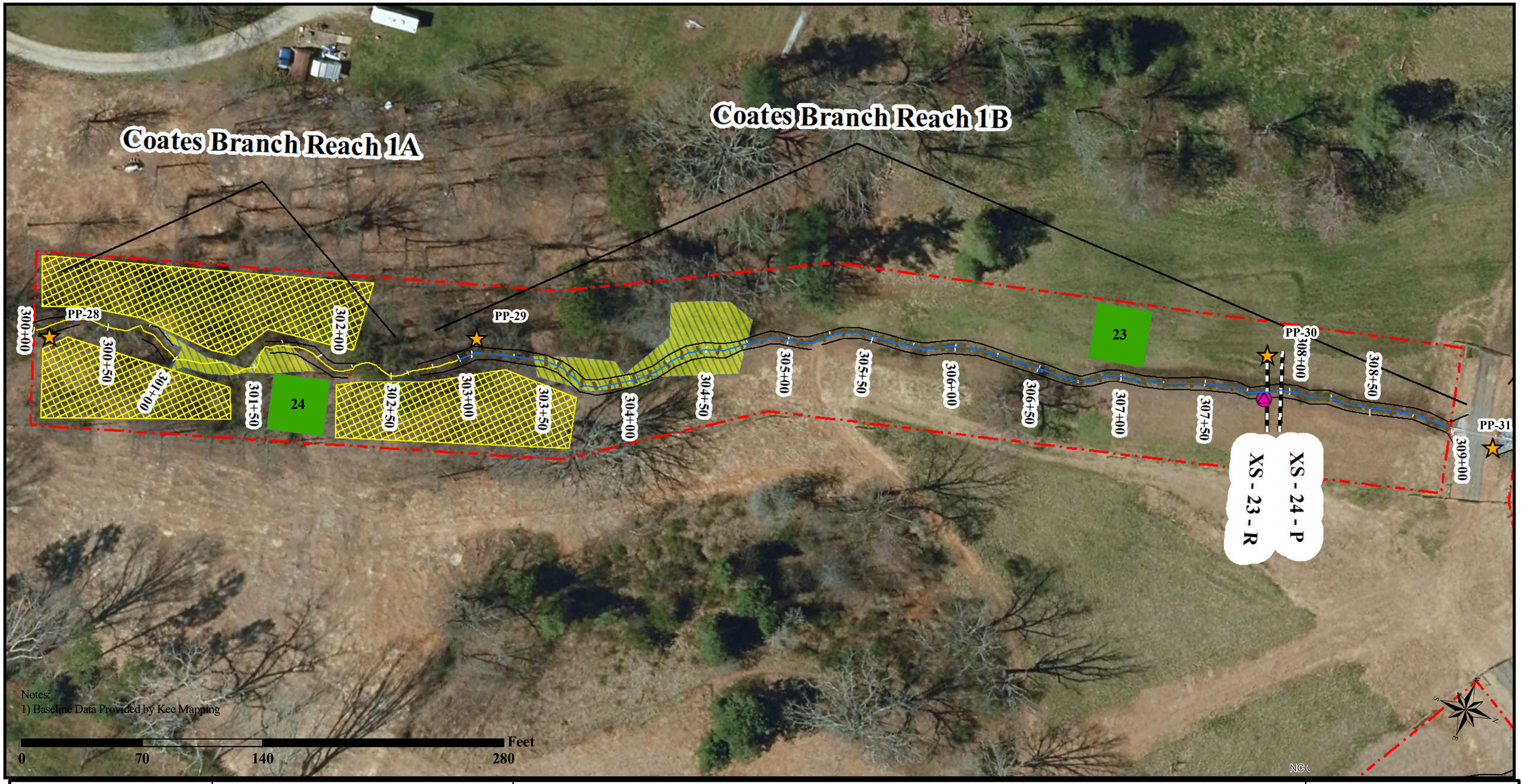

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Fletcher Mitigation Site
Monitoring Year 1
Henderson County, NC
NCDMS Contract No.: 006997
NCDMS Project No.: 100004
December 2020
Sheet 11 of 12

Streams
- Enhancement II
- No Credit
- Restoration
- As-Built Top of Bank
- Continuous Stage Recorder
- Photo Point
- Cross-Section

Invasive Vegetation
- Present

Vegetation Plot
- Meeting > 10%
- Wetlands Enhancement

- Conservation Easement

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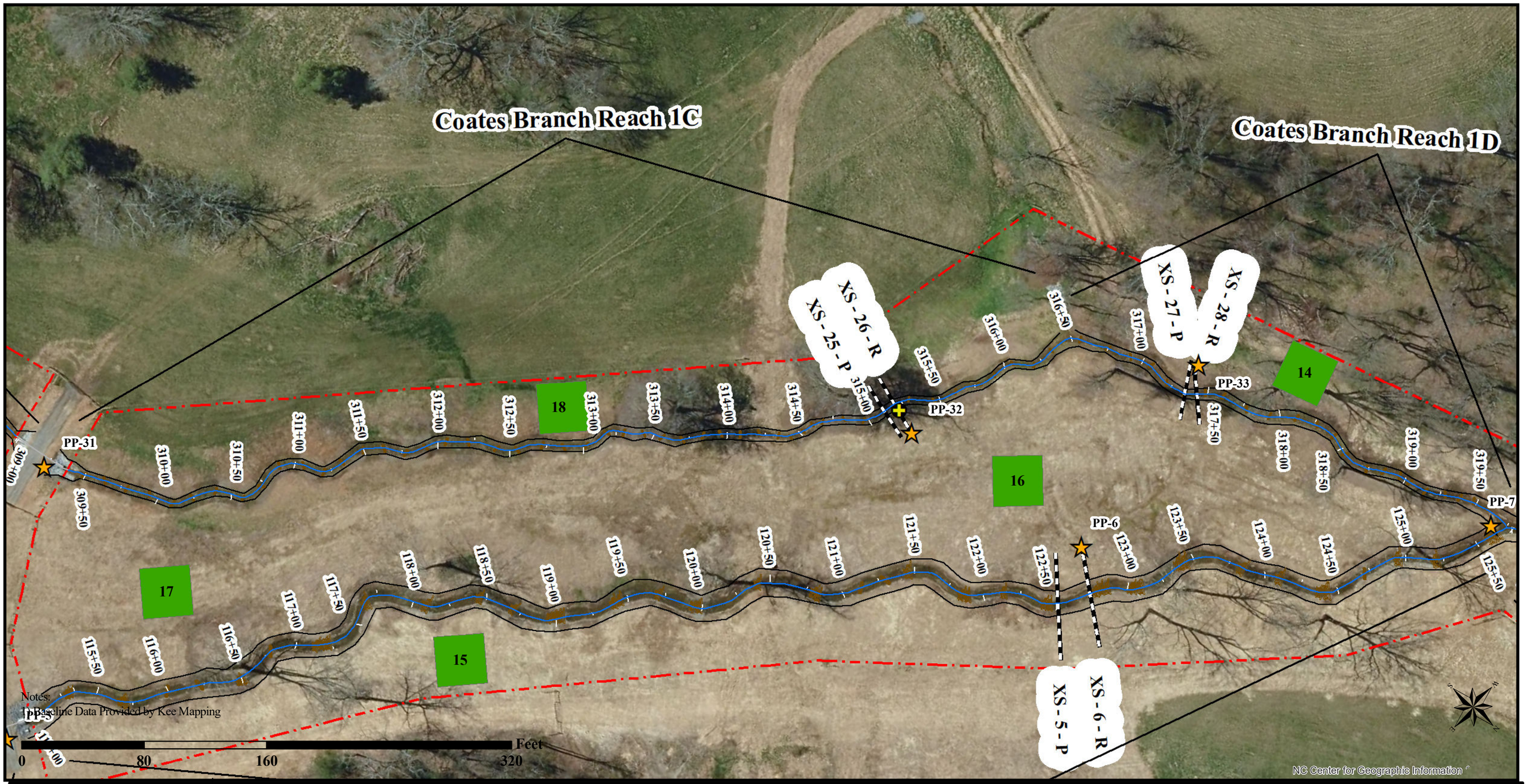

Notes:
1. Baseline Data Provided by Kee Mapping

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Fletcher Mitigation Site
Monitoring Year 1
Henderson County, NC
NCDMS Contract No.: 006997
NCDMS Project No.: 100004
December 2020
Sheet 12 of 12

Streams
- No Credit
- Restoration
- As-Built Top of Bank

- Crest Gauge
- Photo Point
- Cross-Section

Vegetation Plot
- Meeting > 10%
- Conservation Easement

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Table 5. Visual Stream Morphology Stability Assessment
Fletcher Mitigation Site (MY1) - Fletcher Creek Reach 1A - Enhancement II
Assessed Length 457 feet

Major Channel Category	Channel Sub-Category	Metric	Number Stable, Performing as Intended	Total Number in As-built	Number of Unstable Segments	Amount of Unstable Footage	% Stable, Performing as Intended	Number with Stabilizing Woody Vegetation	Footage with Stabilizing Woody Vegetation	Adjusted % for Stabilizing Woody Vegetation
1. 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%	N/A	N/A	N/A
	3. Mass Wasting	Bank slumping, calving, or collapse.			0	0	100%	N/A	N/A	N/A
				Totals	0	0	100%	N/A	N/A	N/A
3. Engineered Structures	1. Overall Integrity	Structures physically intact with no dislodged boulders or logs.	N/A	N/A			N/A			
	2. Grade Control	Grade control structures exhibiting maintenance of grade across the sill.	N/A	N/A			N/A			
	2a. Piping	Structures lacking any substantial flow underneath sills or arms.	N/A	N/A			N/A			
	3. Bank Protection	Bank erosion within the structures extent of influence does NOT exceed 15%.	N/A	N/A			N/A			
	4. Habitat	Pool forming structures maintaining ~ Max Pool Depth : Mean Bankfull Depth Ratio ≥ 1.6. Rootwads/logs providing some cover at base-flow.	N/A	N/A			N/A			

- Information Unavailable
N/A - Item does not apply.

Table 5 cont'd. Visual Stream Morphology Stability Assessment
Fletcher Mitigation Site (MY1) - Fletcher Creek Reach 1B - Restoration
Assessed Length 380 feet

Major Channel Category	Channel Sub-Category	Metric	Number Stable, Performing as Intended	Total Number in As-built	Number of Unstable Segments	Amount of Unstable Footage	% Stable, Performing as Intended	Number with Stabilizing Woody Vegetation	Footage with Stabilizing Woody Vegetation	Adjusted % for Stabilizing Woody Vegetation
1. 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	0	100%
				Totals	0	0	100%	0	0	100%
2. Engineered Structures	1. Overall Integrity	Structures physically intact with no dislodged boulders or logs.	1	1			100%			
	2. Grade Control	Grade control structures exhibiting maintenance of grade across the sill.	1	1			100%			
	2a. Piping	Structures lacking any substantial flow underneath sills or arms.	1	1			100%			
	3. Bank Protection	Bank erosion within the structures extent of influence does NOT exceed 15%.	1	1			100%			
	4. Habitat	Pool forming structures maintaining ~ Max Pool Depth : Mean Bankfull Depth Ratio ≥ 1.6. Rootwads/logs providing some cover at base-flow.	1	1			100%			

- Information Unavailable

N/A - Item does not apply.

Table 5 cont'd. Visual Stream Morphology Stability Assessment
Fletcher Mitigation Site (MY1) - Fletcher Creek Reach 1C - Restoration
Assessed Length 1,514 feet

Major Channel Category	Channel Sub-Category	Metric	Number Stable, Performing as Intended	Total Number in As-built	Number of Unstable Segments	Amount of Unstable Footage	% Stable, Performing as Intended	Number with Stabilizing Woody Vegetation	Footage with Stabilizing Woody Vegetation	Adjusted % for Stabilizing Woody Vegetation
1. 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	0	100%
				Totals	0	0	100%	0	0	100%
2. Engineered Structures	1. Overall Integrity	Structures physically intact with no dislodged boulders or logs.	6	6			100%			
	2. Grade Control	Grade control structures exhibiting maintenance of grade across the sill.	6	6			100%			
	2a. Piping	Structures lacking any substantial flow underneath sills or arms.	6	6			100%			
	3. Bank Protection	Bank erosion within the structures extent of influence does NOT exceed 15%.	6	6			100%			
	4. Habitat	Pool forming structures maintaining ~ Max Pool Depth : Mean Bankfull Depth Ratio ≥ 1.6. Rootwads/logs providing some cover at base-flow.	6	6			100%			

- Information Unavailable

N/A - Item does not apply.

Table 5 cont'd. Visual Stream Morphology Stability Assessment
Fletcher Mitigation Site (MY1) - Fletcher Creek Reach 2A - Restoration
Assessed Length 1,299 feet

Major Channel Category	Channel Sub-Category	Metric	Number Stable, Performing as Intended	Total Number in As-built	Number of Unstable Segments	Amount of Unstable Footage	% Stable, Performing as Intended	Number with Stabilizing Woody Vegetation	Footage with Stabilizing Woody Vegetation	Adjusted % for Stabilizing Woody Vegetation
1. 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	0	100%
				Totals	0	0	100%	0	0	100%
2. Engineered Structures	**1. Overall Integrity**	Structures physically intact with no dislodged boulders or logs.	14	14			100%			
	2. Grade Control	Grade control structures exhibiting maintenance of grade across the sill.	14	14			100%			
	2a. Piping	Structures lacking any substantial flow underneath sills or arms.	14	14			100%			
	3. Bank Protection	Bank erosion within the structures extent of influence does NOT exceed 15%.	14	14			100%			
	4. Habitat	Pool forming structures maintaining ~ Max Pool Depth : Mean Bankfull Depth Ratio ≥ 1.6. Rootwads/logs providing some cover at base-flow.	14	14			100%			

- Information Unavailable

N/A - Item does not apply.

Table 5 cont'd. Visual Stream Morphology Stability Assessment
Fletcher Mitigation Site (MY1) - Fletcher Creek Reach 2B - Restoration
Assessed Length 1,511 feet

Major Channel Category	Channel Sub-Category	Metric	Number Stable, Performing as Intended	Total Number in As-built	Number of Unstable Segments	Amount of Unstable Footage	% Stable, Performing as Intended	Number with Stabilizing Woody Vegetation	Footage with Stabilizing Woody Vegetation	Adjusted % for Stabilizing Woody Vegetation
1. Bank	**1. Scoured / Eroding**	Bank lacking vegetative cover resulting simply from poor growth and/or scour and erosion.			1	20	99%	0	0	99%
	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	0	100%
				Totals	1	20	99%	0	0	99%
2. Engineered Structures	**1. Overall Integrity**	Structures physically intact with no dislodged boulders or logs.	27	27			100%			
	2. Grade Control	Grade control structures exhibiting maintenance of grade across the sill.	27	27			100%			
	2a. Piping	Structures lacking any substantial flow underneath sills or arms.	27	27			100%			
	3. Bank Protection	Bank erosion within the structures extent of influence does NOT exceed 15%.	27	27			100%			
	4. Habitat	Pool forming structures maintaining ~ Max Pool Depth : Mean Bankfull Depth Ratio ≥ 1.6. Rootwads/logs providing some cover at base-flow.	27	27			100%			

- Information Unavailable

N/A - Item does not apply.

Table 5 cont'd. Visual Stream Morphology Stability Assessment
Fletcher Mitigation Site (MY1) - Raccoon Branch Reach 1C - Enhancement II
Assessed Length 153 feet

Major Channel Category	Channel Sub-Category	Metric	Number Stable, Performing as Intended	Total Number in As-built	Number of Unstable Segments	Amount of Unstable Footage	% Stable, Performing as Intended	Number with Stabilizing Woody Vegetation	Footage with Stabilizing Woody Vegetation	Adjusted % for Stabilizing Woody Vegetation
1. 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	0	100%
				Totals	0	0	100%	0	0	100%
2. Engineered Structures	**1. Overall Integrity**	Structures physically intact with no dislodged boulders or logs.	N/A	N/A			N/A			
	2. Grade Control	Grade control structures exhibiting maintenance of grade across the sill.	N/A	N/A			N/A			
	2a. Piping	Structures lacking any substantial flow underneath sills or arms.	N/A	N/A			N/A			
	3. Bank Protection	Bank erosion within the structures extent of influence does NOT exceed 15%.	N/A	N/A			N/A			
	4. Habitat	Pool forming structures maintaining ~ Max Pool Depth : Mean Bankfull Depth Ratio ≥ 1.6. Rootwads/logs providing some cover at base-flow.	N/A	N/A			N/A			

- Information Unavailable

N/A - Item does not apply.

Table 5 cont'd. Visual Stream Morphology Stability Assessment
Fletcher Mitigation Site (MY1) - Raccoon Branch Reach 1D - Restoration
Assessed Length 440 feet

Major Channel Category	Channel Sub-Category	Metric	Number Stable, Performing as Intended	Total Number in As-built	Number of Unstable Segments	Amount of Unstable Footage	% Stable, Performing as Intended	Number with Stabilizing Woody Vegetation	Footage with Stabilizing Woody Vegetation	Adjusted % for Stabilizing Woody Vegetation
1. 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	0	100%
				Totals	0	0	100%	0	0	100%
2. Engineered Structures	**1. Overall Integrity**	Structures physically intact with no dislodged boulders or logs.	N/A	N/A			N/A			
	2. Grade Control	Grade control structures exhibiting maintenance of grade across the sill.	N/A	N/A			N/A			
	2a. Piping	Structures lacking any substantial flow underneath sills or arms.	N/A	N/A			N/A			
	3. Bank Protection	Bank erosion within the structures extent of influence does NOT exceed 15%.	N/A	N/A			N/A			
	4. Habitat	Pool forming structures maintaining ~ Max Pool Depth : Mean Bankfull Depth Ratio ≥ 1.6. Rootwads/logs providing some cover at base-flow.	N/A	N/A			N/A			

- Information Unavailable

N/A - Item does not apply.

Table 5 cont'd. Visual Stream Morphology Stability Assessment
Fletcher Mitigation Site (MY1) - Coates Branch Reach 1A - Enhancement II
Assessed Length 284 feet

Major Channel Category	Channel Sub-Category	Metric	Number Stable, Performing as Intended	Total Number in As-built	Number of Unstable Segments	Amount of Unstable Footage	% Stable, Performing as Intended	Number with Stabilizing Woody Vegetation	Footage with Stabilizing Woody Vegetation	Adjusted % for Stabilizing Woody Vegetation
1. 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	0	100%
				Totals	0	0	100%	0	0	100%
2. Engineered Structures	1. Overall Integrity	Structures physically intact with no dislodged boulders or logs.	N/A	N/A			N/A			
	2. Grade Control	Grade control structures exhibiting maintenance of grade across the sill.	N/A	N/A			N/A			
	2a. Piping	Structures lacking any substantial flow underneath sills or arms.	N/A	N/A			N/A			
	3. Bank Protection	Bank erosion within the structures extent of influence does NOT exceed 15%.	N/A	N/A			N/A			
	4. Habitat	Pool forming structures maintaining ~ Max Pool Depth : Mean Bankfull Depth Ratio ≥ 1.6. Rootwads/logs providing some cover at base-flow.	N/A	N/A			N/A			

- Information Unavailable

N/A - Item does not apply.

Table 5 cont'd. Visual Stream Morphology Stability Assessment
Fletcher Mitigation Site (MY1) - Coates Branch Reach 1B - Restoration
Assessed Length 601 feet

Major Channel Category	Channel Sub-Category	Metric	Number Stable, Performing as Intended	Total Number in As-built	Number of Unstable Segments	Amount of Unstable Footage	% Stable, Performing as Intended	Number with Stabilizing Woody Vegetation	Footage with Stabilizing Woody Vegetation	Adjusted % for Stabilizing Woody Vegetation
1. 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	0	100%
				Totals	0	0	100%	0	0	100%
2. Engineered Structures	1. Overall Integrity	Structures physically intact with no dislodged boulders or logs.	N/A	N/A			N/A			
	2. Grade Control	Grade control structures exhibiting maintenance of grade across the sill.	N/A	N/A			N/A			
	2a. Piping	Structures lacking any substantial flow underneath sills or arms.	N/A	N/A			N/A			
	3. Bank Protection	Bank erosion within the structures extent of influence does NOT exceed 15%.	N/A	N/A			N/A			
	4. Habitat	Pool forming structures maintaining ~ Max Pool Depth : Mean Bankfull Depth Ratio ≥ 1.6. Rootwads/logs providing some cover at base-flow.	N/A	N/A			N/A			

- Information Unavailable

N/A - Item does not apply.

Table 5 cont'd. Visual Stream Morphology Stability Assessment
Fletcher Mitigation Site (MY1) - Coates Branch Reach 1C - Restoration
Assessed Length 708 feet

Major Channel Category	Channel Sub-Category	Metric	Number Stable, Performing as Intended	Total Number in As-built	Number of Unstable Segments	Amount of Unstable Footage	% Stable, Performing as Intended	Number with Stabilizing Woody Vegetation	Footage with Stabilizing Woody Vegetation	Adjusted % for Stabilizing Woody Vegetation
1. 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	0	100%
				Totals	0	0	100%	0	0	100%
2. Engineered Structures	1. Overall Integrity	Structures physically intact with no dislodged boulders or logs.	N/A	N/A			N/A			
	2. Grade Control	Grade control structures exhibiting maintenance of grade across the sill.	N/A	N/A			N/A			
	2a. Piping	Structures lacking any substantial flow underneath sills or arms.	N/A	N/A			N/A			
	3. Bank Protection	Bank erosion within the structures extent of influence does NOT exceed 15%.	N/A	N/A			N/A			
	4. Habitat	Pool forming structures maintaining ~ Max Pool Depth : Mean Bankfull Depth Ratio ≥ 1.6. Rootwads/logs providing some cover at base-flow.	N/A	N/A			N/A			

- Information Unavailable

N/A - Item does not apply.

Table 5 cont'd. Visual Stream Morphology Stability Assessment
Fletcher Mitigation Site (MY1) - Coates Branch Reach 1D - Restoration
Assessed Length 325 feet

Major Channel Category	Channel Sub-Category	Metric	Number Stable, Performing as Intended	Total Number in As-built	Number of Unstable Segments	Amount of Unstable Footage	% Stable, Performing as Intended	Number with Stabilizing Woody Vegetation	Footage with Stabilizing Woody Vegetation	Adjusted % for Stabilizing Woody Vegetation
1. 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	0	100%
				Totals	0	0	100%	0	0	100%
2. Engineered Structures	1. Overall Integrity	Structures physically intact with no dislodged boulders or logs.	N/A	N/A			N/A			
	2. Grade Control	Grade control structures exhibiting maintenance of grade across the sill.	N/A	N/A			N/A			
	2a. Piping	Structures lacking any substantial flow underneath sills or arms.	N/A	N/A			N/A			
	3. Bank Protection	Bank erosion within the structures extent of influence does NOT exceed 15%.	N/A	N/A			N/A			
	4. Habitat	Pool forming structures maintaining ~ Max Pool Depth : Mean Bankfull Depth Ratio ≥ 1.6. Rootwads/logs providing some cover at base-flow.	N/A	N/A			N/A			

- Information Unavailable

N/A - Item does not apply.

Table 5 cont'd. Visual Stream Morphology Stability Assessment
Fletcher Mitigation Site (MY1) - Weston Creek Reach 1A - Restoration
Assessed Length 1,982 feet

Major Channel Category	Channel Sub-Category	Metric	Number Stable, Performing as Intended	Total Number in As-built	Number of Unstable Segments	Amount of Unstable Footage	% Stable, Performing as Intended	Number with Stabilizing Woody Vegetation	Footage with Stabilizing Woody Vegetation	Adjusted % for Stabilizing Woody Vegetation
1. 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	0	100%
				Totals	0	0	100%	0	0	100%
2. Engineered Structures	1. Overall Integrity	Structures physically intact with no dislodged boulders or logs.	30	30			100%			
	2. Grade Control	Grade control structures exhibiting maintenance of grade across the sill.	30	30			100%			
	2a. Piping	Structures lacking any substantial flow underneath sills or arms.	30	30			100%			
	3. Bank Protection	Bank erosion within the structures extent of influence does NOT exceed 15%.	30	30			100%			
	4. Habitat	Pool forming structures maintaining ~ Max Pool Depth : Mean Bankfull Depth Ratio ≥ 1.6. Rootwads/logs providing some cover at base-flow.	30	30			100%			

- Information Unavailable

N/A - Item does not apply.

Table 5 cont'd. Visual Stream Morphology Stability Assessment
Fletcher Mitigation Site (MY1) - Weston Creek Reach 1B - Restoration
Assessed Length 825 feet

Major Channel Category	Channel Sub-Category	Metric	Number Stable, Performing as Intended	Total Number in As-built	Number of Unstable Segments	Amount of Unstable Footage	% Stable, Performing as Intended	Number with Stabilizing Woody Vegetation	Footage with Stabilizing Woody Vegetation	Adjusted % for Stabilizing Woody Vegetation
1. 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	0	100%
				Totals	0	0	100%	0	0	100%
2. Engineered Structures	1. Overall Integrity	Structures physically intact with no dislodged boulders or logs.	10	10			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%.	10	10			100%			
	4. Habitat	Pool forming structures maintaining ~ Max Pool Depth : Mean Bankfull Depth Ratio ≥ 1.6. Rootwads/logs providing some cover at base-flow.	10	10			100%			

- Information Unavailable

N/A - Item does not apply.

Table 6. Vegetation Condition Assessment
Fletcher Creek Restoration Site (MY1)

Planted Acreage : 32.3

Vegetation Category	Definitions	CCPV Depiction	Number of Polygons	Combined Acreage	% of Planted Acreage
1. Bare Areas	Very limited cover of both woody and herbaceous material.	Brown Stipple	0	0.00	0%
2. Low Stem Density Areas	Woody stem densities clearly below target levels based on MY3, 4, or 5 stem count criteria.	Red Stipple	0	0.00	0%
		Totals	0	0.00	0%
3. Areas of Poor Growth Rates or Vigor	Areas with woody stems of a size class that are obviously small given the monitoring year.	N/A	0	0.00	0%
		Cumulative Totals	0	0.00	0%

Easement Acreage : 34.8

Vegetation Category	Definitions	CCPV Depiction	Number of Polygons	Combined Acreage	% of Easement Acreage
4. Invasive Areas of Concern	Areas or points (if too small to render as polygons at map scale).	**Cross Hatch (Yellow - Present)**	6	1.14	3%
		Cross Hatch (Red - Dense)	0	0.00	0%
5. Easement Encroachment Areas	Areas or points (if too small to render as polygons at map scale).	N/A	0	0.00	0%

N/A - Item does not apply.

Permanent Photo Stations

Fletcher Creek 1A – Permanent Photo Station 1
Looking Upstream

Fletcher Creek 1A – Permanent Photo Station 1
Looking Downstream

Fletcher Creek 1B – Permanent Photo Station 2
Looking Upstream

Fletcher Creek 1B – Permanent Photo Station 2
Looking Downstream

Fletcher Creek 1B – Permanent Photo Station 3
Looking Upstream

Fletcher Creek 1C – Permanent Photo Station 3
Looking Downstream

Raccoon Branch 1D – Permanent Photo Station 3
Looking Upstream

Fletcher Creek 1C – Permanent Photo Station 4
Looking Upstream

Fletcher Creek 1C – Permanent Photo Station 4
Looking Downstream

Fletcher Creek 1C – Permanent Photo Station 5
Looking Upstream from Crossing

Fletcher Creek 1C – Permanent Photo Station 5
Looking Downstream from Crossing

Fletcher Creek 1C – Permanent Photo Station 6
Looking Upstream

Fletcher Creek 1C – Permanent Photo Station 6
Looking Downstream

Fletcher Creek 1C – Permanent Photo Station 7
Looking Upstream

Fletcher Creek 2A - Permanent Photo Station 7
Looking Downstream

Coates Branch 1D – Permanent Photo Station 7
Looking Upstream

Fletcher Creek 2A – Permanent Photo Station 8
Looking Upstream

Fletcher Creek 2A – Permanent Photo Station 8
Looking Downstream

Fletcher Creek 2A – Permanent Photo Station 9
Looking Upstream

Fletcher Creek 2A – Permanent Photo Station 9
Looking Downstream

Fletcher Creek 2A – Permanent Photo Station 10
Looking Upstream

Fletcher Creek 2A – Permanent Photo Station 10
Looking Downstream

Fletcher Creek 2A – Permanent Photo Station 11
Looking Upstream

Fletcher Creek 2B – Permanent Photo Station 12
Looking Downstream

Fletcher Creek 2B – Permanent Photo Station 13
Looking Upstream from Crossing

Fletcher Creek 2B – Permanent Photo Station 13
Looking Downstream from Crossing

Fletcher Creek 2B – Permanent Photo Station 14
Looking Upstream

Fletcher Creek 2B – Permanent Photo Station 14
Looking Downstream

Fletcher Creek 2B – Permanent Photo Station 15
Looking Upstream

Fletcher Creek 2B – Permanent Photo Station 15
Looking Downstream

Fletcher Creek 2B – Permanent Photo Station 16
Looking Upstream

Weston Creek 1A – Permanent Photo Station 17
Looking Downstream

Weston Creek 1A – Permanent Photo Station 18
Looking Upstream

Weston Creek 1A – Permanent Photo Station 18
Looking Downstream

Weston Creek 1A – Permanent Photo Station 19
Looking Upstream

Weston Creek 1A – Permanent Photo Station 19
Looking Downstream

Weston Creek 1B – Permanent Photo Station 20
Looking Upstream

Weston Creek 1B – Permanent Photo Station 20
Looking Downstream

Weston Creek 1D – Permanent Photo Station 21
Looking Upstream

Raccoon Branch 1A – Permanent Photo Station 22
Looking Downstream

Pine Branch – Permanent Photo Station 23
Looking Downstream

Raccoon Branch 1A – Permanent Photo Station 24
Looking Upstream

Raccoon Branch 1B – Permanent Photo Station 24
Looking Downstream

Pine Branch – Permanent Photo Station 24
Looking Upstream

Raccoon Branch 1B – Permanent Photo Station 25
Looking Upstream

Raccoon Branch 1C – Permanent Photo Station 25
Looking Downstream

Raccoon Branch 1C – Permanent Photo Station 26
Looking Upstream

Raccoon Branch 1D – Permanent Photo Station 26
Looking Downstream

Raccoon Branch 1D – Permanent Photo Station 27
Looking Upstream

Raccoon Branch 1D – Permanent Photo Station 27
Looking Downstream

Coates Branch 1A – Permanent Photo Station 28
Looking Downstream

Coates Branch 1B – Permanent Photo Station 29
Looking Downstream

Coates Branch 1B – Permanent Photo Station 30
Looking Upstream

Coates Branch 1B – Permanent Photo Station 30
Looking Downstream

Coates Branch 1B – Permanent Photo Station 31
Looking Upstream from Crossing

Coates Branch 1C – Permanent Photo Station 31
Looking Downstream from Crossing

Coates Branch 1C – Permanent Photo Station 32
Looking Upstream

Coates Branch 1C – Permanent Photo Station 32
Looking Downstream

Coates Branch 1D – Permanent Photo Station 33
Looking Upstream

Coates Branch 1D – Permanent Photo Station 33
Looking Downstream

Vegetation Plot Photos

Vegetation Monitoring Plot 1

Vegetation Monitoring Plot 2

Vegetation Monitoring Plot 3

Vegetation Monitoring Plot 4

Vegetation Monitoring Plot 5

Vegetation Monitoring Plot 6

Vegetation Monitoring Plot 7

Vegetation Monitoring Plot 8

Vegetation Monitoring Plot 9

Vegetation Monitoring Plot 10

Vegetation Monitoring Plot 11

Vegetation Monitoring Plot 12

Vegetation Monitoring Plot 13

Vegetation Monitoring Plot 14

Vegetation Monitoring Plot 15

Vegetation Monitoring Plot 16

Vegetation Monitoring Plot 17

Vegetation Monitoring Plot 18

Vegetation Monitoring Plot 19

Vegetation Monitoring Plot 20

Vegetation Monitoring Plot 21

Vegetation Monitoring Plot 22

Vegetation Monitoring Plot 23

Vegetation Monitoring Plot 24

Vegetation Monitoring Plot 25

Vegetation Monitoring Plot 26

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Appendix C
Vegetation Plot Data

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Table 7a. Current Plot Data MY1 2020
Fletcher Mitigation Site
Current Plot Data (MY1 2020)

Scientific Name	Common Name	Species Type	100004-01-0001			100004-01-0002			100004-01-0003			100004-01-0004			100004-01-0005			100004-01-0006			100004-01-0007			100004-01-0008			100004-01-0009			100004-01-0010			100004-01-0011			100004-01-0012			100004-01-0013			100004-01-0014			100004-01-0015		
			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	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 negundo	Box Elder	Tree	1	1	36	3	3	3	2	2	25	3	3	3			12				3	3	3	3	3	3				6	6	6	1	1	1	3	3	3	2	2	9	2	2	4	2	2	2
Acer rubrum	Red Maple	Tree																																							4			3				
Aronia arbutifolia	Red Chokeberry	Shrub																																													
Asimina triloba	Common Pawpaw	Shrub Tree																																													
Betula nigra	River Birch	Tree	1	1	1	4	4	4	2	2	2	2	2	2										1	1	1	2	2	2	1	1	1	4	4	4	5	5	46	5	5	64	4	4	4	6	6	6
Carpinus caroliniana	Ironwood	Shrub Tree							1	1	1				1	1	1							1	1	1	4	4	4							1	1	1				2	2	2	4	4	4
Cephalanthus occidentali	Buttonbush	Shrub Tree	4	4	4				1	1	1	5	5	5	2	2	2	4	4	4																											
Cornus amomum	Silky Dogwood	Shrub Tree	3	3	3				4	4	4	3	3	3	5	5	5	5	5	5	2	2	2	1	1	1							3	3	3										2	2	2
Crataegus	Hawthorn	Shrub Tree																																												
Fraxinus pennsylvanica	Green Ash	Tree	3	3	3	3	3	3	3	3	3													6	6	6	2	2	2	3	3	3	1	1	1	1	1	1	2	2	2	2	2	2	4	4	4
Hamamelis virginiana	Witch Hazel	Shrub Tree	1	1	1																																										
Ilex opaca	American Holly	Shrub Tree																																												
Juglans nigra	Black Walnut	Tree																																							2						
Lindera benzoin	Northern Spicebush	Shrub Tree																												1	1	1														
Liquidambar styraciflua	Sweet Gum	Tree										1	1	1	1	1	1																													
Liriodendron tulipifera	Yellow Poplar	Tree				3	3	3													1	1	1	2	2	2	3	3	3				1	1	1				1	1	17			5	2	2	2
Pinus virginiana	Virginia Pine	Tree																																												1
Platanus occidentalis	Sycamore	Tree			24	4	4	4						4	1	1	1							3	3	3	5	5	5	6	6	6	4	4	4				3	3	20	6	6	6			2
Prunus serotina	Black Cherry	Shrub Tree																																												
Quercus alba	White Oak	Tree																																												3
Quercus falcata	Southern Red Oak	Tree																																												1
Quercus nigra	Water Oak	Tree																																										3			
Quercus rubra	Northern Red Oak	Tree																																												
Quercus velutina	Black Oak	Tree																																												2
Robinia pseudoacacia	Black Locust	Tree						3																																						
Salix caprea	Goat Willow	Shrub Tree																																												
Salix nigra	Black Willow	Tree																																												
Salix sericea	Silky Willow	Shrub Tree																																							1	1	1						
Sambucus canadensis	Common Elderberry	Shrub Tree																																												
		Stem count	13	13	72	17	17	20	13	13	36	14	14	18	10	10	22	9	9	9	6	6	6	17	17	17	16	16	16	17	17	17	14	14	14	10	10	51	14	14	119	16	16	29	20	20	29
		size (ares)	1			1			1			1			1			1			1			1			1			1			1			1			1			1			1		
		size (ACRES)	0.02			0.02			0.02			0.02			0.02			0.02			0.02			0.02			0.02			0.02			0.02			0.02			0.02			0.02			0.02		
		Species count	6	6	7	5	5	6	6	6	6	5	5	6	5	5	6	2	2	2	3	3	3	7	7	7	5	5	5	5	5	5	6	6	6	4	4	4	6	6	8	5	5	8	6	6	11
		Stems per ACRE	526.1	526.1	2914	688	688	809.4	526.1	526.1	1457	566.6	566.6	728.4	404.7	404.7	890.3	364.2	364.2	364.2	242.8	242.8	242.8	688	688	688	647.5	647.5	647.5	688	688	688	566.6	566.6	566.6	404.7	404.7	2064	566.6	566.6	4816	647.5	647.5	1174	809.4	809.4	1174

Color for Density

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 7a. cont. Current Plot Data MY1 2020
Fletcher Mitigation Site

Current Plot Data (MY1 2020)

Scientific Name	Common Name	Species Type	100004-01-0016			100004-01-0017			100004-01-0018			100004-01-0019			100004-01-0020			100004-01-0021		
			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 negundo	Box Elder	Tree				3	3	3	5	5	5	2	2	2				3	3	3
Acer rubrum	Red Maple	Tree			10												10			
Aronia arbutifolia	Red Chokeberry	Shrub																1	1	1
Asimina triloba	Common Pawpaw	Shrub Tree	1	1	1							1	1	1	3	3	3	2	2	2
Betula nigra	River Birch	Tree	1	1	1	1	1	1	1	1	1				4	4	4	6	6	8
Carpinus caroliniana	Ironwood	Shrub Tree	1	1	1	1	1	1	4	4	4	4	4	4						
Cephalanthus occidentali	Buttonbush	Shrub Tree	3	3	3							2	2	2				1	1	1
Cornus amomum	Silky Dogwood	Shrub Tree																1	1	1
Crataegus	Hawthorn	Shrub Tree																		
Fraxinus pennsylvanica	Green Ash	Tree	3	3	3	4	4	4	2	2	2	1	1	1	3	3	3	2	2	2
Hamamelis virginiana	Witch Hazel	Shrub Tree																		
Ilex opaca	American Holly	Shrub Tree																		
Juglans nigra	Black Walnut	Tree																		
Lindera benzoin	Northern Spicebush	Shrub Tree										1	1	1				1	1	1
Liquidambar styraciflua	Sweet Gum	Tree																		
Liriodendron tulipifera	Yellow Poplar	Tree	1	1	1							2	2	2	3	3	3			
Pinus virginiana	Virginia Pine	Tree																		
Platanus occidentalis	Sycamore	Tree	1	1	1	3	3	3	1	1	1	4	4	4			8	1	1	8
Prunus serotina	Black Cherry	Shrub Tree																		
Quercus alba	White Oak	Tree																		
Quercus falcata	Southern Red Oak	Tree																		
Quercus nigra	Water Oak	Tree																		
Quercus rubra	Northern Red Oak	Tree																		
Quercus velutina	Black Oak	Tree																		
Robinia pseudoacacia	Black Locust	Tree																		
Salix caprea	Goat Willow	Shrub Tree																		12
Salix nigra	Black Willow	Tree												3						21
Salix sericea	Silky Willow	Shrub Tree	2	2	2	1	1	1				2	2	2	1	1	1			
Sambucus canadensis	Common Elderberry	Shrub Tree	1	1	6									1						
		Stem count	14	14	29	13	13	13	13	13	13	19	19	23	14	14	32	18	18	60
		size (ares)	1			1			1			1			1			1		
		size (ACRES)	0.02			0.02			0.02			0.02			0.02			0.02		
		Species count	9	9	10	6	6	6	5	5	5	9	9	11	5	5	7	9	9	11
		Stems per ACRE	566.6	566.6	1174	526.1	526.1	526.1	526.1	526.1	526.1	768.9	768.9	930.8	566.6	566.6	1295	728.4	728.4	2428

Scientific Name	Common Name	Species Type	100004-01-0022			100004-01-0023			100004-01-0024			100004-01-0025			100004-01-0026			Annual Means: MY1 (2020)			*Pre-MY1 (2019)			MY0 (2019)		
			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
Acer negundo	Box Elder	Tree	4	4	4													48	48	127	44	44	44	66	66	66
Acer rubrum	Red Maple	Tree																		27						
Aronia arbutifolia	Red Chokeberry	Shrub																1	1	1	4	4	4	4	4	4
Asimina triloba	Common Pawpaw	Shrub Tree				1	1	1	2	2	2	1	1	1	6	6	6	17	17	17	24	24	24	28	28	28
Betula nigra	River Birch	Tree	1	1	1													51	51	153	43	43	52	64	64	64
Carpinus caroliniana	Ironwood	Shrub Tree				12	12	12										36	36	36	37	37	37	52	52	52
Cephalanthus occidentali	Buttonbush	Shrub Tree							1	1	1	1	1	1				24	24	24	13	13	13	14	14	14
Cornus amomum	Silky Dogwood	Shrub Tree				1	1	1	1	1	1	4	4	4				35	35	35	14	14	14	20	20	20
Crataegus	Hawthorn	Shrub Tree												4				0	0	4						
Fraxinus pennsylvanica	Green Ash	Tree	2	2	2				2	2	2							49	49	49	44	44	44	67	67	67
Hamamelis virginiana	Witch Hazel	Shrub Tree																1	1	1			2			
Ilex opaca	American Holly	Shrub Tree																					4			
Juglans nigra	Black Walnut	Tree																		2						
Lindera benzoin	Northern Spicebush	Shrub Tree	1	1	1				4	4	4	1	1	1				9	9	9	16	16	16	25	25	25
Liquidambar styraciflua	Sweet Gum	Tree																2	2	2						
Liriodendron tulipifera	Yellow Poplar	Tree	1	1	1													20	20	41	15	15	16	31	31	31
Pinus virginiana	Virginia Pine	Tree																		1						
Platanus occidentalis	Sycamore	Tree	7	7	7													49	49	111	43	43	45	60	60	60
Prunus serotina	Black Cherry	Shrub Tree																					1			
Quercus alba	White Oak	Tree												2						5						
Quercus falcata	Southern Red Oak	Tree																		1			3			
Quercus nigra	Water Oak	Tree																		3						
Quercus rubra	Northern Red Oak	Tree												2						2						
Quercus velutina	Black Oak	Tree												16						18			1			
Robinia pseudoacacia	Black Locust	Tree																		3						
Salix caprea	Goat Willow	Shrub Tree																		12						
Salix nigra	Black Willow	Tree																		24			31			
Salix sericea	Silky Willow	Shrub Tree	1	1	1										2	2	2	10	10	10	10	10	11	11	11	11
Sambucus canadensis	Common Elderberry	Shrub Tree																1	1	7	3	3	4	11	11	11
		Stem count	17	17	17	14	14	14	10	10	10	7	7	31	8	8	8	353	353	725	310	310	366	453	453	453
		size (ares)	1			1			1			1			1			26			19			26		
		size (ACRES)	0.02			0.02			0.02			0.02			0.02			0.64			0.47			0.64		
		Species count	7	7	7	3	3	3	5	5	5	4	4	8	2	2	2	16	16	27	16	16	16	13	13	13
		Stems per ACRE	688	688	688	566.6	566.6	566.6	404.7	404.7	404.7	283.3	283.3	1255	323.7	323.7	323.7	549.4	549.4	1128	660.3	660.3	660.3	705.1	705.1	705.1

* Annual means calculated upon data collected from vegetation plot numbers 8-26 in 2019 during adaptive management.

Color for Density

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%

Table7b. Pre-MY1 Vegetation Plot Data 2019

Fletcher Mitigation Site

			Plot Data (Pre-MY1 2019)																												
			Plot 8			Plot 9			Plot 10			Plot 11			Plot 12			Plot 13			Plot 14			Plot 15			Plot 16			Plot 17		
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	PnoLS	P-all	T	PnoLS	P-all	T	PnoLS	P-all	T	PnoLS	P-all	T
Acer negundo	Box Elder	Tree	3	3	3				7	7	7	1	1	1	4	4	4	2	2	2	1	1	1	3	3	3				3	3	3
Aronia arbutifolia	Red Chokeberry	Shrub																													
Asimina triloba	Common Pawpaw, Indian-banana	Shrub Tree																									1	1	1			
Betula nigra	River Birch, Red Birch	Tree	1	1	1	2	2	2	1	1	1	4	4	4	4	4	4	5	5	14	4	4	4	6	6	6	2	2	2	1	1	1
Carpinus caroliniana	Ironwood	Shrub Tree	2	2	2	3	3	3							1	1	1				2	2	2	4	4	4	3	3	3	1	1	1
Cephalanthus occidentalis	Buttonbush	Shrub Tree																									4	4	4			
Cornus amomum	Silky Dogwood	Shrub Tree	1	1	1							4	4	4										2	2	2						
Fraxinus pennsylvanica	Green Ash, Red Ash	Tree	6	6	6	1	1	1	3	3	3	3	3	3	1	1	1	2	2	2	3	3	3	4	4	4	3	3	3	4	4	4
Gleditsia triacanthos	Honey Locust	Shrub Tree																														
Ilex opaca	American Holly, Christmas Holly	Shrub Tree																														
Lindera benzoin	Northern Spicebush	Shrub Tree				2	2	2	1	1	1																					
Liriodendron tulipifera	Yellow Poplar	Tree	2	2	2	3	3	3				1	1	1				1	1	1				2	2	2	1	1	1			
Platanus occidentalis	Sycamore, Plane-tree	Tree	3	3	3	5	5	5	6	6	6	4	4	4				3	3	5	6	6	6				1	1	1	2	2	2
Prunus serotina	Black Cherry	Shrub Tree																														
Quercus falcata	Spanish Oak, Southern Red Oak	Tree												3																		
Quercus velutina	Black Oak	Tree																														
Salix nigra	Black Willow	Tree																														
Salix sericea	Silky Willow	Shrub Tree																1	1	1							2	2	2	1	1	1
Sambucus canadensis	Common Elderberry	Shrub Tree																									2	2	2	1	1	1
		Stem count	18	18	18	16	16	16	18	18	18	17	17	20	10	10	10	14	14	25	16	16	16	21	21	21	19	19	19	13	13	13
		size (ares)	1			1			1			1			1			1			1			1			1			1		
		size (ACRES)	0.02			0.02			0.02			0.02			0.02			0.02			0.02			0.02			0.02			0.02		
		Species count	7	7	7	6	6	6	5	5	5	6	6	7	4	4	4	6	6	6	5	5	5	6	6	6	9	9	9	7	7	7
		Stems per ACRE	728.4	728.4	728.4	647.5	647.5	647.5	728.4	728.4	728.4	688	688	809.4	404.7	404.7	404.7	566.6	566.6	1012	647.5	647.5	647.5	849.8	849.8	849.8	768.9	768.9	768.9	526.1	526.1	526.1

Color for Density

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%

Table7b Fletcher Vegetation Plots cont. (Pre-MY1) 2019

Fletcher Mitigation Site

			Plot Data (Pre-MY1 2019)																									Annual Means		
			Plot 18			Plot 19			Plot 20			Plot 21			Plot 22			Plot 23			Plot 24			Plot 25			Plot 26			Pre MY1 (2019)		
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	PnoLS	P-all	T	PnoLS	P-all	T	PnoLS	P-all	T	PnoLS	P-all	T
Acer negundo	Box elder	Tree	10	10	10	2	2	2	1	1	1	3	3	3	4	4	4													44	44	44
Aronia arbutifolia	Red Chokeberry	Shrub										1	1	1													3	3	3	4	4	4
Asimina triloba	Common Pawpaw, Indian-banana	Shrub Tree				1	1	1	5	5	5	2	2	2				2	2	2	3	3	3	3	3	3	7	7	7	24	24	24
Betula nigra	River Birch, Red Birch	Tree	2	2	2				4	4	4	6	6	6	1	1	1													43	43	52
Carpinus caroliniana	Ironwood	Shrub Tree	4	4	4	4	4	4										12	12	12							1	1	1	37	37	37
Cephalanthus occidentalis	Buttonbush	Shrub Tree				2	2	2				1	1	1				1	1	1	1	1	1	1	1	1	3	3	3	13	13	13
Cornus amomum	Silky Dogwood	Shrub Tree										1	1	1				1	1	1	1	1	1	4	4	4				14	14	14
Fraxinus pennsylvanica	Green Ash, Red Ash	Tree	2	2	2	1	1	1	3	3	3	3	3	3	2	2	2				3	3	3							44	44	44
Gleditsia triacanthos	Honey Locust	Shrub Tree																					2									2
Ilex opaca	American Holly, Christmas Holly	Shrub Tree																					3						1			4
Lindera benzoin	Northern Spicebush	Shrub Tree				2	2	2				1	1	1	2	2	2				5	5	5	2	2	2	1	1	1	16	16	16
Liriodendron tulipifera	Yellow Poplar	Tree				2	2	2	3	3	3												1							15	15	16
Platanus occidentalis	Sycamore, Plane-tree	Tree	1	1	1	4	4	4				1	1	1	7	7	7													43	43	45
Prunus serotina	Black Cherry	Shrub Tree																					1									1
Quercus falcata	Spanish Oak, Southern Red Oak	Tree																														3
Quercus velutina	Black Oak	Tree																								1						1
Salix nigra	Black Willow	Tree			20									11																		31
Salix sericea	Silky Willow	Shrub Tree				2	2	2	1	1	1			1	1	1	1										2	2	2	10	10	11
Sambucus canadensis	Common Elderberry	Shrub Tree																					1							3	3	4
		Stem count	19	19	39	20	20	20	17	17	17	19	19	31	17	17	17	16	16	16	13	13	21	10	10	11	17	17	18	310	310	366
		size (ares)	1			1			1			1			1			1			1			1			1			19		
		size (ACRES)	0.02			0.02			0.02			0.02			0.02			0.02			0.02			0.02			0.02			0.47		
		Species count	5	5	6	9	9	9	6	6	6	9	9	11	6	6	6	4	4	4	5	5	10	4	4	5	6	6	7	13	13	19
		Stems per ACRE	768.9	768.9	1578	809.4	809.4	809.4	688	688	688	768.9	768.9	1255	688	688	688	647.5	647.5	647.5	526.1	526.1	849.8	404.7	404.7	445.2	688	688	728.4	660.3	660.3	779.6

Color for Density

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 9. Vegetation Plot Criteria Attainment Fletcher Creek Restoration Project		
Vegetation Plot ID	Vegetation Survival Threshold Met?	Tract Mean
1	Yes	92.3%
2	Yes	
3	Yes	
4	Yes	
5	Yes	
6	Yes	
7	No	
8	Yes	
9	Yes	
10	Yes	
11	Yes	
12	Yes	
13	Yes	
14	Yes	
15	Yes	
16	Yes	
17	Yes	
18	Yes	
19	Yes	
20	Yes	
21	Yes	
22	Yes	
23	Yes	
24	Yes	
25	No	
26	Yes	

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Appendix D
Stream Measurement and Geomorphology Data

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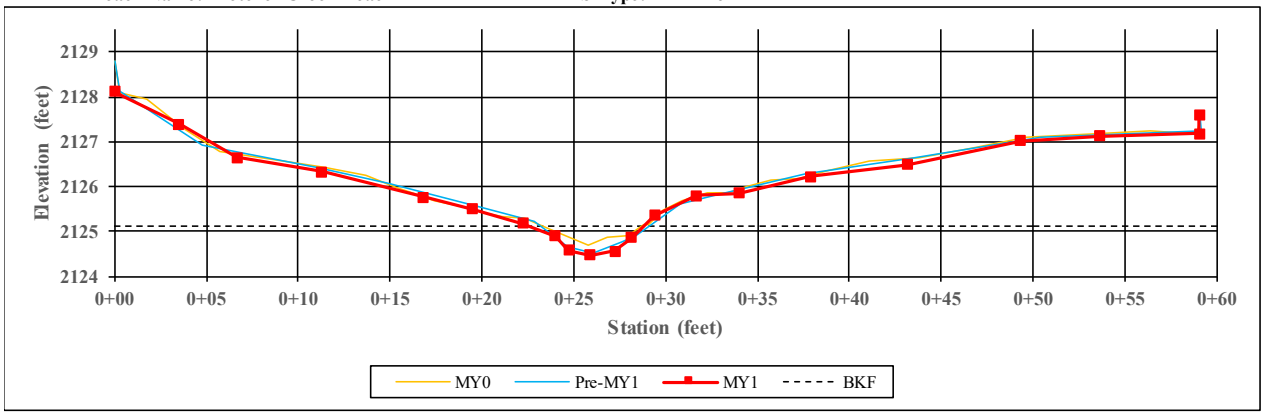
Project Name: Fletcher Mitigation site **XS Number:** 1 **Station:** 107+51

Reach Name: Fletcher Creek Reach 1B **XS Type:** Riffle



CHANNEL DIMENSIONS SUMMARY	MY0	*Pre-MY1	MY1	MY2	MY3	MY4	MY5	MY6
Bankful Width (ft)	7.1	6.1	6.1	-	-	-	-	-
Floodprone Width (ft)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Bankfull Mean Depth (ft)	0.3	0.4	0.4	-	-	-	-	-
Bankfull Max Depth (ft)	0.6	0.6	0.6	-	-	-	-	-
Bankfull Cross-Sectional Area (ft^2)	2.3	2.3	2.3	-	-	-	-	-
Width/Depth Ratio	21.4	16.4	15.9	-	-	-	-	-
Entrenchment Ratio	2.8	3.3	3.3	-	-	-	-	-
Bank Height Ratio	1.0	1.0	1.1	-	-	-	-	-

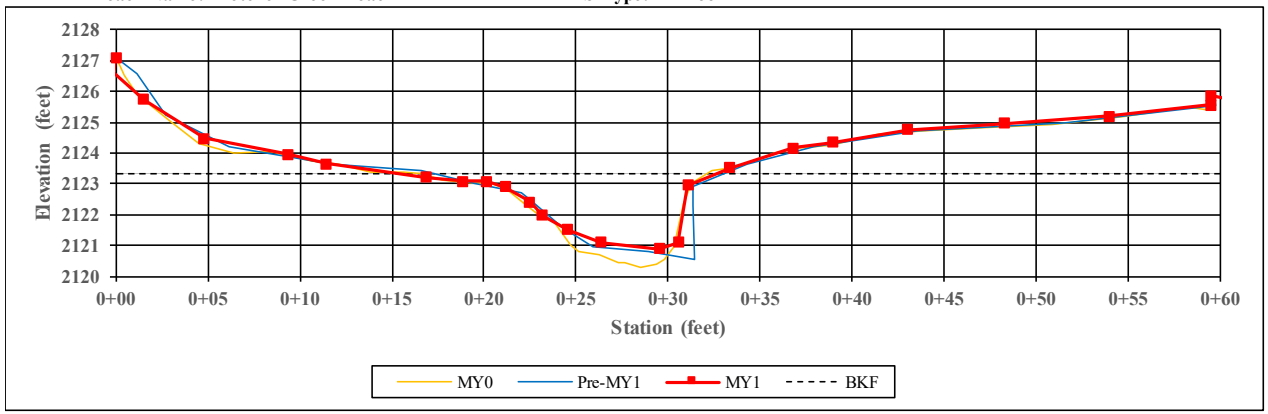
Left Descending Bank

Right Descending Bank

*** Data collected as part of 2019 monitoring year during adaptive management on Weston Reach 1A and 1B**

Project Name: Fletcher Mitigation site **XS Number:** 2 **Station:** 109+16

Reach Name: Fletcher Creek Reach 1B **XS Type:** Pool



CHANNEL DIMENSIONS SUMMARY	MY0	Pre-MY1	MY1	MY2	MY3	MY4	MY5	MY6
Bankful Width (ft)	10.9	11.9	12.2	-	-	-	-	-
Floodprone Width (ft)	60.0	60.0	60.0	-	-	-	-	-
Bankfull Mean Depth (ft)	1.7	1.5	1.5	-	-	-	-	-
Bankfull Max Depth (ft)	2.7	2.5	5.7	-	-	-	-	-
Bankfull Cross-Sectional Area (ft^2)	18.3	18.3	18.3	-	-	-	-	-
Width/Depth Ratio	6.5	7.8	8.1	-	-	-	-	-
Entrenchment Ratio	5.5	5.0	4.9	-	-	-	-	-
Bank Height Ratio	1.0	1.1	0.9	-	-	-	-	-

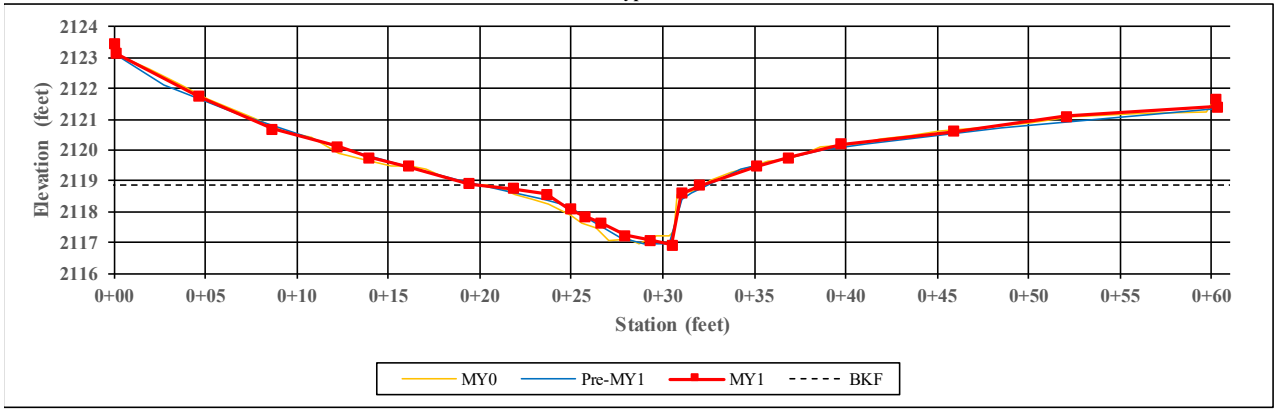
Left Descending Bank

Right Descending Bank

*** Data collected as part of 2019 monitoring year during adaptive management on Weston Reach 1A and 1B**

Project Name: Fletcher Mitigation site **XS Number:** 3 **Station:** 112+04

Reach Name: Fletcher Creek Reach 1C **XS Type:** P



CHANNEL DIMENSIONS SUMMARY	MY0	*Pre-MY1	MY1	MY2	MY3	MY4	MY5	MY6
Bankful Width (ft)	10.9	7.5	12.2	-	-	-	-	-
Floodprone Width (ft)	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0
Bankfull Mean Depth (ft)	0.9	1.4	0.8	-	-	-	-	-
Bankfull Max Depth (ft)	1.8	2.0	2.0	-	-	-	-	-
Bankfull Cross-Sectional Area (ft^2)	10.3	10.3	10.3	-	-	-	-	-
Width/Depth Ratio	11.5	5.5	14.5	-	-	-	-	-
Entrenchment Ratio	3.7	5.3	3.3	-	-	-	-	-
Bank Height Ratio	1.0	0.8	0.8	-	-	-	-	-

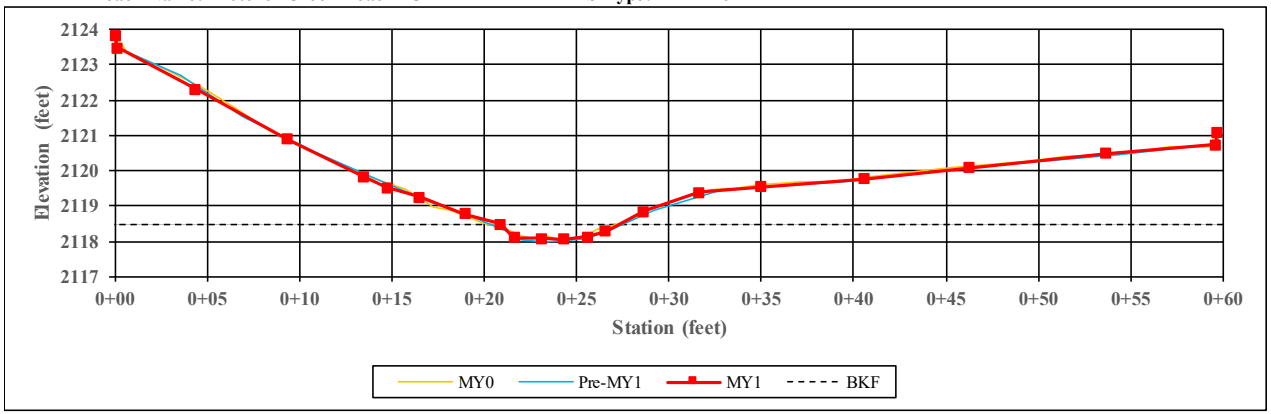
Left Descending Bank

Right Descending Bank

*** Data collected as part of 2019 monitoring year during adaptive management on Weston Reach 1A and 1B**

Project Name: Fletcher Mitigation site **XS Number:** 4 **Station:** 112+24

Reach Name: Fletcher Creek Reach 1C **XS Type:** Riffle



CHANNEL DIMENSIONS SUMMARY	MY0	*Pre-MY1	MY1	MY2	MY3	MY4	MY5	MY6
Bankful Width (ft)	7.6	6.1	6.5	-	-	-	-	-
Floodprone Width (ft)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Bankfull Mean Depth (ft)	0.3	0.3	0.3	-	-	-	-	-
Bankfull Max Depth (ft)	0.5	0.5	0.4	-	-	-	-	-
Bankfull Cross-Sectional Area (ft^2)	2.1	2.1	2.1	-	-	-	-	-
Width/Depth Ratio	27.6	18.2	19.8	-	-	-	-	-
Entrenchment Ratio	1.3	1.6	1.5	-	-	-	-	-
Bank Height Ratio	1.0	1.4	1.3	-	-	-	-	-

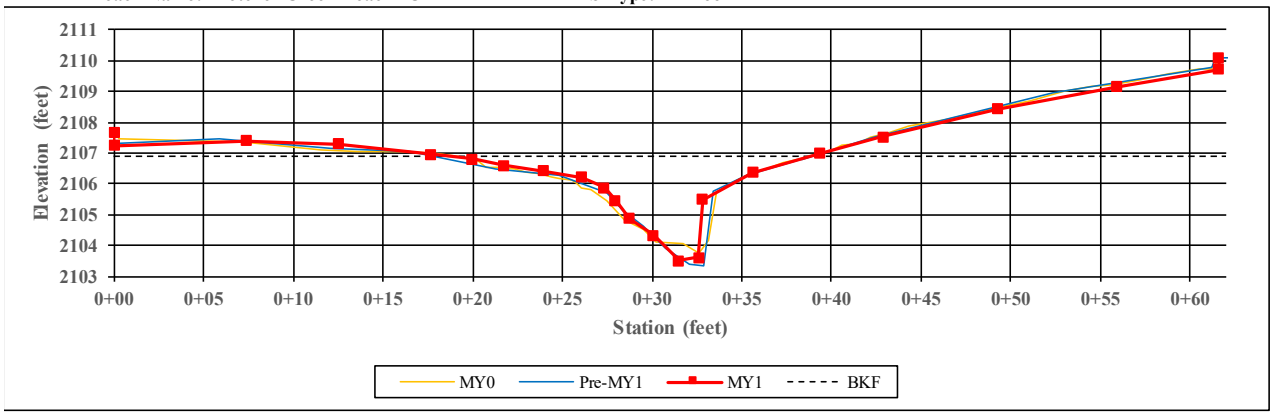
Left Descending Bank

Right Descending Bank

*** Data collected as part of 2019 monitoring year during adaptive management on Weston Reach 1A and 1B**

Project Name: Fletcher Mitigation site **XS Number:** 5 **Station:** 122+51

Reach Name: Fletcher Creek Reach 1C **XS Type:** Pool



CHANNEL DIMENSIONS SUMMARY	MY0	*Pre-MY1	MY1	MY2	MY3	MY4	MY5	MY6
Bankful Width (ft)	16.6	14.0	18.7	-	-	-	-	-
Floodprone Width (ft)	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0
Bankfull Mean Depth (ft)	1.2	1.5	1.1	-	-	-	-	-
Bankfull Max Depth (ft)	3.0	3.5	3.4	-	-	-	-	-
Bankfull Cross-Sectional Area (ft^2)	20.3	20.3	20.3	-	-	-	-	-
Width/Depth Ratio	13.7	9.6	17.2	-	-	-	-	-
Entrenchment Ratio	3.6	4.3	3.2	-	-	-	-	-
Bank Height Ratio	1.0	0.8	0.8	-	-	-	-	-

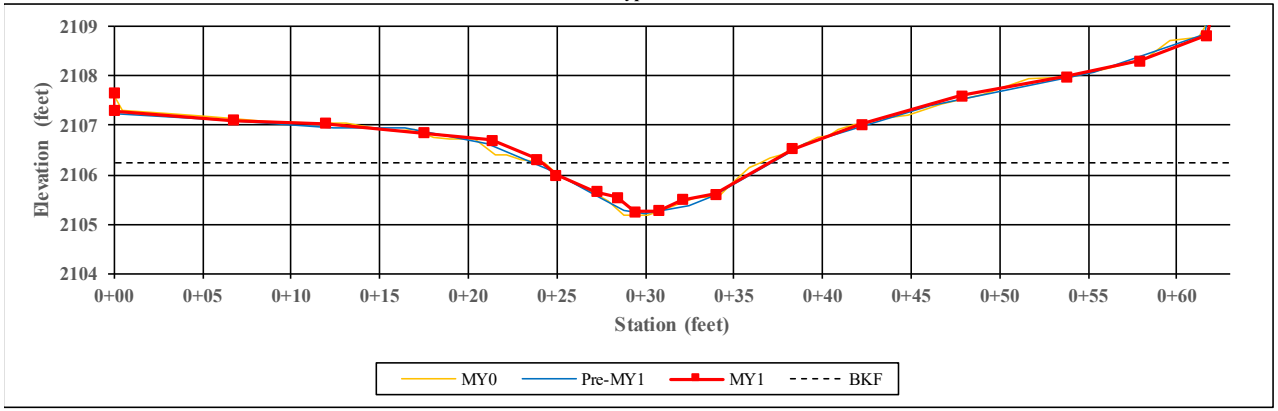
Left Descending Bank

Right Descending Bank

*** Data collected as part of 2019 monitoring year during adaptive management on Weston Reach 1A and 1B**

Project Name: Fletcher Mitigation site **XS Number:** 6 **Station:** 122+74

Reach Name: Fletcher Creek Reach 1C **XS Type:** Riffle



CHANNEL DIMENSIONS SUMMARY	MY0	*Pre-MY1	MY1	MY2	MY3	MY4	MY5	MY6
Bankful Width (ft)	12.0	12.9	13.0	-	-	-	-	-
Floodprone Width (ft)	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0
Bankfull Mean Depth (ft)	0.6	0.6	0.6	-	-	-	-	-
Bankfull Max Depth (ft)	1.0	1.0	1.0	-	-	-	-	-
Bankfull Cross-Sectional Area (ft^2)	7.5	7.5	7.5	-	-	-	-	-
Width/Depth Ratio	19.2	22.4	22.4	-	-	-	-	-
Entrenchment Ratio	4.2	3.9	3.9	-	-	-	-	-
Bank Height Ratio	1.0	1.4	1.4	-	-	-	-	-

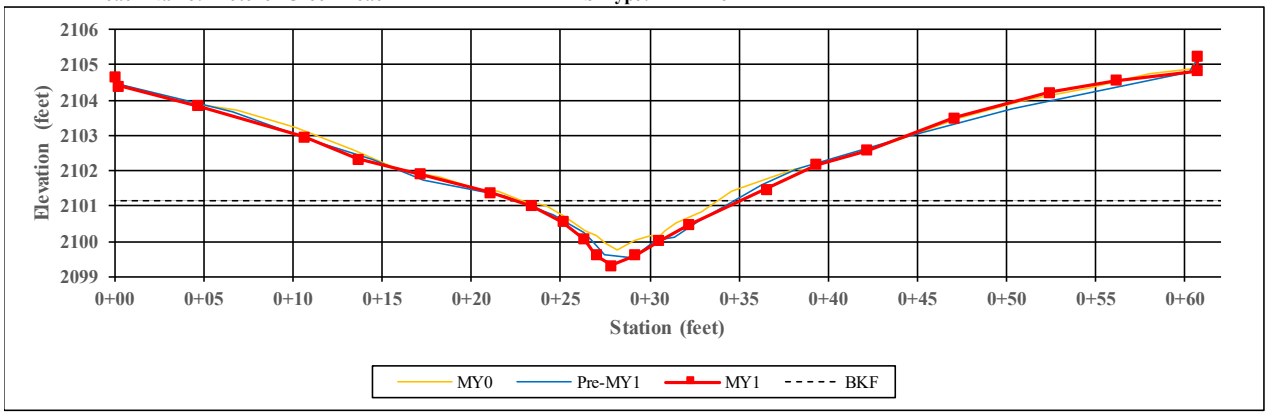
Left Descending Bank

Right Descending Bank

*** Data collected as part of 2019 monitoring year during adaptive management on Weston Reach 1A and 1B**

Project Name: Fletcher Mitigation site **XS Number:** 7 **Station:** 127+03

Reach Name: Fletcher Creek Reach 2A **XS Type:** Riffle



CHANNEL DIMENSIONS SUMMARY	MY0	*Pre-MY1	MY1	MY2	MY3	MY4	MY5	MY6
Bankful Width (ft)	13.1	10.6	11.7	-	-	-	-	-
Floodprone Width (ft)	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0
Bankfull Mean Depth (ft)	0.8	1.0	0.9	-	-	-	-	-
Bankfull Max Depth (ft)	1.6	1.7	1.8	-	-	-	-	-
Bankfull Cross-Sectional Area (ft^2)	10.4	10.4	10.4	-	-	-	-	-
Width/Depth Ratio	16.5	10.7	13.2	-	-	-	-	-
Entrenchment Ratio	2.7	3.3	3.0	-	-	-	-	-
Bank Height Ratio	1.0	1.0	0.9	-	-	-	-	-

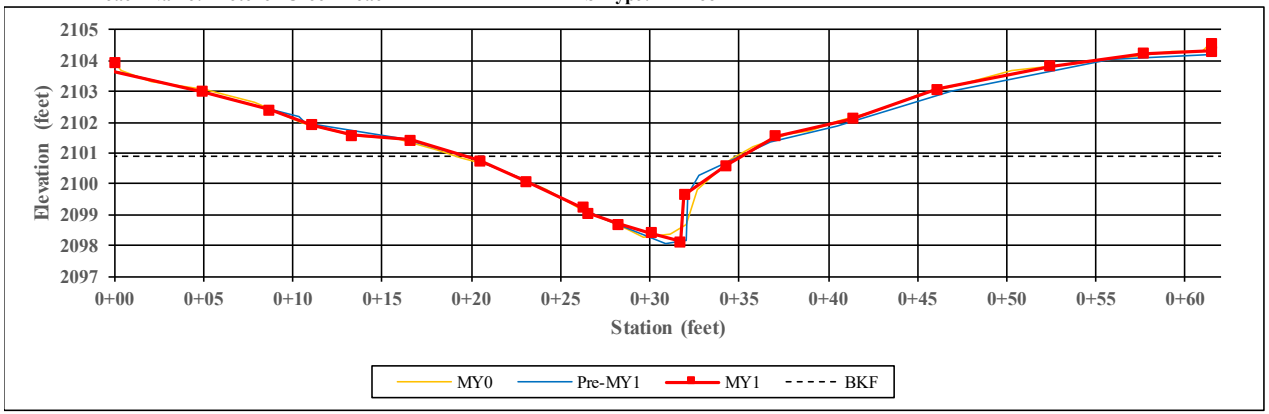
Left Descending Bank

Right Descending Bank

*** Data collected as part of 2019 monitoring year during adaptive management on Weston Reach 1A and 1B**

Project Name: Fletcher Mitigation site **XS Number:** 8 **Station:** 133+19

Reach Name: Fletcher Creek Reach 2A **XS Type:** Pool



CHANNEL DIMENSIONS SUMMARY	MY0	*Pre-MY1	MY1	MY2	MY3	MY4	MY5	MY6
Bankful Width (ft)	15.3	15.0	15.7	-	-	-	-	-
Floodprone Width (ft)	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0
Bankfull Mean Depth (ft)	1.3	1.4	1.3	-	-	-	-	-
Bankfull Max Depth (ft)	2.6	2.8	2.8	-	-	-	-	-
Bankfull Cross-Sectional Area (ft^2)	20.5	20.5	20.5	-	-	-	-	-
Width/Depth Ratio	11.4	11.0	12.0	-	-	-	-	-
Entrenchment Ratio	3.3	3.3	3.2	-	-	-	-	-
Bank Height Ratio	1.0	0.8	0.9	-	-	-	-	-

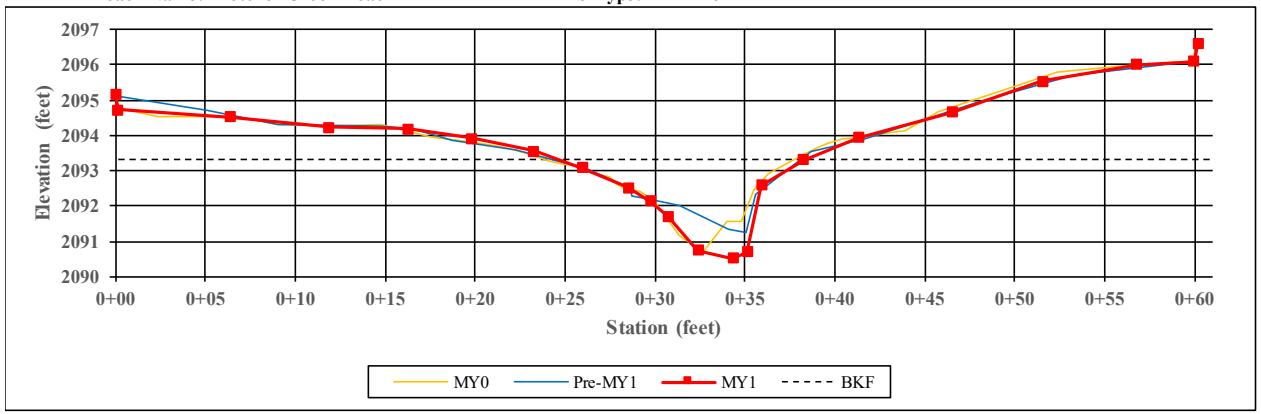
Looking Upstream

Right Descending Bank

*** Data collected as part of 2019 monitoring year during adaptive management on Weston Reach 1A and 1B**

Project Name: Fletcher Mitigation site **XS Number:** 9 **Station:** 133+19

Reach Name: Fletcher Creek Reach 2A **XS Type:** Riffle



CHANNEL DIMENSIONS SUMMARY	MY0	*Pre-MY1	MY1	MY2	MY3	MY4	MY5	MY6
Bankful Width (ft)	15.5	16.1	13.6	-	-	-	-	-
Floodprone Width (ft)	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0
Bankfull Mean Depth (ft)	1.1	1.0	1.2	-	-	-	-	-
Bankfull Max Depth (ft)	2.8	2.3	2.8	-	-	-	-	-
Bankfull Cross-Sectional Area (ft^2)	16.9	16.9	16.9	-	-	-	-	-
Width/Depth Ratio	14.2	15.4	10.9	-	-	-	-	-
Entrenchment Ratio	3.9	3.7	4.4	-	-	-	-	-
Bank Height Ratio	1.0	1.0	0.7	-	-	-	-	-

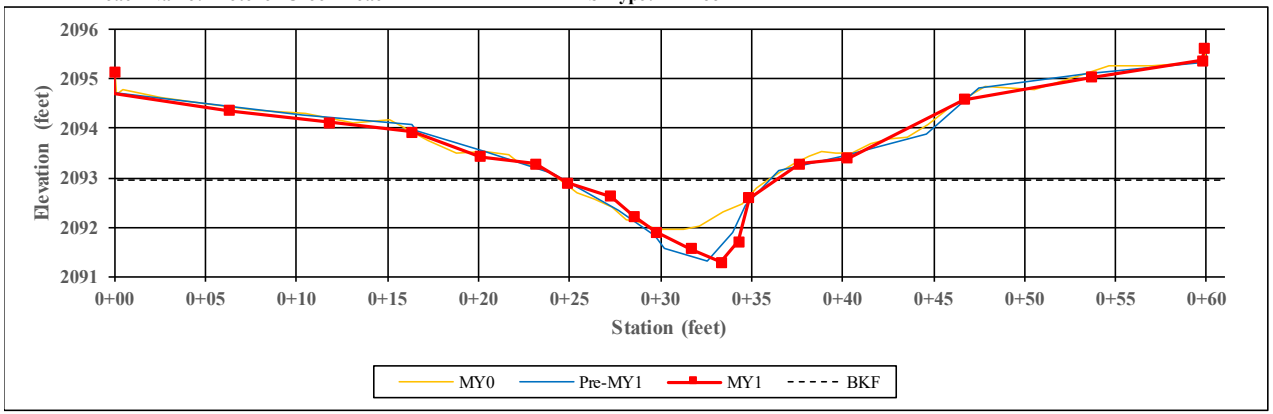
Left Descending Bank

Right Descending Bank

*** Data collected as part of 2019 monitoring year during adaptive management on Weston Reach 1A and 1B**

Project Name: Fletcher Mitigation site **XS Number:** 10 **Station:** 133+36

Reach Name: Fletcher Creek Reach 2A **XS Type:** Pool



CHANNEL DIMENSIONS SUMMARY	MY0	*Pre-MY1	MY1	MY2	MY3	MY4	MY5	MY6
Bankful Width (ft)	12.6	11.0	11.8	-	-	-	-	-
Floodprone Width (ft)	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0
Bankfull Mean Depth (ft)	0.7	0.8	0.8	-	-	-	-	-
Bankfull Max Depth (ft)	1.2	1.6	1.7	-	-	-	-	-
Bankfull Cross-Sectional Area (ft^2)	9.2	9.2	9.2	-	-	-	-	-
Width/Depth Ratio	17.4	13.2	15.0	-	-	-	-	-
Entrenchment Ratio	4.0	4.6	4.3	-	-	-	-	-
Bank Height Ratio	1.0	1.1	1.2	-	-	-	-	-

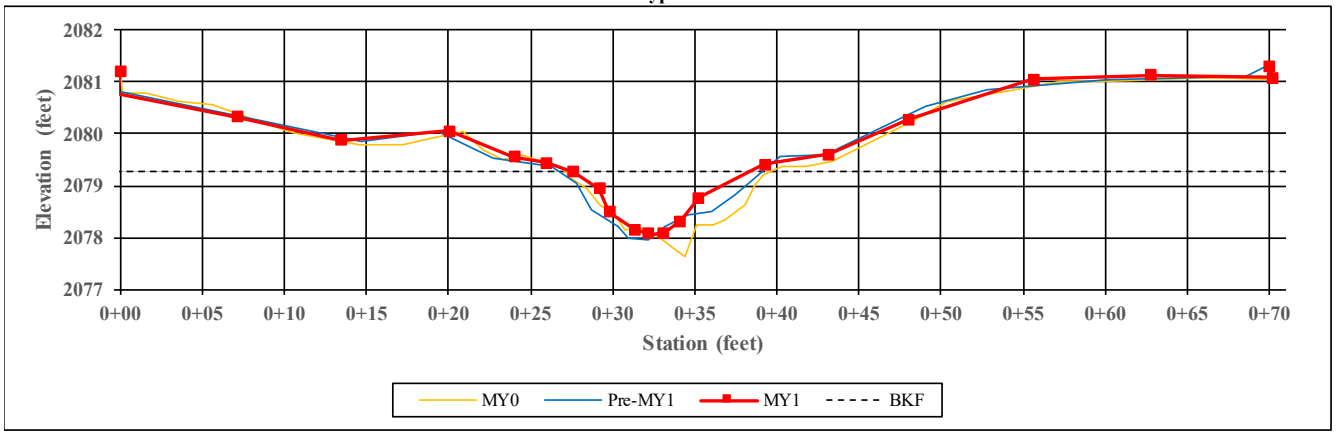
Left Descending Bank

Right Descending Bank

*** Data collected as part of 2019 monitoring year during adaptive management on Weston Reach 1A and 1B**

Project Name: Fletcher Mitigation site **XS Number:** 11 **Station:** 147+71

Reach Name: Fletcher Creek Reach 2B **XS Type:** Riffle



CHANNEL DIMENSIONS SUMMARY	MY0	*Pre-MY1	MY1	MY2	MY3	MY4	MY5	MY6
Bankful Width (ft)	10.2	9.6	11.2	-	-	-	-	-
Floodprone Width (ft)	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0
Bankfull Mean Depth (ft)	0.7	0.7	0.6	-	-	-	-	-
Bankfull Max Depth (ft)	1.3	1.1	1.2	-	-	-	-	-
Bankfull Cross-Sectional Area (ft^2)	7.1	7.1	7.1	-	-	-	-	-
Width/Depth Ratio	14.6	13.0	17.7	-	-	-	-	-
Entrenchment Ratio	3.9	4.2	3.6	-	-	-	-	-
Bank Height Ratio	1.0	1.1	1.0	-	-	-	-	-

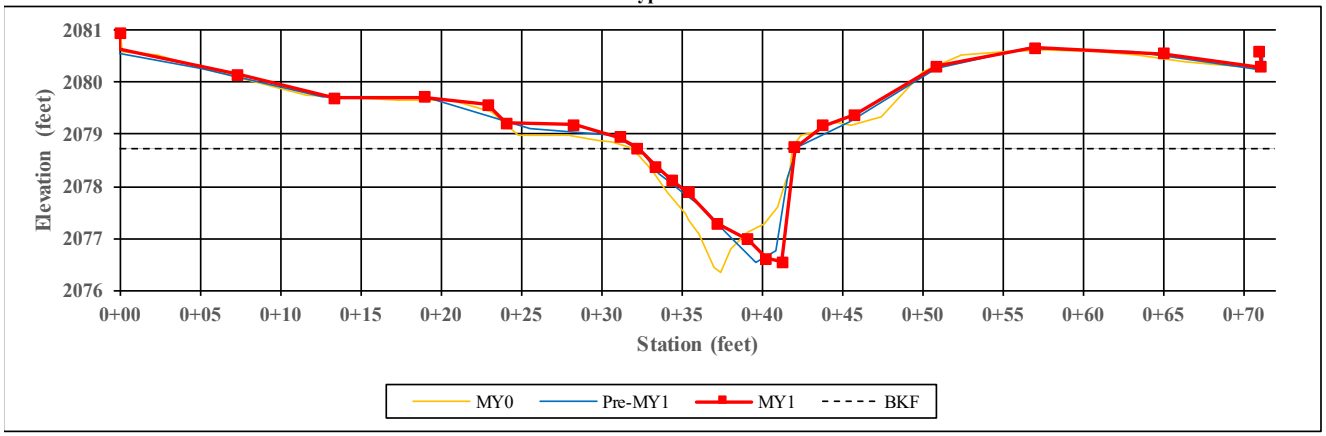
Left Descending Bank

Right Descending Bank

*** Data collected as part of 2019 monitoring year during adaptive management on Weston Reach 1A and 1B**

Project Name: Fletcher Mitigation site **XS Number:** 12 **Station:** 148+00

Reach Name: Fletcher Creek Reach 2B **XS Type:** Pool



CHANNEL DIMENSIONS SUMMARY	MY0	*Pre-MY1	MY1	MY2	MY3	MY4	MY5	MY6
Bankful Width (ft)	9.7	10.0	9.7	-	-	-	-	-
Floodprone Width (ft)	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0
Bankfull Mean Depth (ft)	1.2	1.2	1.2	-	-	-	-	-
Bankfull Max Depth (ft)	2.3	2.2	2.2	-	-	-	-	-
Bankfull Cross-Sectional Area (ft^2)	11.7	11.7	11.7	-	-	-	-	-
Width/Depth Ratio	8.1	8.5	8.1	-	-	-	-	-
Entrenchment Ratio	7.2	7.0	7.2	-	-	-	-	-
Bank Height Ratio	1.0	1.0	1.0	-	-	-	-	-

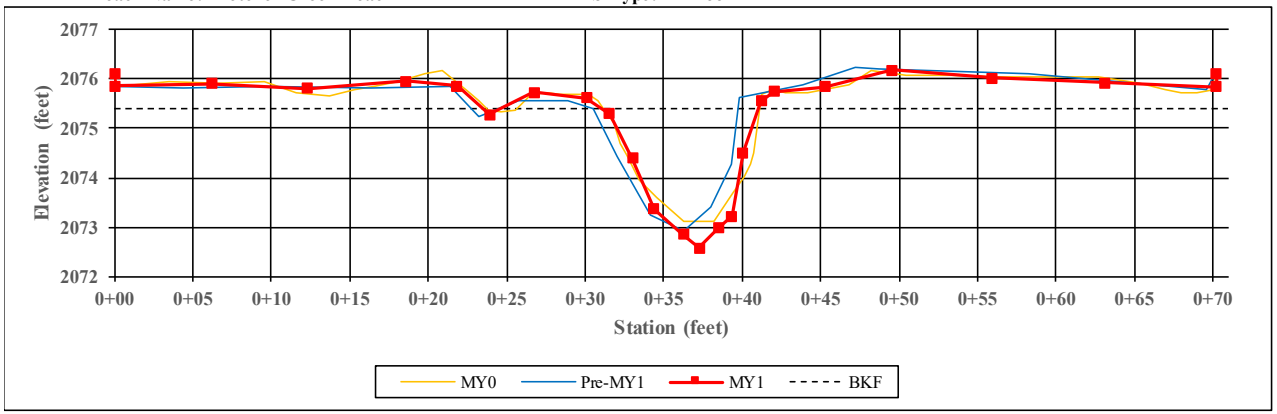
Left Descending Bank

Right Descending Bank

*** Data collected as part of 2019 monitoring year during adaptive management on Weston Reach 1A and 1B**

Project Name: Fletcher Mitigation site **XS Number:** 13 **Station:** 153+30

Reach Name: Fletcher Creek Reach 2B **XS Type:** Pool



CHANNEL DIMENSIONS SUMMARY	MY0	*Pre-MY1	MY1	MY2	MY3	MY4	MY5	MY6
Bankful Width (ft)	10.1	13.1	9.9	-	-	-	-	-
Floodprone Width (ft)	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0
Bankfull Mean Depth (ft)	1.6	1.2	1.7	-	-	-	-	-
Bankfull Max Depth (ft)	2.4	2.6	2.8	-	-	-	-	-
Bankfull Cross-Sectional Area (ft^2)	16.4	16.4	16.4	-	-	-	-	-
Width/Depth Ratio	6.2	10.5	6.0	-	-	-	-	-
Entrenchment Ratio	6.9	5.3	7.1	-	-	-	-	-
Bank Height Ratio	1.0	1.0	1.1	-	-	-	-	-

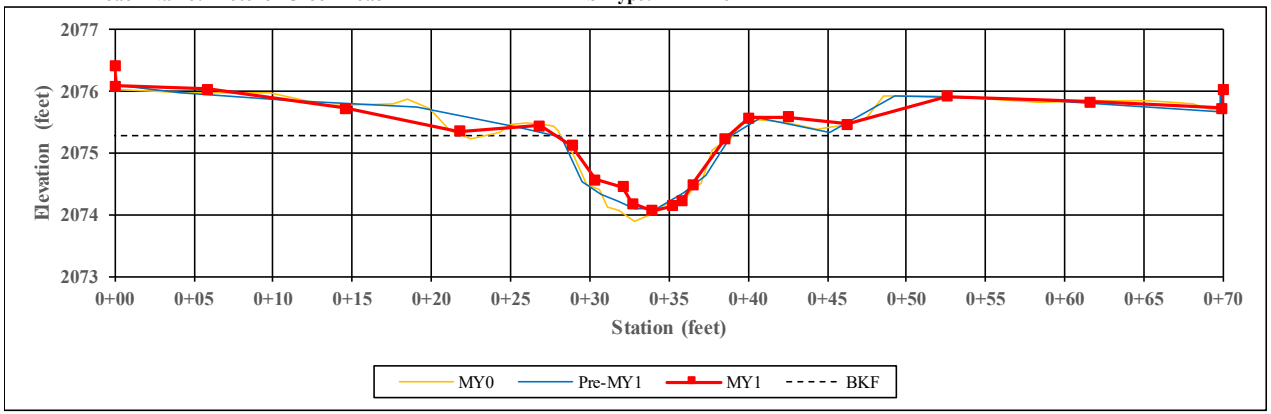
Left Descending Bank

Right Descending Bank

*** Data collected as part of 2019 monitoring year during adaptive management on Weston Reach 1A and 1B**

Project Name: Fletcher Mitigation site **XS Number:** 14 **Station:** 153+48

Reach Name: Fletcher Creek Reach 2B **XS Type:** Riffle



CHANNEL DIMENSIONS SUMMARY	MY0	*Pre-MY1	MY1	MY2	MY3	MY4	MY5	MY6
Bankful Width (ft)	9.8	10.3	9.7	-	-	-	-	-
Floodprone Width (ft)	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0
Bankfull Mean Depth (ft)	0.8	0.7	0.8	-	-	-	-	-
Bankfull Max Depth (ft)	1.2	1.1	1.2	-	-	-	-	-
Bankfull Cross-Sectional Area (ft^2)	7.6	7.6	7.6	-	-	-	-	-
Width/Depth Ratio	12.6	14.0	12.3	-	-	-	-	-
Entrenchment Ratio	7.1	6.8	7.2	-	-	-	-	-
Bank Height Ratio	1.0	1.1	1.1	-	-	-	-	-

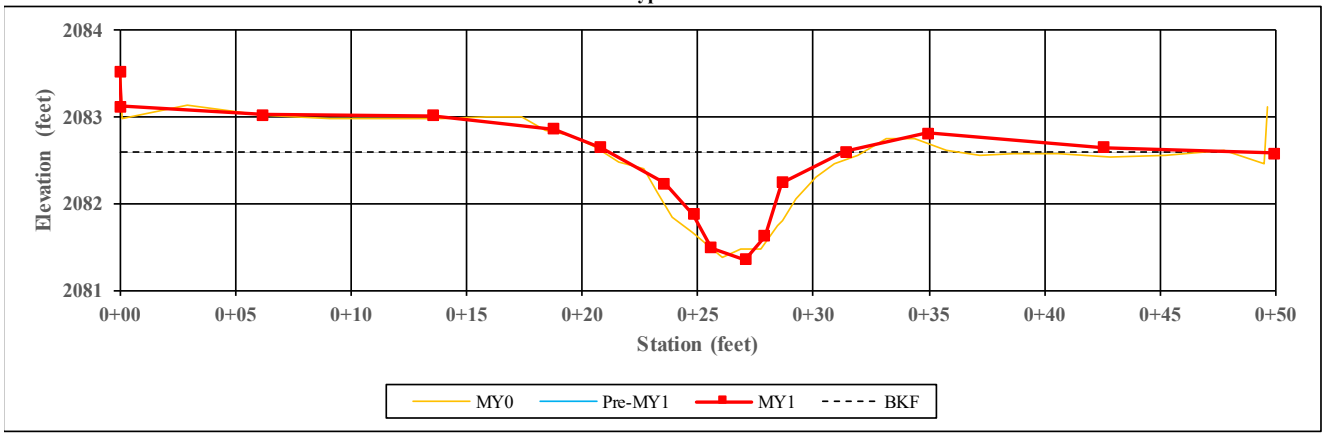
Left Descending Bank

Right Descending Bank

*** Data collected as part of 2019 monitoring year during adaptive management on Weston Reach 1A and 1B**

Project Name: Fletcher Mitigation site **XS Number:** 15 **Station:** 406+40

Reach Name: Weston Creek Reach 1A **XS Type:** Riffle



CHANNEL DIMENSIONS SUMMARY	MY0	*Pre-MY1	MY1	MY2	MY3	MY4	MY5	MY6
Bankful Width (ft)	9.1	-	10.8	-	-	-	-	-
Floodprone Width (ft)	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0
Bankfull Mean Depth (ft)	0.6	-	0.5	-	-	-	-	-
Bankfull Max Depth (ft)	1.1	-	1.2	-	-	-	-	-
Bankfull Cross-Sectional Area (ft^2)	5.4	-	5.4	-	-	-	-	-
Width/Depth Ratio	15.5	-	21.7	-	-	-	-	-
Entrenchment Ratio	5.5	-	4.6	-	-	-	-	-
Bank Height Ratio	1.0	-	1.2	-	-	-	-	-

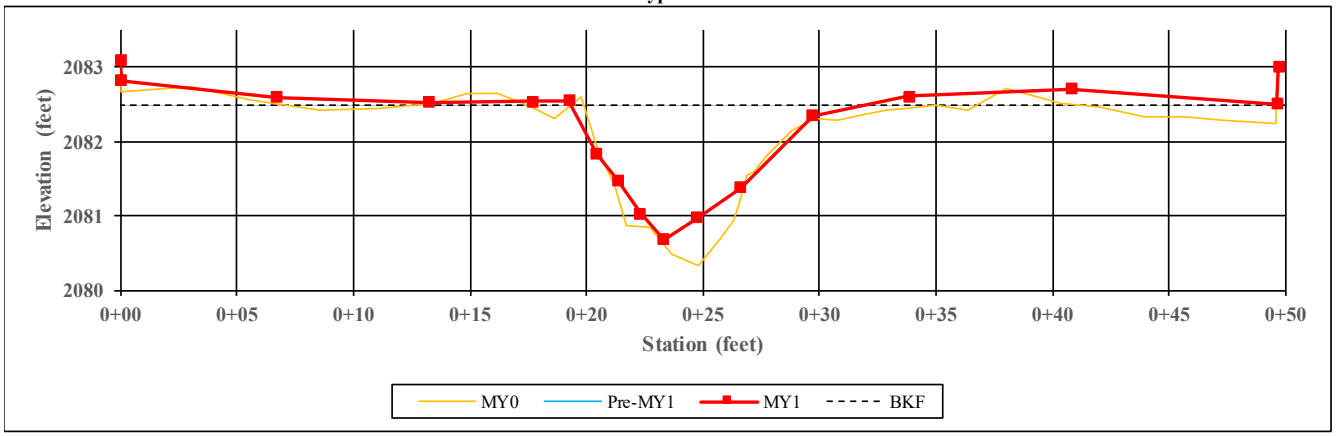
Left Descending Bank

Right Descending Bank

*** Data not collected due to adaptive management on Weston Reach 1A and 1B**

Project Name: Fletcher Mitigation site **XS Number:** 16 **Station:** 406+87

Reach Name: Weston Creek Reach 1A **XS Type:** Pool



CHANNEL DIMENSIONS SUMMARY	MY0	*Pre-MY1	MY1	MY2	MY3	MY4	MY5	MY6
Bankful Width (ft)	9.7	-	9.3	-	-	-	-	-
Floodprone Width (ft)	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0
Bankfull Mean Depth (ft)	1.1	-	1.1	-	-	-	-	-
Bankfull Max Depth (ft)	2.0	-	1.8	-	-	-	-	-
Bankfull Cross-Sectional Area (ft^2)	10.4	-	10.4	-	-	-	-	-
Width/Depth Ratio	9.1	-	8.3	-	-	-	-	-
Entrenchment Ratio	5.1	-	5.4	-	-	-	-	-
Bank Height Ratio	1.0	-	0.9	-	-	-	-	-

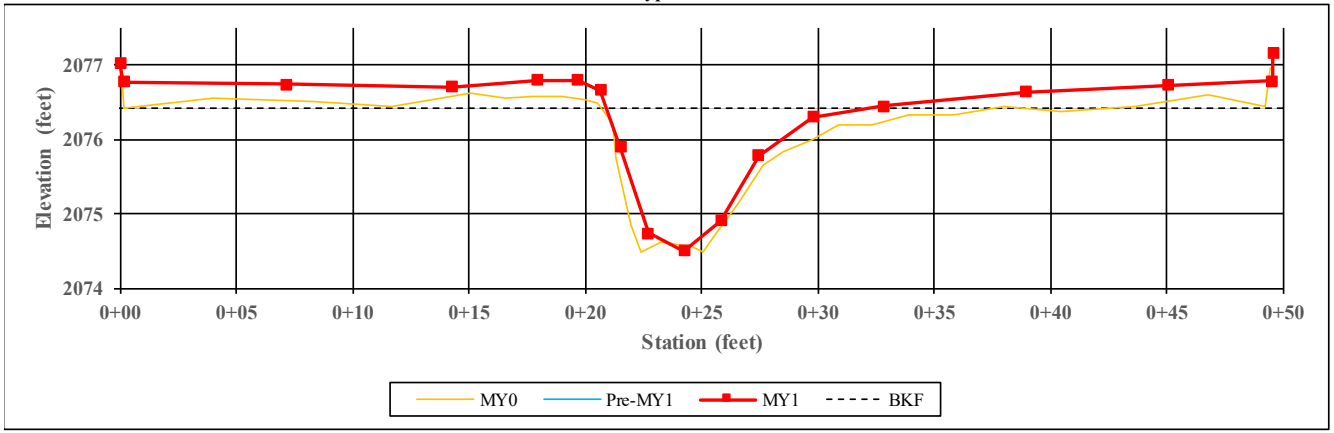
Left Descending Bank

Right Descending Bank

*** Data not collected due to adaptive management on Weston Reach 1A and 1B**

Project Name: Fletcher Mitigation site **XS Number:** 17 **Station:** 418+23

Reach Name: Weston Creek Reach 1A **XS Type:** Pool



CHANNEL DIMENSIONS SUMMARY	MY0	Pre-MY1	MY1	MY2	MY3	MY4	MY5	MY6
Bankful Width (ft)	9.8	-	8.2	-	-	-	-	-
Floodprone Width (ft)	50.0	50.0	50.0	50.0	-	-	-	-
Bankfull Mean Depth (ft)	1.0	-	1.1	-	-	-	-	-
Bankfull Max Depth (ft)	1.7	-	1.9	-	-	-	-	-
Bankfull Cross-Sectional Area (ft^2)	9.4	-	9.4	-	-	-	-	-
Width/Depth Ratio	10.1	-	7.2	-	-	-	-	-
Entrenchment Ratio	5.1	-	6.1	-	-	-	-	-
Bank Height Ratio	1.0	-	0.9	-	-	-	-	-

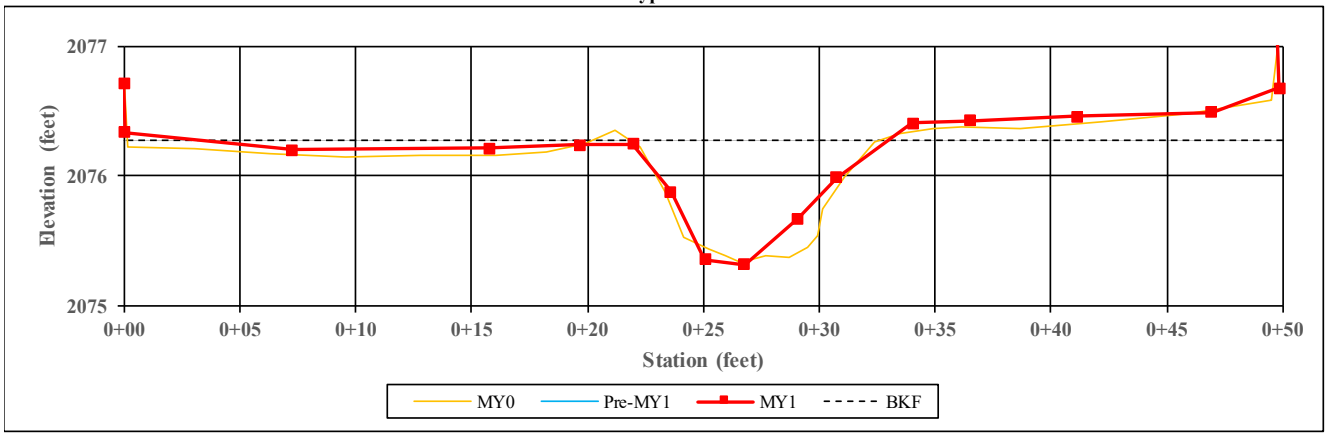
Left Descending Bank

Right Descending Bank

*** Data not collected due to adaptive management on Weston Reach 1A and 1B**

Project Name: Fletcher Mitigation site **XS Number:** 18 **Station:** 418+53

Reach Name: Weston Creek Reach 1A **XS Type:** Riffle



CHANNEL DIMENSIONS SUMMARY	MY0	*Pre-MY1	MY1	MY2	MY3	MY4	MY5	MY6
Bankful Width (ft)	10.4	-	23.5	-	-	-	-	-
Floodprone Width (ft)	50.0	50.0	50.0	50.0	50.0	-	-	-
Bankfull Mean Depth (ft)	0.6	-	0.3	-	-	-	-	-
Bankfull Max Depth (ft)	0.9	-	0.9	-	-	-	-	-
Bankfull Cross-Sectional Area (ft^2)	6.2	-	6.2	-	-	-	-	-
Width/Depth Ratio	17.4	-	89.4	-	-	-	-	-
Entrenchment Ratio	4.8	-	2.1	-	-	-	-	-
Bank Height Ratio	1.0	-	1.0	-	-	-	-	-

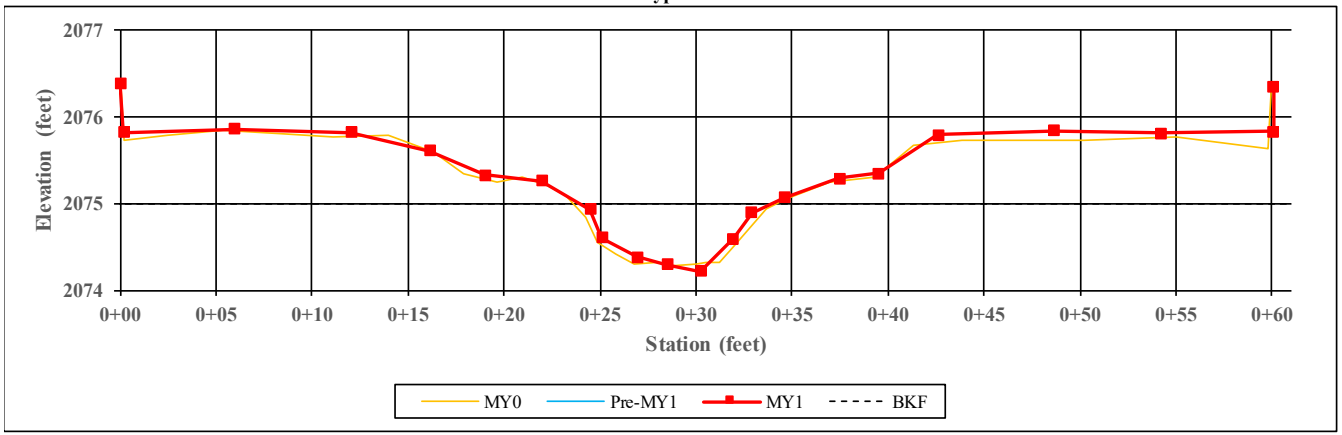
Left Descending Bank

Right Descending Bank

*** Data not collected due to adaptive management on Weston Reach 1A and 1B**

Project Name: Fletcher Mitigation site **XS Number:** 19 **Station:** 422+31

Reach Name: Weston Creek Reach 1B **XS Type:** Riffle



CHANNEL DIMENSIONS SUMMARY	MY0	*Pre-MY1	MY1	MY2	MY3	MY4	MY5	MY6
Bankful Width (ft)	9.7	-	9.4	-	-	-	-	-
Floodprone Width (ft)	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0
Bankfull Mean Depth (ft)	0.5	-	0.5	-	-	-	-	-
Bankfull Max Depth (ft)	0.7	-	0.8	-	-	-	-	-
Bankfull Cross-Sectional Area (ft^2)	4.7	-	4.7	-	-	-	-	-
Width/Depth Ratio	20.4	-	19.0	-	-	-	-	-
Entrenchment Ratio	4.1	-	4.2	-	-	-	-	-
Bank Height Ratio	1.0	-	1.3	-	-	-	-	-

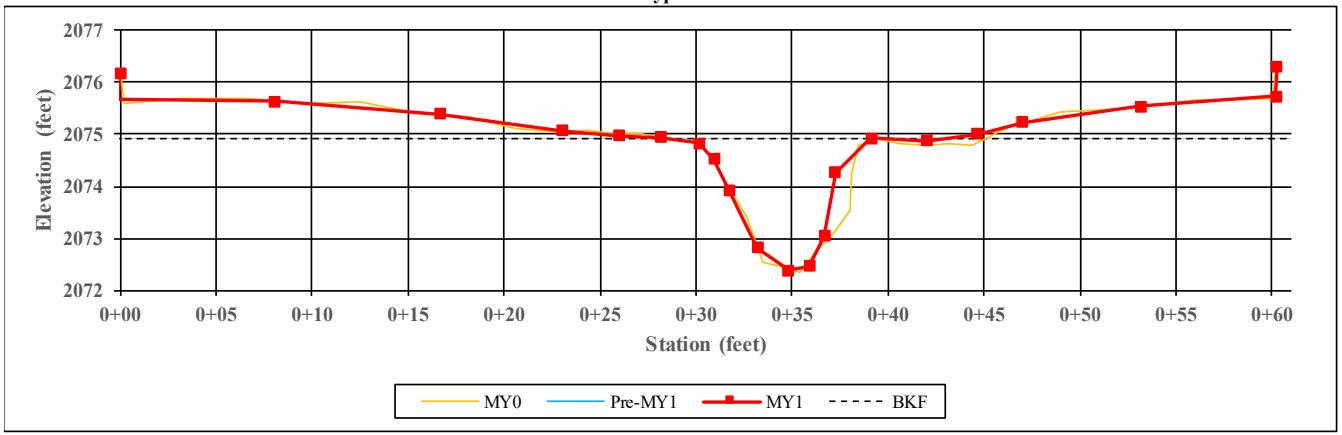
Left Descending Bank

Right Descending Bank

*** Data not collected due to adaptive management on Weston Reach 1A and 1B**

Project Name: Fletcher Mitigation site **XS Number:** 20 **Station:** 422+95

Reach Name: Weston Creek Reach 1B **XS Type:** Pool



CHANNEL DIMENSIONS SUMMARY	MY0	*Pre-MY1	MY1	MY2	MY3	MY4	MY5	MY6
Bankful Width (ft)	8.3	-	13.4	-	-	-	-	-
Floodprone Width (ft)	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0
Bankfull Mean Depth (ft)	1.5	-	0.9	-	-	-	-	-
Bankfull Max Depth (ft)	2.5	-	2.5	-	-	-	-	-
Bankfull Cross-Sectional Area (ft^2)	12.7	-	12.7	-	-	-	-	-
Width/Depth Ratio	5.4	-	14.2	-	-	-	-	-
Entrenchment Ratio	7.2	-	4.5	-	-	-	-	-
Bank Height Ratio	1.0	-	1.0	-	-	-	-	-

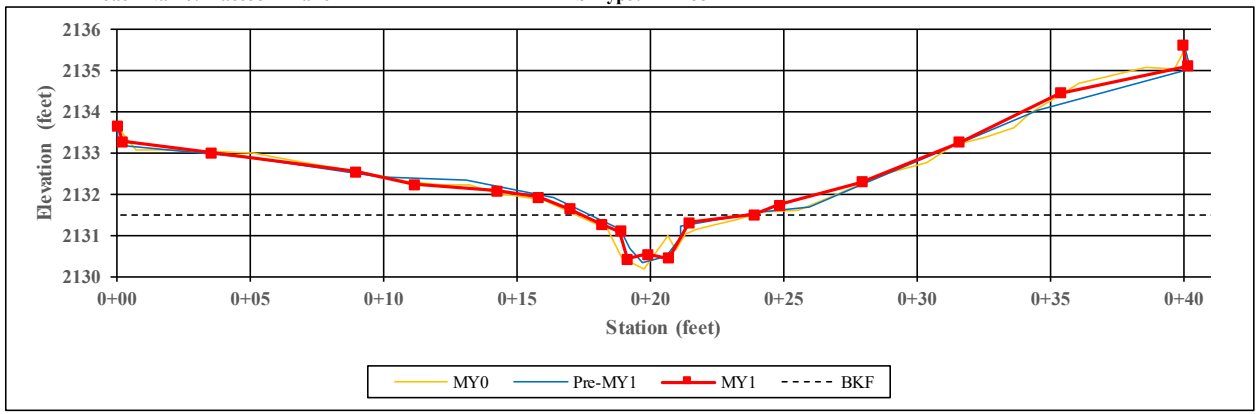
Looking Upstream

Right Descending Bank

*** Data not collected due to adaptive management on Weston Reach 1A and 1B**

Project Name: Fletcher Mitigation site **XS Number:** 21 **Station:** 217+59

Reach Name: Raccoon Branch 1D **XS Type:** Pool



CHANNEL DIMENSIONS SUMMARY	MY0	*Pre-MY1	MY1	MY2	MY3	MY4	MY5	MY6
Bankful Width (ft)	5.6	6.1	6.1	-	-	-	-	-
Floodprone Width (ft)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Bankfull Mean Depth (ft)	0.5	0.4	0.4	-	-	-	-	-
Bankfull Max Depth (ft)	1.2	1.2	1.1	-	-	-	-	-
Bankfull Cross-Sectional Area (ft^2)	2.7	2.7	2.7	-	-	-	-	-
Width/Depth Ratio	11.6	13.7	13.8	-	-	-	-	-
Entrenchment Ratio	3.6	3.3	3.3	-	-	-	-	-
Bank Height Ratio	1.0	0.7	0.6	-	-	-	-	-

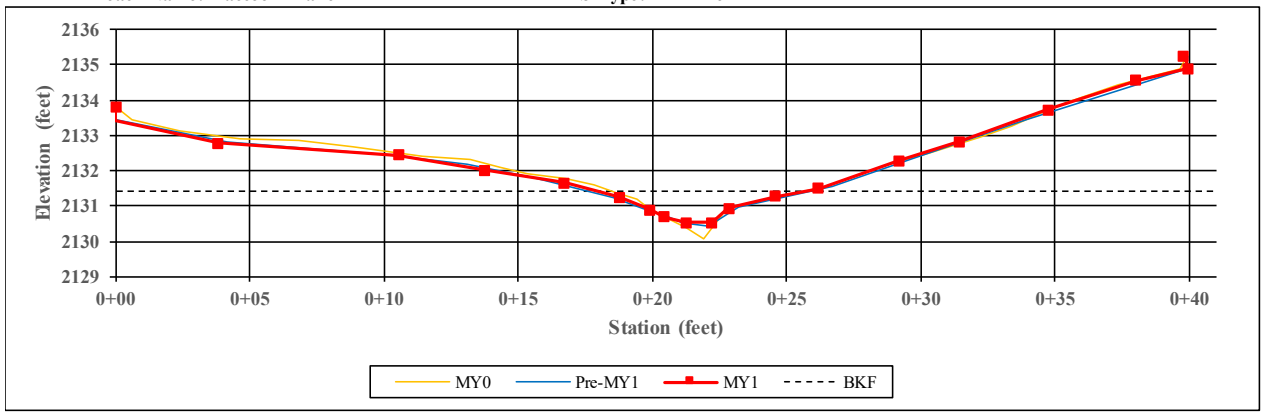
Left Descending Bank

Right Descending Bank

*** Data collected as part of 2019 monitoring year during adaptive management on Weston Reach 1A and 1B**

Project Name: Fletcher Mitigation site **XS Number:** 22 **Station:** 217+65

Reach Name: Raccoon Branch 1D **XS Type:** Riffle



CHANNEL DIMENSIONS SUMMARY	MY0	*Pre-MY1	MY1	MY2	MY3	MY4	MY5	MY6
Bankful Width (ft)	6.8	7.8	6.9	-	-	-	-	-
Floodprone Width (ft)	20.0	20.0	20.0	-	-	-	-	-
Bankfull Mean Depth (ft)	0.5	0.4	0.5	-	-	-	-	-
Bankfull Max Depth (ft)	1.3	0.9	0.9	-	-	-	-	-
Bankfull Cross-Sectional Area (ft^2)	3.4	3.4	3.4	-	-	-	-	-
Width/Depth Ratio	13.8	18.1	14.2	-	-	-	-	-
Entrenchment Ratio	2.9	2.6	2.9	-	-	-	-	-
Bank Height Ratio	1.0	0.6	0.8	-	-	-	-	-

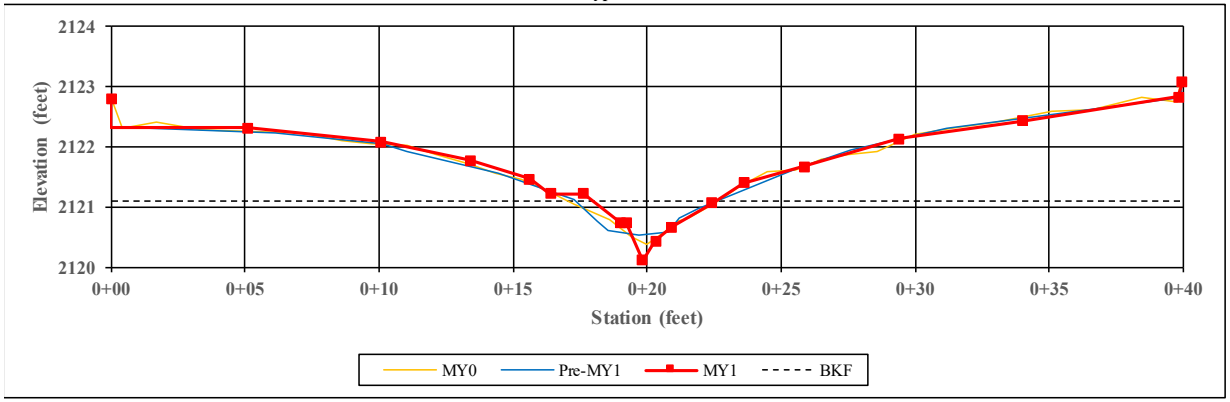
Left Descending Bank

Right Descending Bank

*** Data collected as part of 2019 monitoring year during adaptive management on Weston Reach 1A and 1B**

Project Name: Fletcher Mitigation site **XS Number:** 23 **Station:** 307+87

Reach Name: Coates Branch 1B **XS Type:** Riffle



CHANNEL DIMENSIONS SUMMARY	MY0	*Pre-MY1	MY1	MY2	MY3	MY4	MY5	MY6
Bankful Width (ft)	5.2	4.9	3.4	-	-	-	-	-
Floodprone Width (ft)	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0
Bankfull Mean Depth (ft)	0.3	0.3	0.5	-	-	-	-	-
Bankfull Max Depth (ft)	0.7	0.5	1.0	-	-	-	-	-
Bankfull Cross-Sectional Area (ft^2)	1.6	1.6	1.6	-	-	-	-	-
Width/Depth Ratio	16.5	15.1	7.5	-	-	-	-	-
Entrenchment Ratio	2.9	3.1	4.4	-	-	-	-	-
Bank Height Ratio	1.0	1.3	1.1	-	-	-	-	-

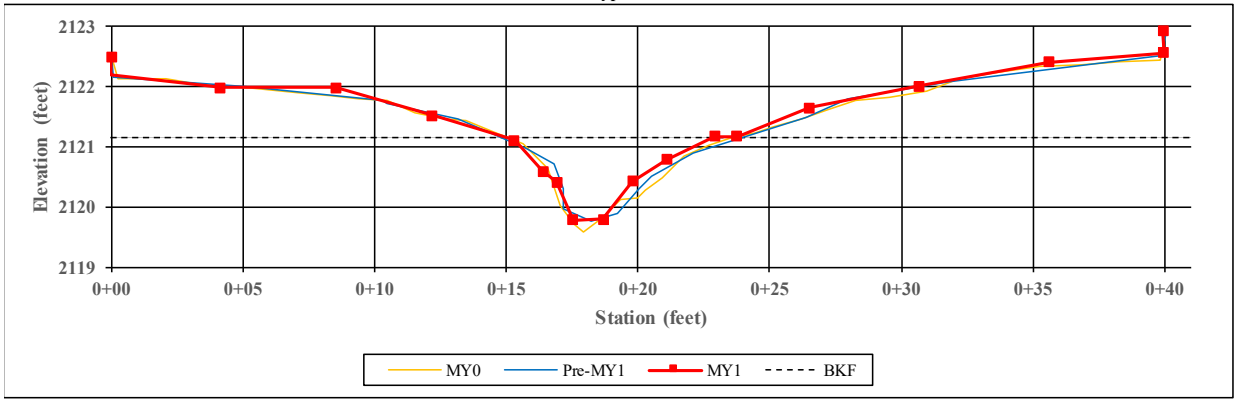
Left Descending Bank

Right Descending Bank

*** Data collected as part of 2019 monitoring year during adaptive management on Weston Reach 1A and 1B**

Project Name: Fletcher Mitigation site **XS Number:** 24 **Station:** 307+95

Reach Name: Coates Branch 1B **XS Type:** Pool



CHANNEL DIMENSIONS SUMMARY	MY0	*Pre-MY1	MY1	MY2	MY3	MY4	MY5	MY6
Bankful Width (ft)	7.4	8.6	7.9	-	-	-	-	-
Floodprone Width (ft)	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0
Bankfull Mean Depth (ft)	0.7	0.6	0.6	-	-	-	-	-
Bankfull Max Depth (ft)	1.5	1.3	1.4	-	-	-	-	-
Bankfull Cross-Sectional Area (ft^2)	5.1	5.1	5.1	-	-	-	-	-
Width/Depth Ratio	10.7	14.5	12.3	-	-	-	-	-
Entrenchment Ratio	5.4	4.6	5.0	-	-	-	-	-
Bank Height Ratio	1.0	0.9	0.9	-	-	-	-	-

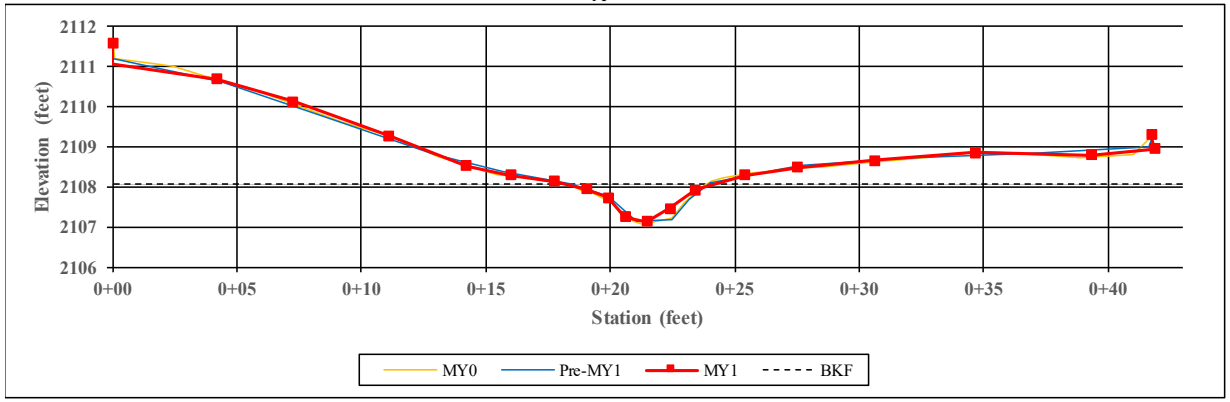
Looking Upstream

Looking Downstream

*** Data collected as part of 2019 monitoring year during adaptive management on Weston Reach 1A and 1B**

Project Name: Fletcher Mitigation site **XS Number:** 25 **Station:** 315+12

Reach Name: Coates Branch 1C **XS Type:** Pool



CHANNEL DIMENSIONS SUMMARY	MY0	*Pre-MY1	MY1	MY2	MY3	MY4	MY5	MY6
Bankful Width (ft)	5.3	5.6	6.2	-	-	-	-	-
Floodprone Width (ft)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Bankfull Mean Depth (ft)	0.5	0.5	0.4	-	-	-	-	-
Bankfull Max Depth (ft)	0.9	0.9	0.9	-	-	-	-	-
Bankfull Cross-Sectional Area (ft^2)	2.7	2.7	2.7	-	-	-	-	-
Width/Depth Ratio	10.5	11.3	14.5	-	-	-	-	-
Entrenchment Ratio	3.8	3.6	3.2	-	-	-	-	-
Bank Height Ratio	1.0	1.0	0.8	-	-	-	-	-

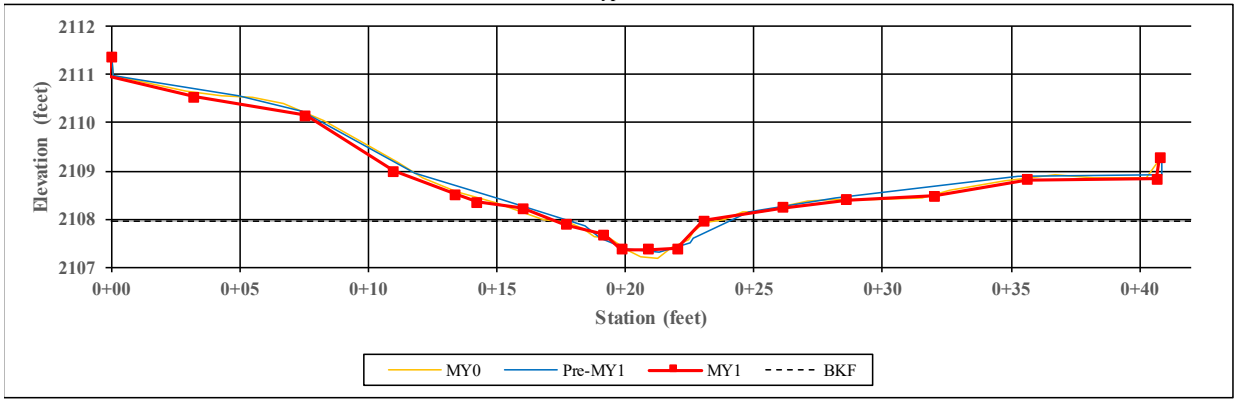
Left Descending Bank

Right Descending Bank

*** Data collected as part of 2019 monitoring year during adaptive management on Weston Reach 1A and 1B**

Project Name: Fletcher Mitigation site **XS Number:** 26 **Station:** 315+20

Reach Name: Coates Branch 1C **XS Type:** Riffle



CHANNEL DIMENSIONS SUMMARY	MY0	*Pre-MY1	MY1	MY2	MY3	MY4	MY5	MY6
Bankful Width (ft)	5.4	5.5	5.8	-	-	-	-	-
Floodprone Width (ft)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Bankfull Mean Depth (ft)	0.4	0.4	0.4	-	-	-	-	-
Bankfull Max Depth (ft)	0.8	0.6	0.6	-	-	-	-	-
Bankfull Cross-Sectional Area (ft^2)	2.2	2.2	2.2	-	-	-	-	-
Width/Depth Ratio	13.5	14.0	15.4	-	-	-	-	-
Entrenchment Ratio	3.7	3.6	3.4	-	-	-	-	-
Bank Height Ratio	1.0	0.9	0.8	-	-	-	-	-

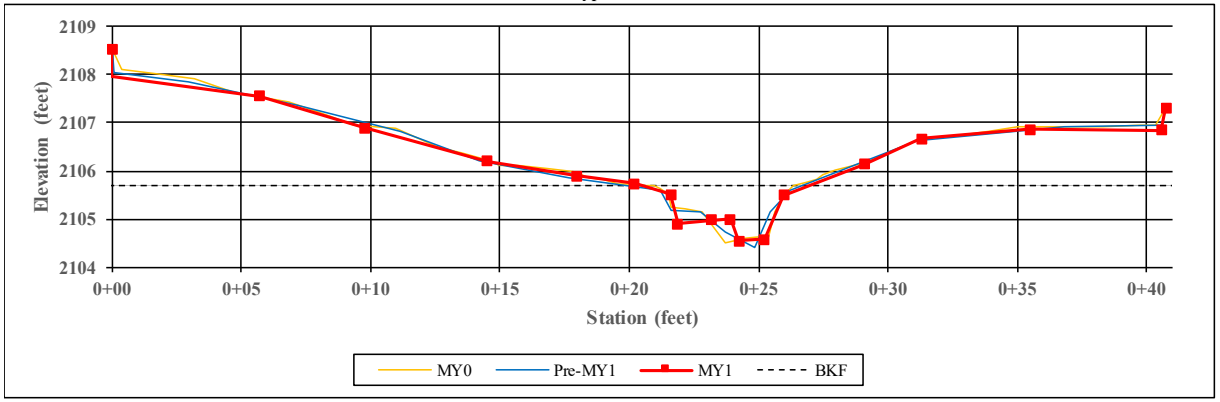
Left Descending Bank

Right Descending Bank

*** Data collected as part of 2019 monitoring year during adaptive management on Weston Reach 1A and 1B**

Project Name: Fletcher Mitigation site **XS Number:** 27 **Station:** 317+35

Reach Name: Coates Branch 1D **XS Type:** Pool



CHANNEL DIMENSIONS SUMMARY	MY0	*Pre-MY1	MY1	MY2	MY3	MY4	MY5	MY6
Bankful Width (ft)	5.9	6.9	6.4	-	-	-	-	-
Floodprone Width (ft)	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0
Bankfull Mean Depth (ft)	0.6	0.5	0.6	-	-	-	-	-
Bankfull Max Depth (ft)	1.2	1.3	1.1	-	-	-	-	-
Bankfull Cross-Sectional Area (ft^2)	3.7	3.7	3.7	-	-	-	-	-
Width/Depth Ratio	9.2	13.2	11.1	-	-	-	-	-
Entrenchment Ratio	4.3	3.6	3.9	-	-	-	-	-
Bank Height Ratio	1.0	1.0	0.8	-	-	-	-	-

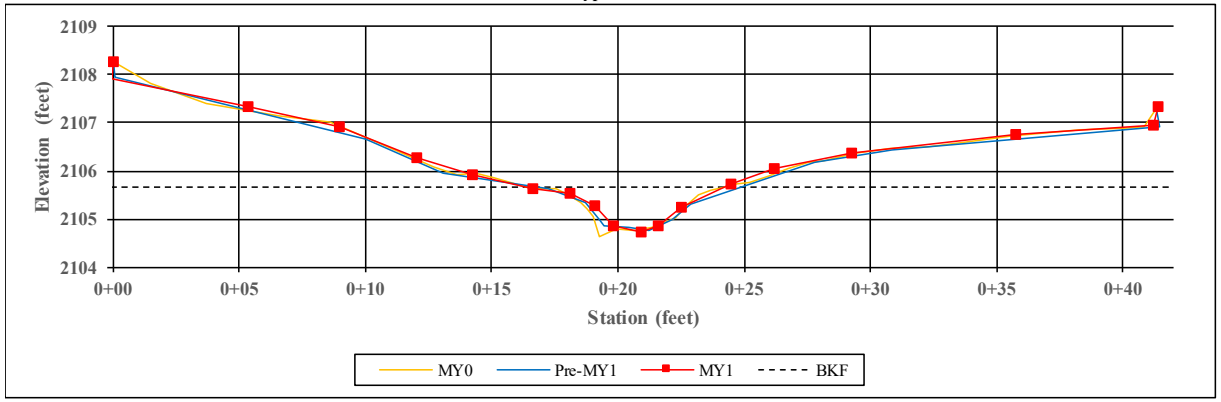
Left Descending Bank

Right Descending Bank

*** Data collected as part of 2019 monitoring year during adaptive management on Weston Reach 1A and 1B**

Project Name: Fletcher Mitigation site **XS Number:** 28 **Station:** 317+42

Reach Name: Coates Branch 1D **XS Type:** Riffle



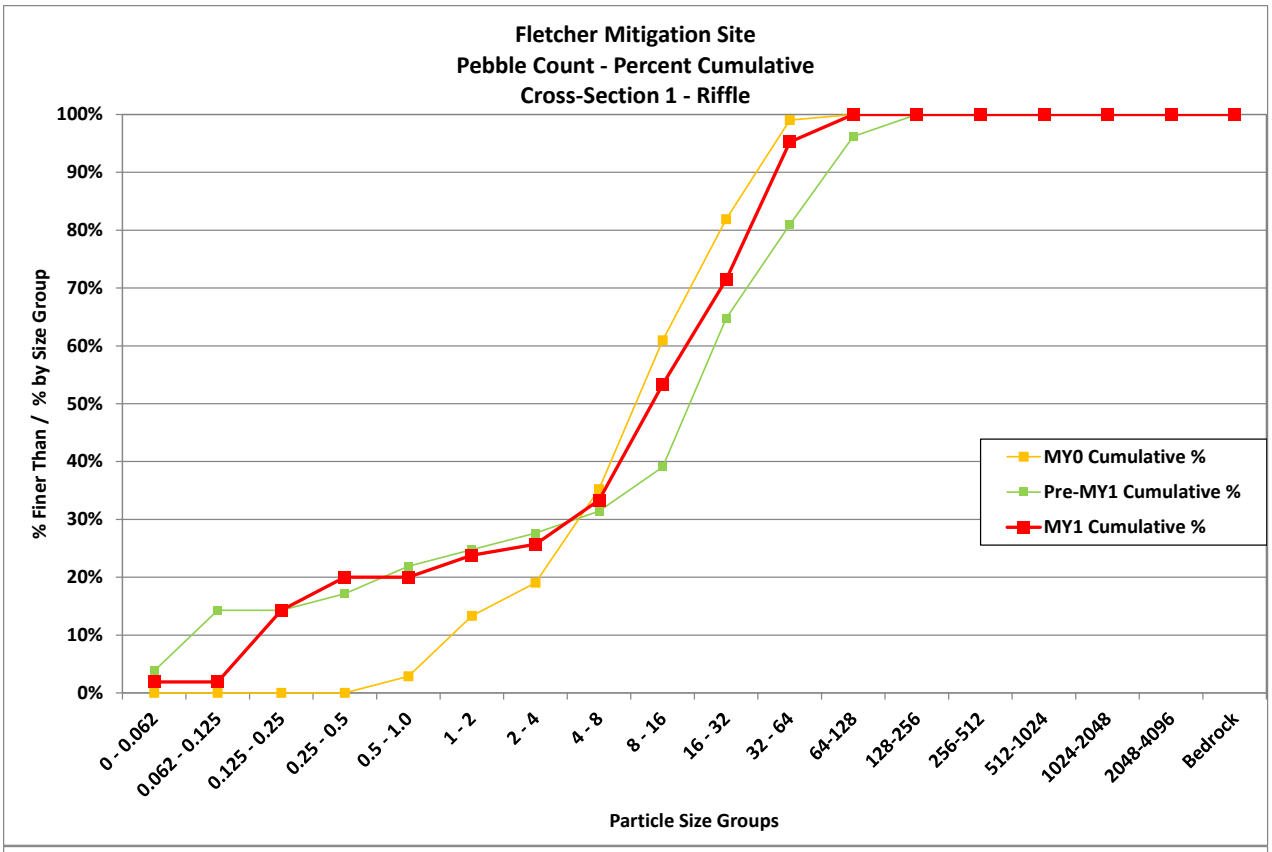
CHANNEL DIMENSIONS SUMMARY	MY0	*Pre-MY1	MY1	MY2	MY3	MY4	MY5	MY6
Bankful Width (ft)	6.1	7.4	7.5	-	-	-	-	-
Floodprone Width (ft)	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0
Bankfull Mean Depth (ft)	0.5	0.4	0.4	-	-	-	-	-
Bankfull Max Depth (ft)	1.0	0.9	0.9	-	-	-	-	-
Bankfull Cross-Sectional Area (ft^2)	3.3	3.3	3.3	-	-	-	-	-
Width/Depth Ratio	11.4	16.5	17.2	-	-	-	-	-
Entrenchment Ratio	4.1	3.4	3.3	-	-	-	-	-
Bank Height Ratio	1.0	1.0	0.9	-	-	-	-	-

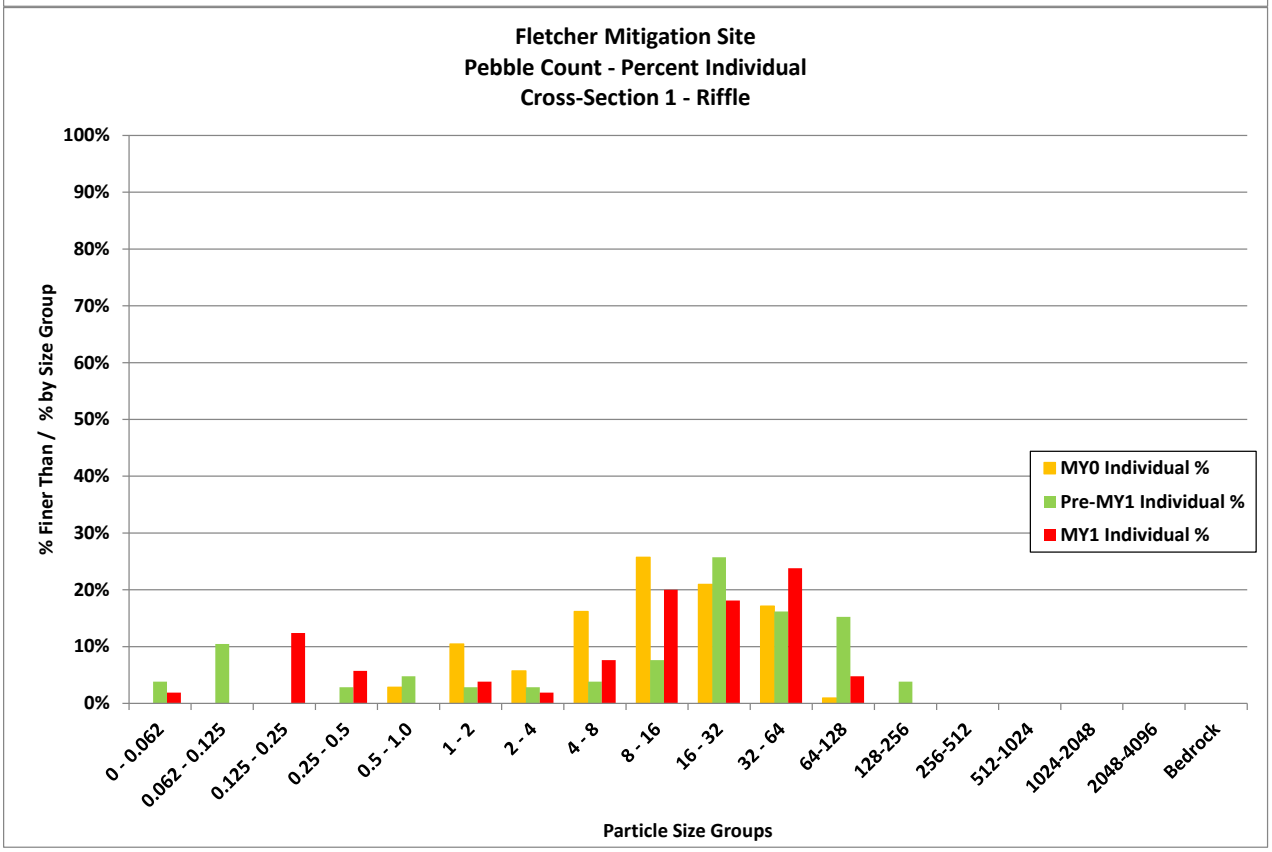
Left Descending Bank

Right Descending Bank

*** Data collected as part of 2019 monitoring year during adaptive management on Weston Reach 1A and 1B**

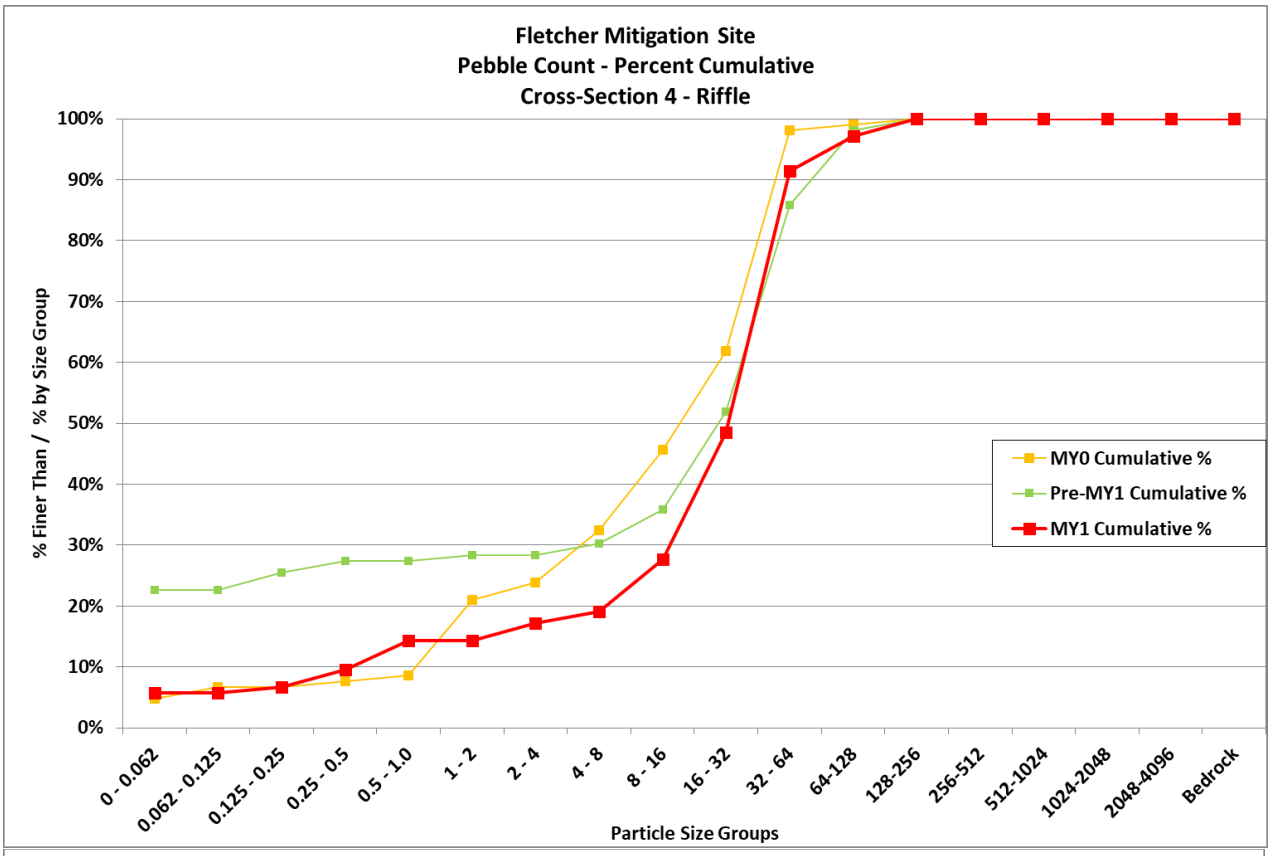
Fletcher Mitigation Site			
Cross Section 1 - Riffle			
Monitoring Year - 2020; MY1			
Bed Surface Material Particle Size Class (mm)	**Number**	**% Individual**	**% Cumulative**
0 - 0.062	2	1.9%	2%
0.062 - 0.125	0	0.0%	2%
0.125 - 0.25	13	12.4%	14%
0.25 - 0.5	6	5.7%	20%
0.5 - 1.0	0	0.0%	20%
1 - 2	4	3.8%	24%
2 - 4	2	1.9%	26%
4 - 8	8	7.6%	33%
8 - 16	21	20.0%	53%
16 - 32	19	18.1%	71%
32 - 64	25	23.8%	95%
64-128	5	4.8%	100%
128-256	0	0.0%	100%
256-512	0	0.0%	100%
512-1024	0	0.0%	100%
1024-2048	0	0.0%	100%
2048-4096	0	0.0%	100%
Bedrock	0	0.0%	100%
Total	**105**	**100%**	**100%**
		Summary Data	
		D50	**14**
		D84	**44**
		D95	**63**

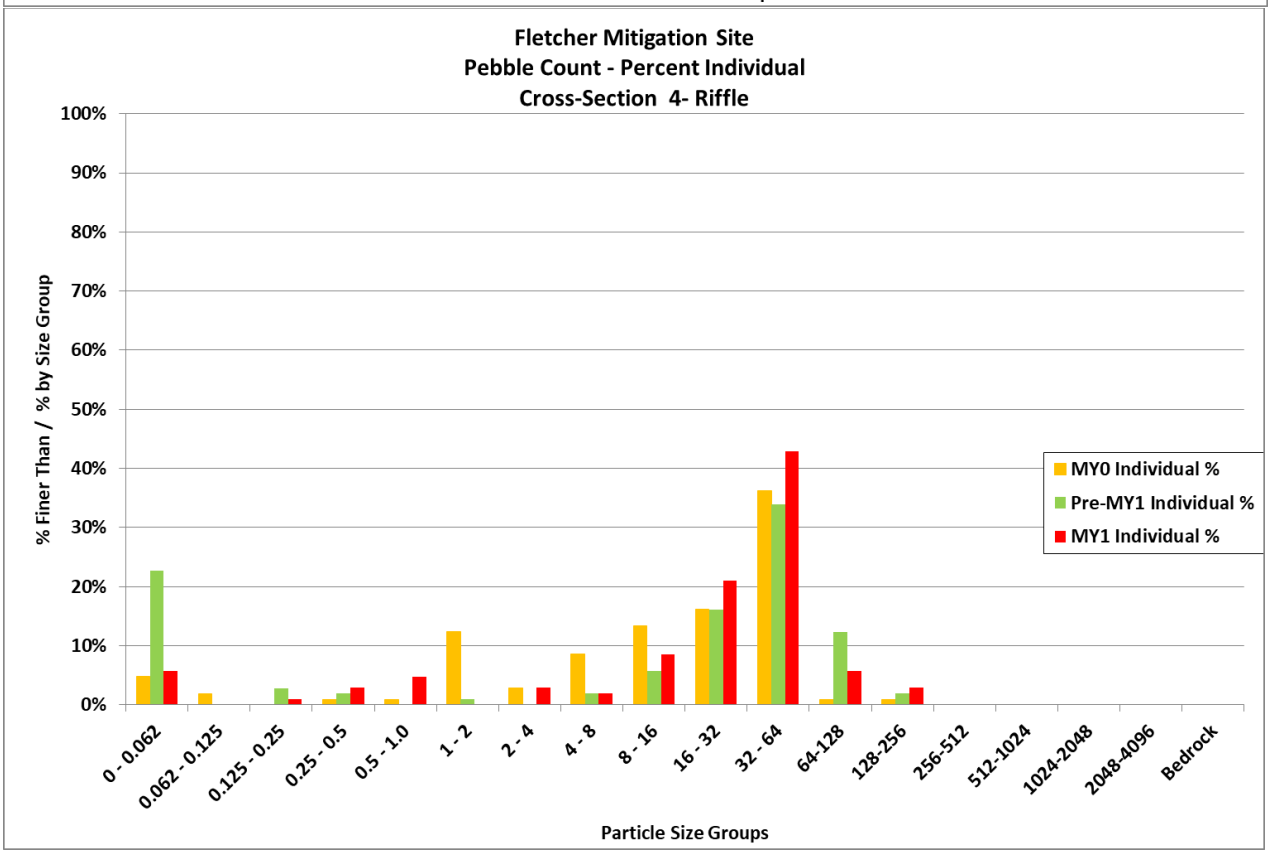

Fletcher Mitigation Site
Pebble Count - Percent Cumulative
Cross-Section 1 - Riffle
% Finer Than / % by Size Group
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
0 - 0.062
0.062 - 0.125
0.125 - 0.25
0.25 - 0.5
0.5 - 1.0
1 - 2
2 - 4
4 - 8
8 - 16
16 - 32
32 - 64
64-128
128-256
256-512
512-1024
1024-2048
2048-4096
Bedrock
Particle Size Groups
MY0 Cumulative %
Pre-MY1 Cumulative %
MY1 Cumulative %


Fletcher Mitigation Site
Pebble Count - Percent Individual
Cross-Section 1 - Riffle
% Finer Than / % by Size Group
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
0 - 0.062
0.062 - 0.125
0.125 - 0.25
0.25 - 0.5
0.5 - 1.0
1 - 2
2 - 4
4 - 8
8 - 16
16 - 32
32 - 64
64-128
128-256
256-512
512-1024
1024-2048
2048-4096
Bedrock
Particle Size Groups
MY0 Individual %
Pre-MY1 Individual %
MY1 Individual %

Fletcher Mitigation Site			
Cross Section 4 - Riffle			
Monitoring Year - 2020; MY1			
Bed Surface Material Particle Size Class (mm)	**Number**	**% Individual**	**% Cumulative**
0 - 0.062	6	5.7%	6%
0.062 - 0.125	0	0.0%	6%
0.125 - 0.25	1	1.0%	7%
0.25 - 0.5	3	2.9%	10%
0.5 - 1.0	5	4.8%	14%
1 - 2	0	0.0%	14%
2 - 4	3	2.9%	17%
4 - 8	2	1.9%	19%
8 - 16	9	8.6%	28%
16 - 32	22	21.0%	49%
32 - 64	45	42.9%	91%
64-128	6	5.7%	97%
128-256	3	2.9%	100%
256-512	0	0.0%	100%
512-1024	0	0.0%	100%
1024-2048	0	0.0%	100%
2048-4096	0	0.0%	100%
Bedrock	0	0.0%	100%
Total	**105**	**100%**	**100%**

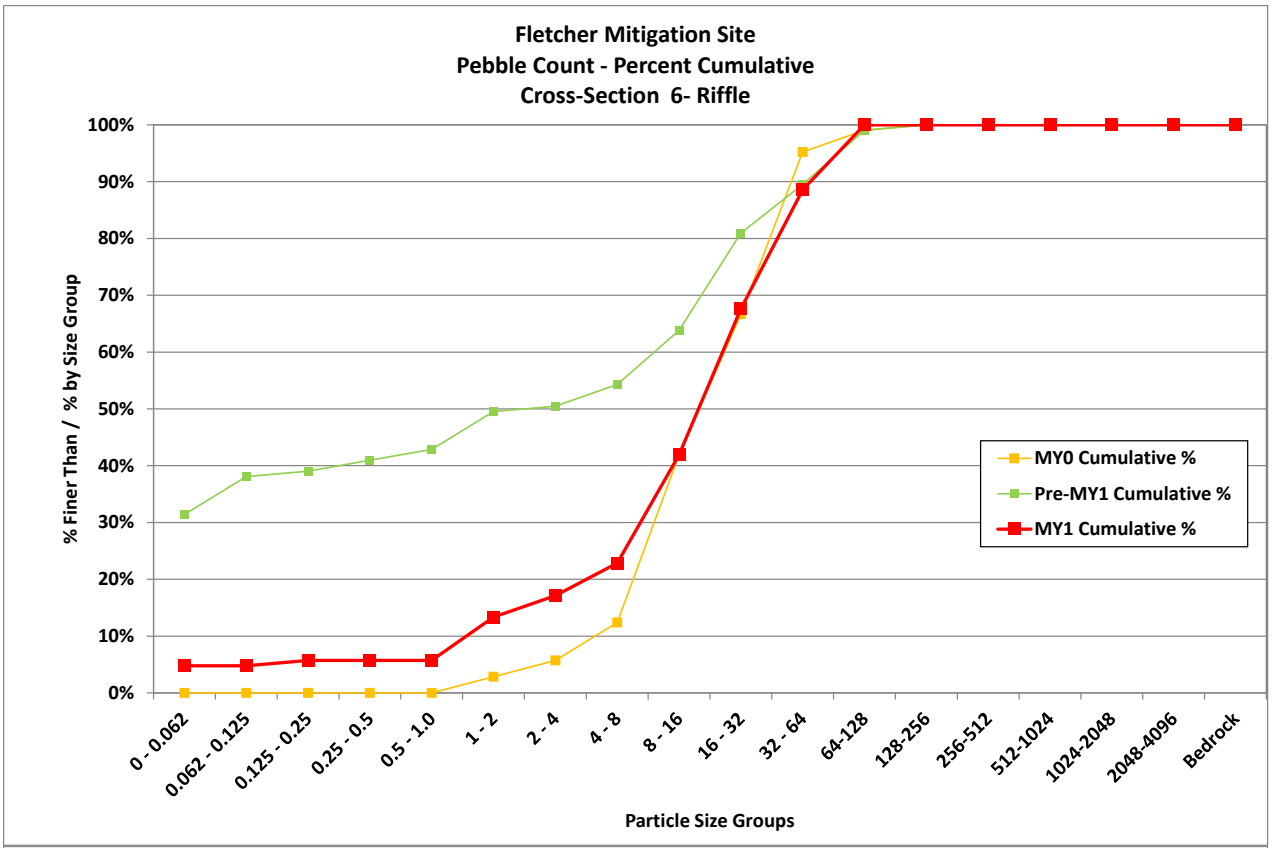
Summary Data	
D50	**33**
D84	**57**
D95	**110**

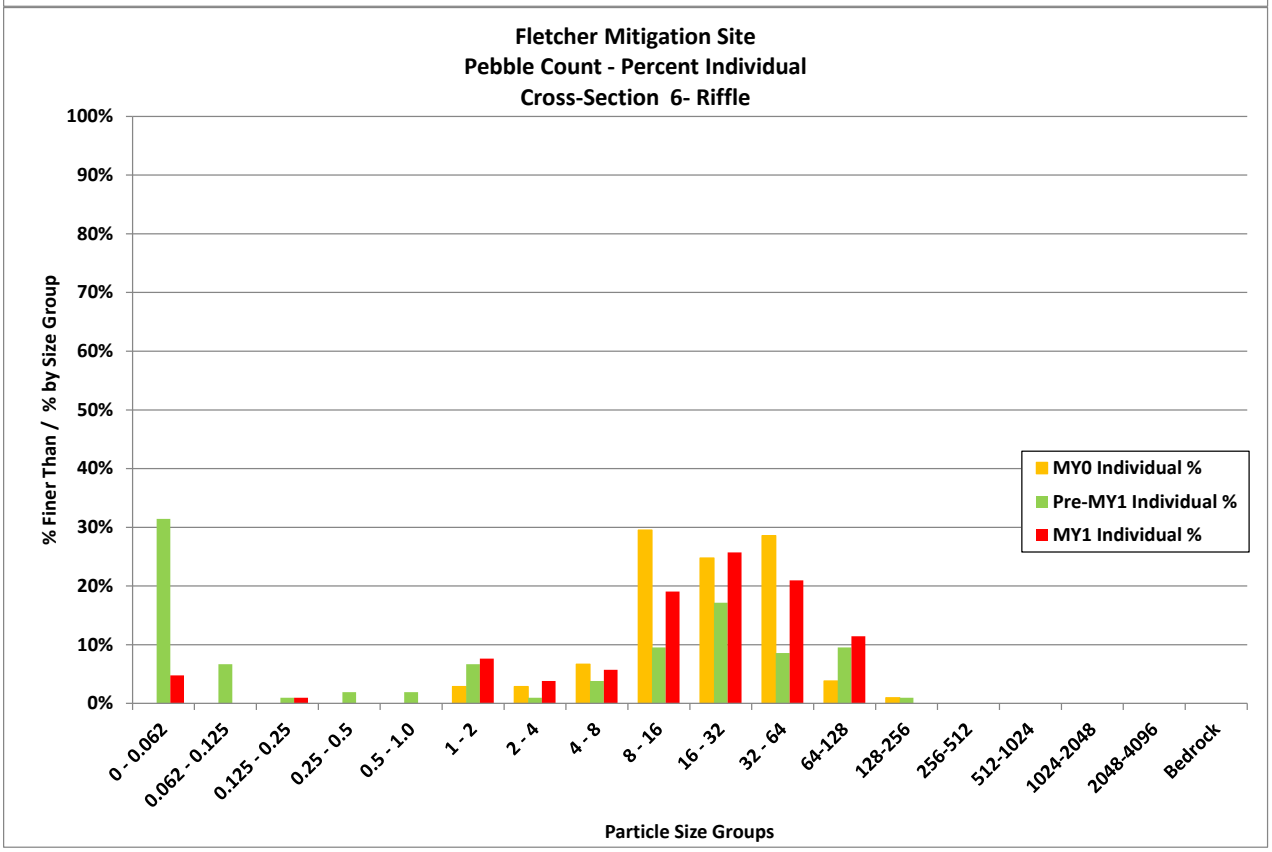

Fletcher Mitigation Site
Pebble Count - Percent Cumulative
Cross-Section 4 - Riffle
% Finer Than / % by Size Group
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
0 - 0.062
0.062 - 0.125
0.125 - 0.25
0.25 - 0.5
0.5 - 1.0
1 - 2
2 - 4
4 - 8
8 - 16
16 - 32
32 - 64
64-128
128-256
256-512
512-1024
1024-2048
2048-4096
Bedrock
Particle Size Groups
MY0 Cumulative %
Pre-MY1 Cumulative %
MY1 Cumulative %


Fletcher Mitigation Site
Pebble Count - Percent Individual
Cross-Section 4- Riffle
% Finer Than / % by Size Group
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
0 - 0.062
0.062 - 0.125
0.125 - 0.25
0.25 - 0.5
0.5 - 1.0
1 - 2
2 - 4
4 - 8
8 - 16
16 - 32
32 - 64
64-128
128-256
256-512
512-1024
1024-2048
2048-4096
Bedrock
Particle Size Groups
MY0 Individual %
Pre-MY1 Individual %
MY1 Individual %

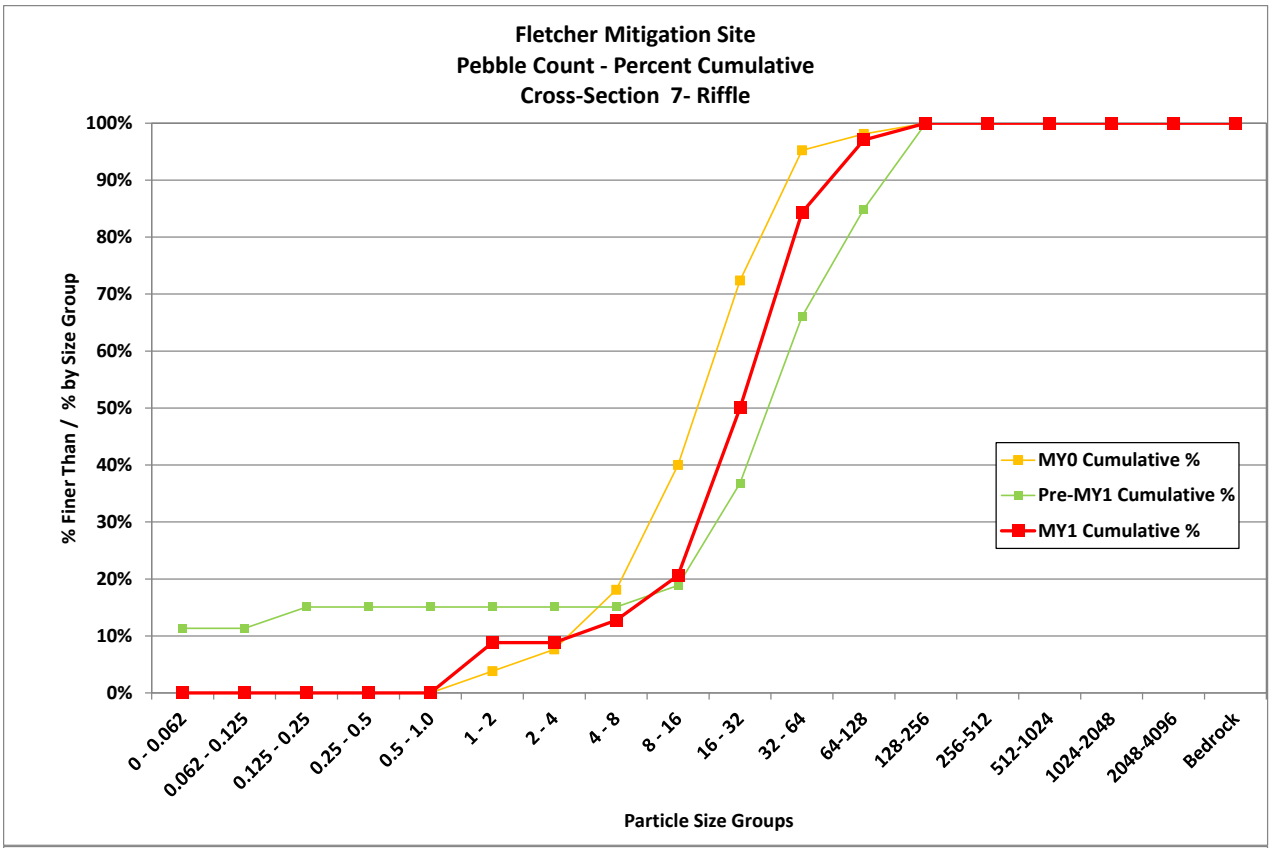
Fletcher Mitigation Site			
Cross Section 6 - Riffle			
Monitoring Year - 2020; MY1			
Bed Surface Material Particle Size Class (mm)	**Number**	**% Individual**	**% Cumulative**
0 - 0.062	5	4.8%	5%
0.062 - 0.125	0	0.0%	5%
0.125 - 0.25	1	1.0%	6%
0.25 - 0.5	0	0.0%	6%
0.5 - 1.0	0	0.0%	6%
1 - 2	8	7.6%	13%
2 - 4	4	3.8%	17%
4 - 8	6	5.7%	23%
8 - 16	20	19.0%	42%
16 - 32	27	25.7%	68%
32 - 64	22	21.0%	89%
64-128	12	11.4%	100%
128-256	0	0.0%	100%
256-512	0	0.0%	100%
512-1024	0	0.0%	100%
1024-2048	0	0.0%	100%
2048-4096	0	0.0%	100%
Bedrock	0	0.0%	100%
Total	**105**	**100%**	**100%**

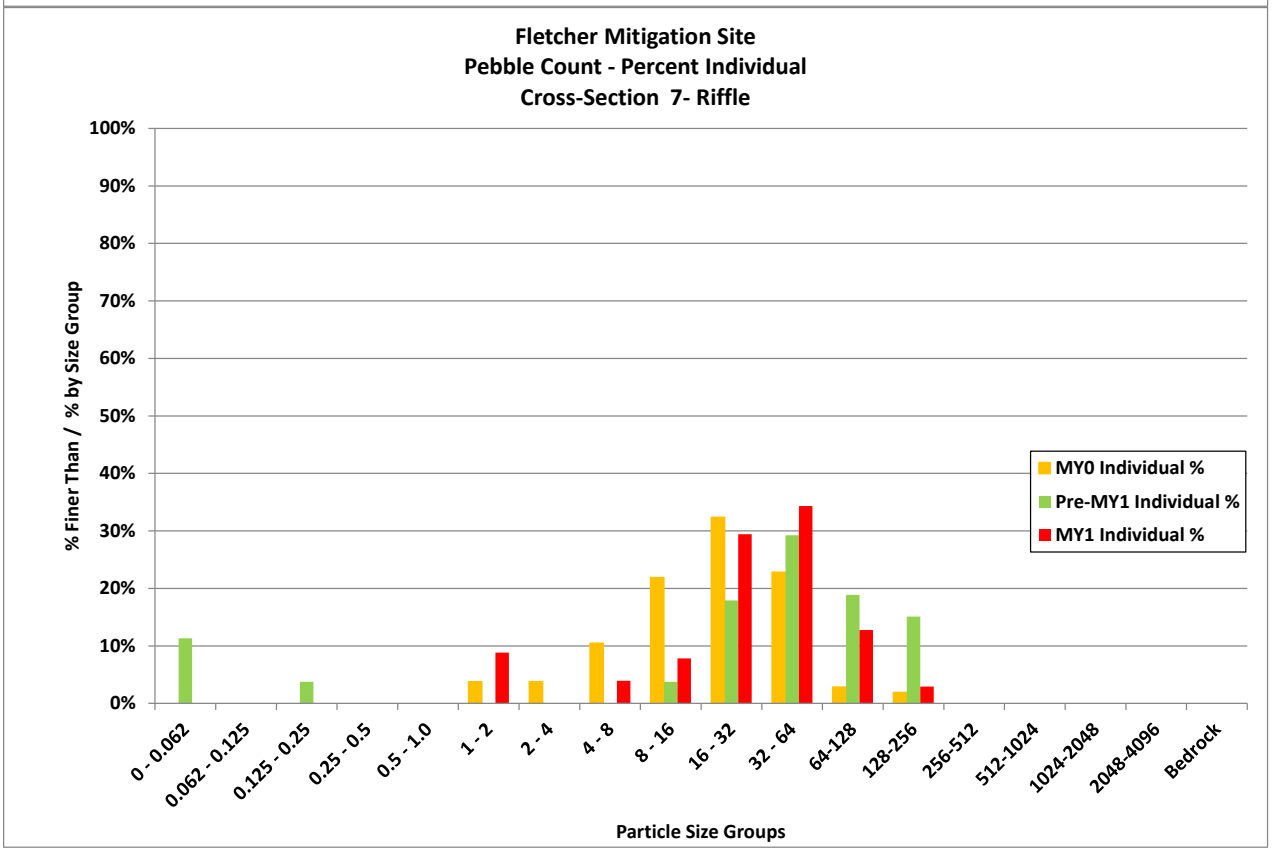
Summary Data	
D50	**19**
D84	**57**
D95	**83**


Fletcher Mitigation Site
Pebble Count - Percent Cumulative
Cross-Section 6- Riffle
% Finer Than / % by Size Group
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
MY0 Cumulative %
Pre-MY1 Cumulative %
MY1 Cumulative %
0 - 0.062
0.062 - 0.125
0.125 - 0.25
0.25 - 0.5
0.5 - 1.0
1 - 2
2 - 4
4 - 8
8 - 16
16 - 32
32 - 64
64-128
128-256
256-512
512-1024
1024-2048
2048-4096
Bedrock
Particle Size Groups

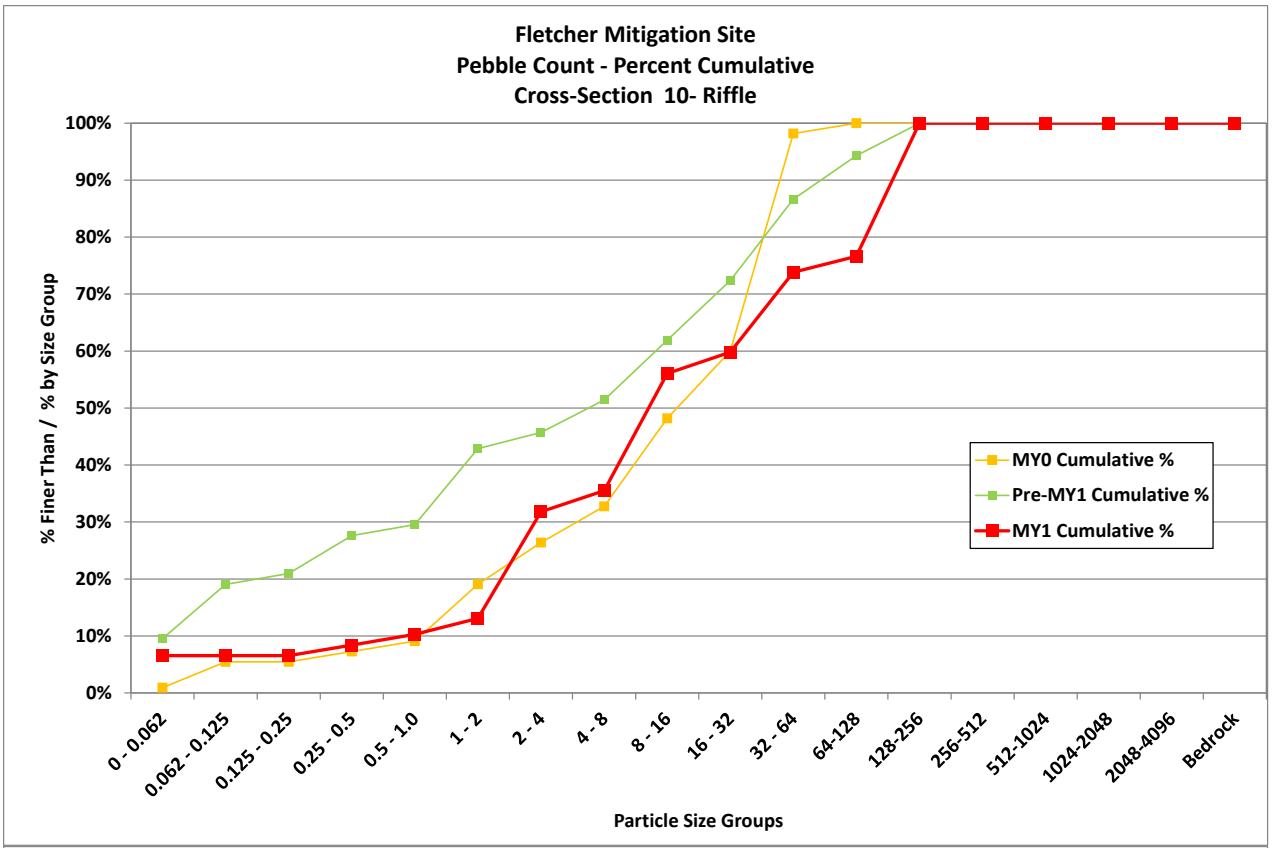

Fletcher Mitigation Site
Pebble Count - Percent Individual
Cross-Section 6- Riffle
% Finer Than / % by Size Group
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
MY0 Individual %
Pre-MY1 Individual %
MY1 Individual %
0 - 0.062
0.062 - 0.125
0.125 - 0.25
0.25 - 0.5
0.5 - 1.0
1 - 2
2 - 4
4 - 8
8 - 16
16 - 32
32 - 64
64-128
128-256
256-512
512-1024
1024-2048
2048-4096
Bedrock
Particle Size Groups

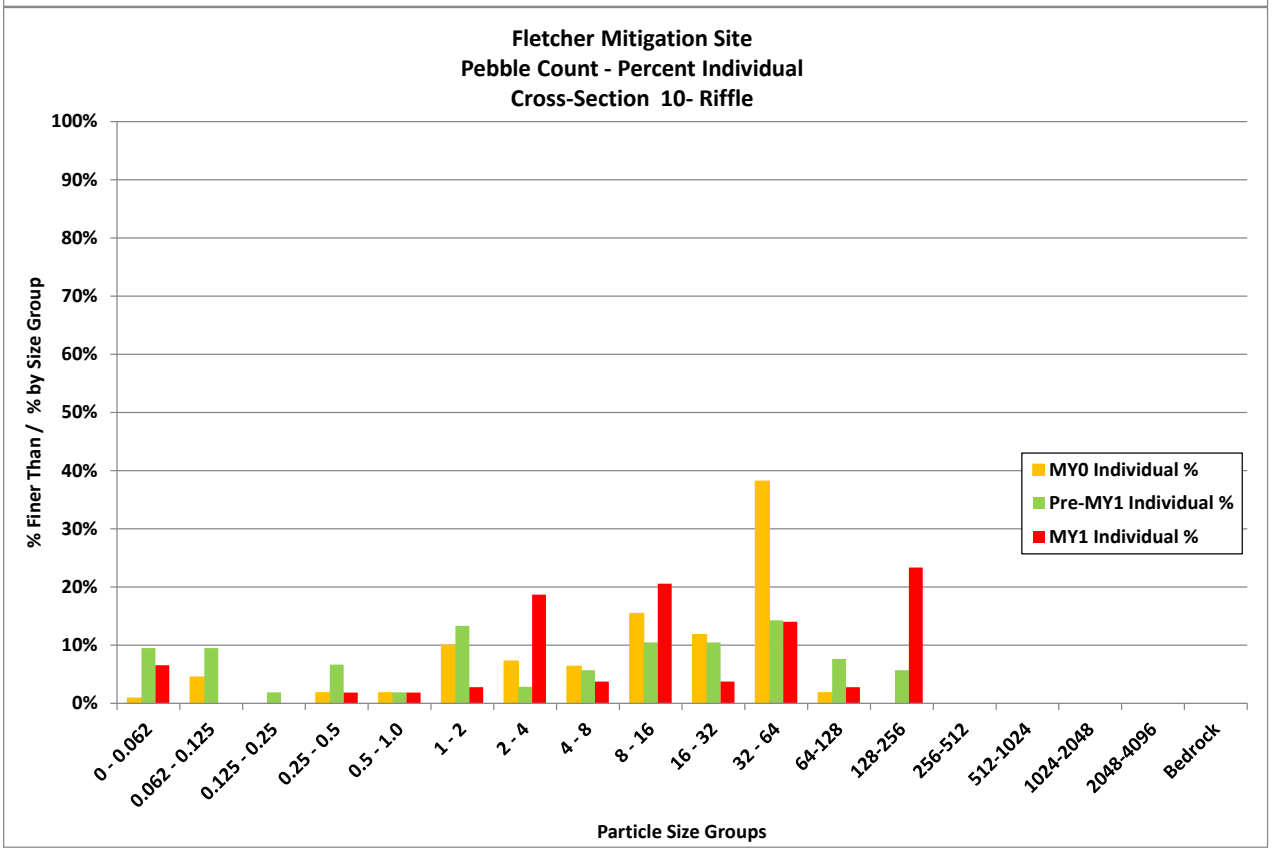
Fletcher Mitigation Site			
Cross Section 7 - Riffle			
Monitoring Year - 2020; MY1			
Bed Surface Material Particle Size Class (mm)	**Number**	**% Individual**	**% Cumulative**
0 - 0.062	0	0.0%	0%
0.062 - 0.125	0	0.0%	0%
0.125 - 0.25	0	0.0%	0%
0.25 - 0.5	0	0.0%	0%
0.5 - 1.0	0	0.0%	0%
1 - 2	9	8.8%	9%
2 - 4	0	0.0%	9%
4 - 8	4	3.9%	13%
8 - 16	8	7.8%	21%
16 - 32	30	29.4%	50%
32 - 64	35	34.3%	84%
64-128	13	12.7%	97%
128-256	3	2.9%	100%
256-512	0	0.0%	100%
512-1024	0	0.0%	100%
1024-2048	0	0.0%	100%
2048-4096	0	0.0%	100%
Bedrock	0	0.0%	100%
Total	**102**	**100%**	**100%**
		Summary Data	
		D50	**32**
		D84	**64**
		D95	**110**


Fletcher Mitigation Site
Pebble Count - Percent Cumulative
Cross-Section 7- Riffle
% Finer Than / % by Size Group
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
0 - 0.062
0.062 - 0.125
0.125 - 0.25
0.25 - 0.5
0.5 - 1.0
1 - 2
2 - 4
4 - 8
8 - 16
16 - 32
32 - 64
64-128
128-256
256-512
512-1024
1024-2048
2048-4096
Bedrock
Particle Size Groups
MY0 Cumulative %
Pre-MY1 Cumulative %
MY1 Cumulative %

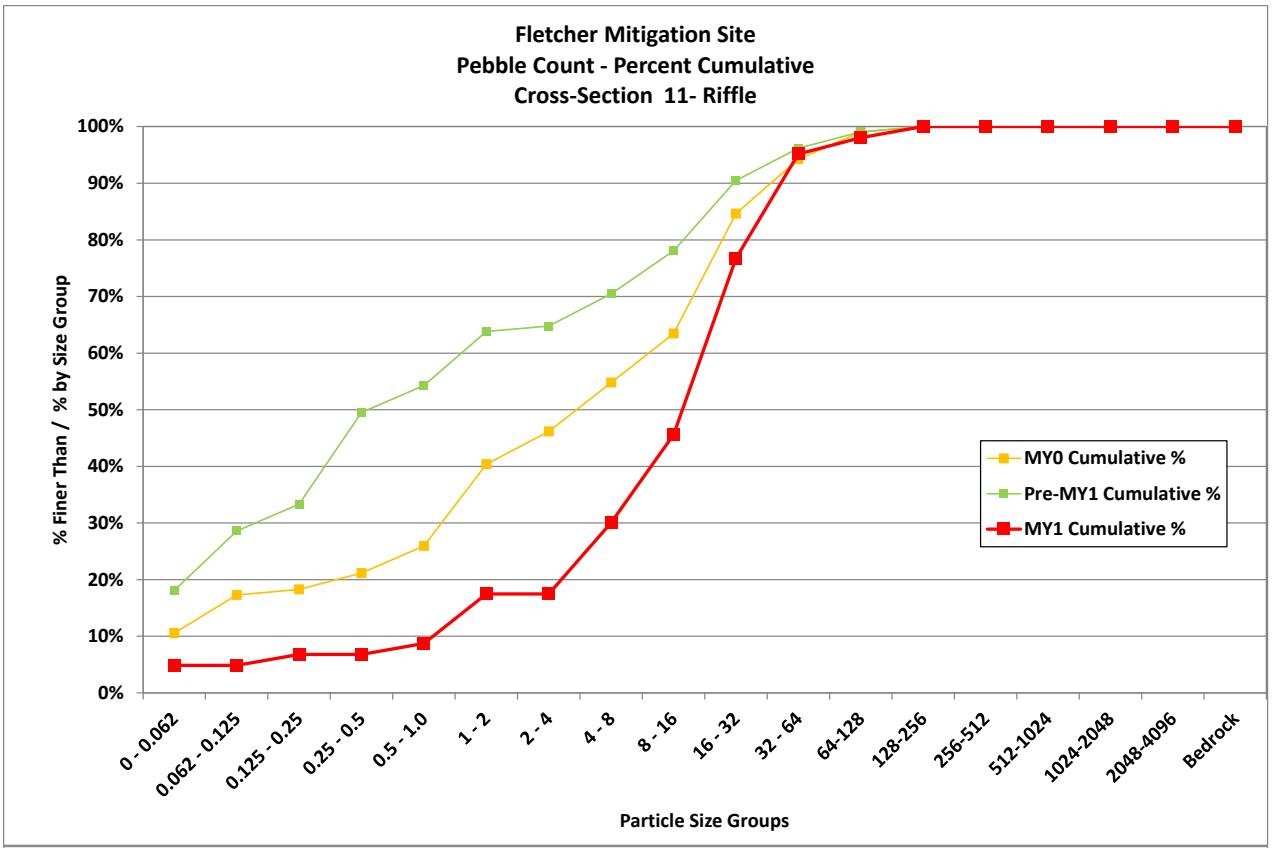

Fletcher Mitigation Site
Pebble Count - Percent Individual
Cross-Section 7- Riffle
% Finer Than / % by Size Group
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
0 - 0.062
0.062 - 0.125
0.125 - 0.25
0.25 - 0.5
0.5 - 1.0
1 - 2
2 - 4
4 - 8
8 - 16
16 - 32
32 - 64
64-128
128-256
256-512
512-1024
1024-2048
2048-4096
Bedrock
Particle Size Groups
MY0 Individual %
Pre-MY1 Individual %
MY1 Individual %

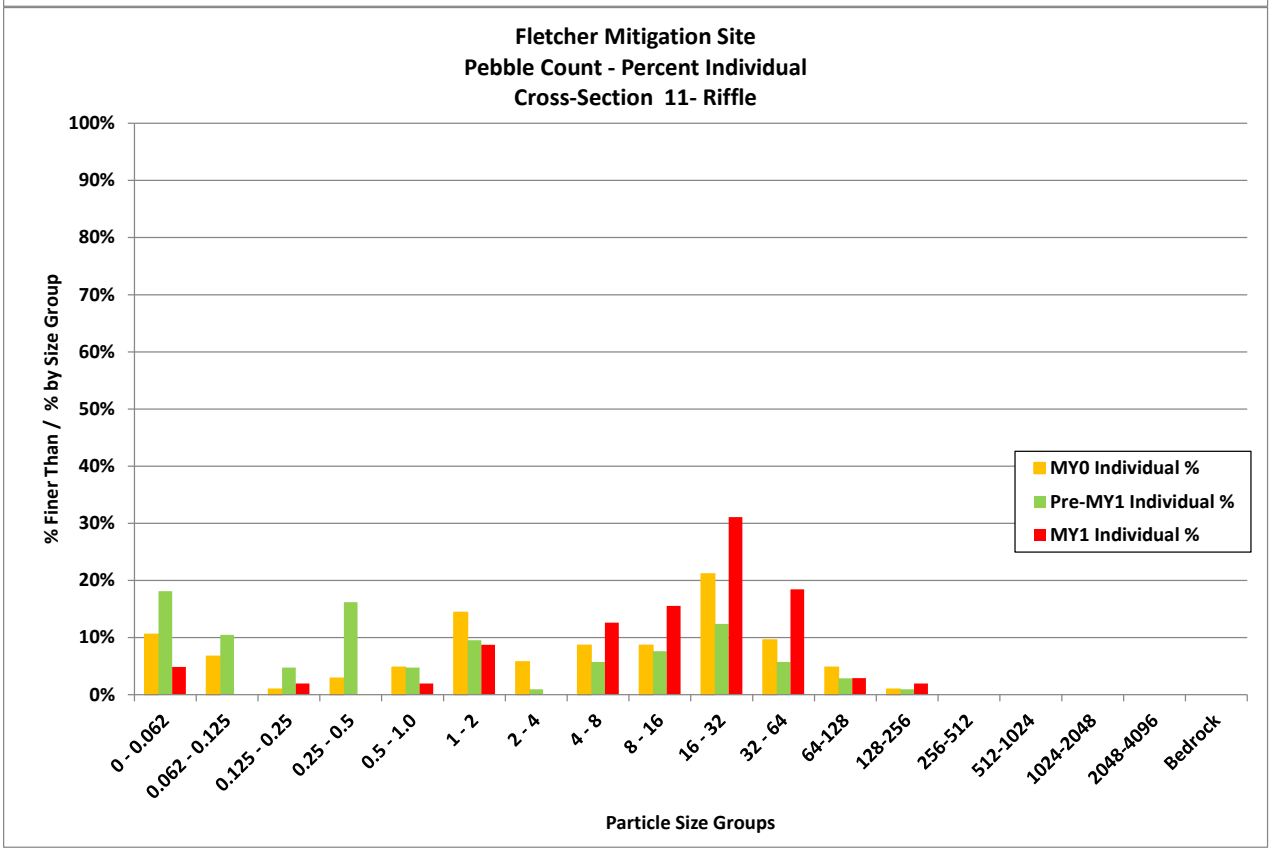
Fletcher Mitigation Site			
Cross Section 10 - Riffle			
Monitoring Year - 2020; MY1			
Bed Surface Material Particle Size Class (mm)	**Number**	**% Individual**	**% Cumulative**
0 - 0.062	7	6.5%	7%
0.062 - 0.125	0	0.0%	7%
0.125 - 0.25	0	0.0%	7%
0.25 - 0.5	2	1.9%	8%
0.5 - 1.0	2	1.9%	10%
1 - 2	3	2.8%	13%
2 - 4	20	18.7%	32%
4 - 8	4	3.7%	36%
8 - 16	22	20.6%	56%
16 - 32	4	3.7%	60%
32 - 64	15	14.0%	74%
64-128	3	2.8%	77%
128-256	25	23.4%	100%
256-512	0	0.0%	100%
512-1024	0	0.0%	100%
1024-2048	0	0.0%	100%
2048-4096	0	0.0%	100%
Bedrock	0	0.0%	100%
Total	**107**	**100%**	**100%**
		Summary Data	
		D50	**11**
		D84	**150**
		D95	**210**


Fletcher Mitigation Site
Pebble Count - Percent Cumulative
Cross-Section 10- Riffle
% Finer Than / % by Size Group
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
MY0 Cumulative %
Pre-MY1 Cumulative %
MY1 Cumulative %
0 - 0.062
0.062 - 0.125
0.125 - 0.25
0.25 - 0.5
0.5 - 1.0
1 - 2
2 - 4
4 - 8
8 - 16
16 - 32
32 - 64
64-128
128-256
256-512
512-1024
1024-2048
2048-4096
Bedrock
Particle Size Groups

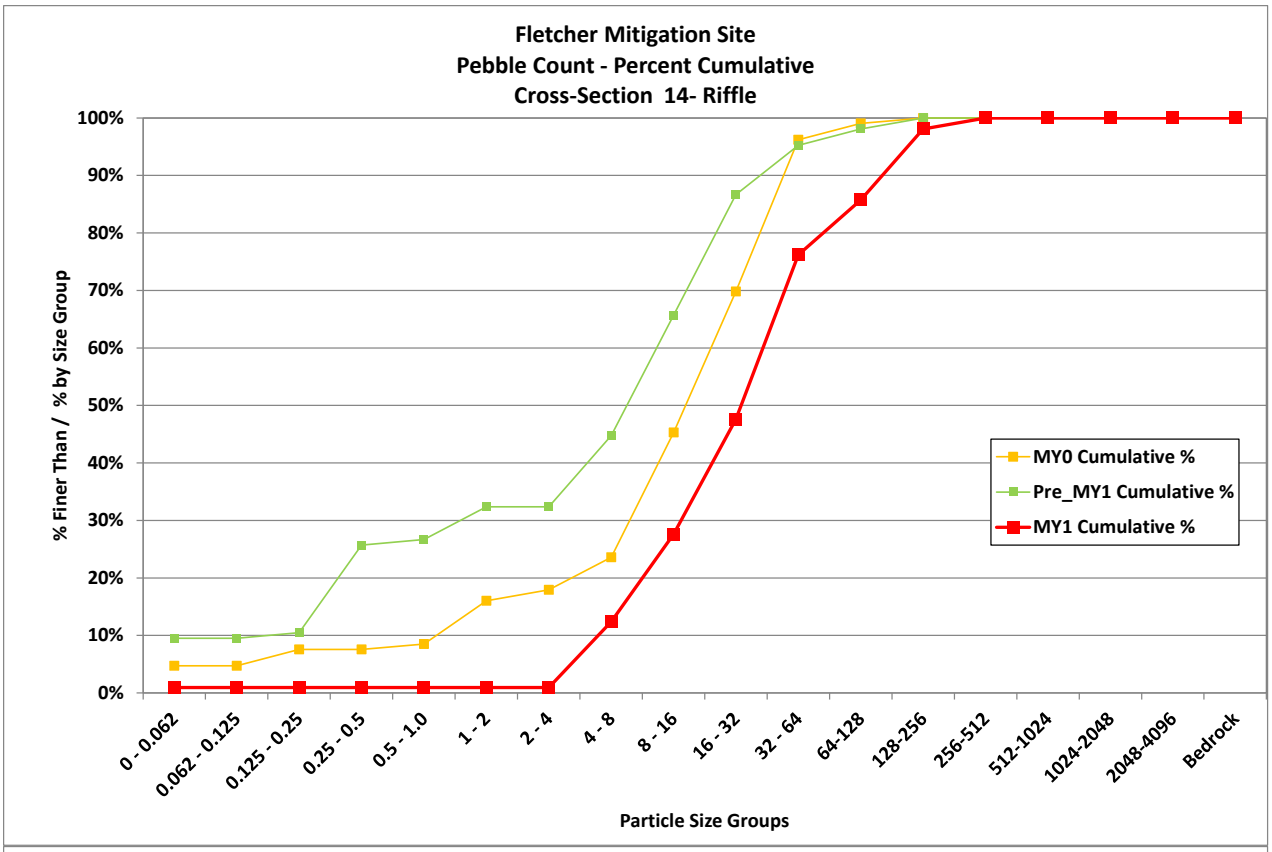

Fletcher Mitigation Site
Pebble Count - Percent Individual
Cross-Section 10- Riffle
% Finer Than / % by Size Group
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
MY0 Individual %
Pre-MY1 Individual %
MY1 Individual %
0 - 0.062
0.062 - 0.125
0.125 - 0.25
0.25 - 0.5
0.5 - 1.0
1 - 2
2 - 4
4 - 8
8 - 16
16 - 32
32 - 64
64-128
128-256
256-512
512-1024
1024-2048
2048-4096
Bedrock
Particle Size Groups

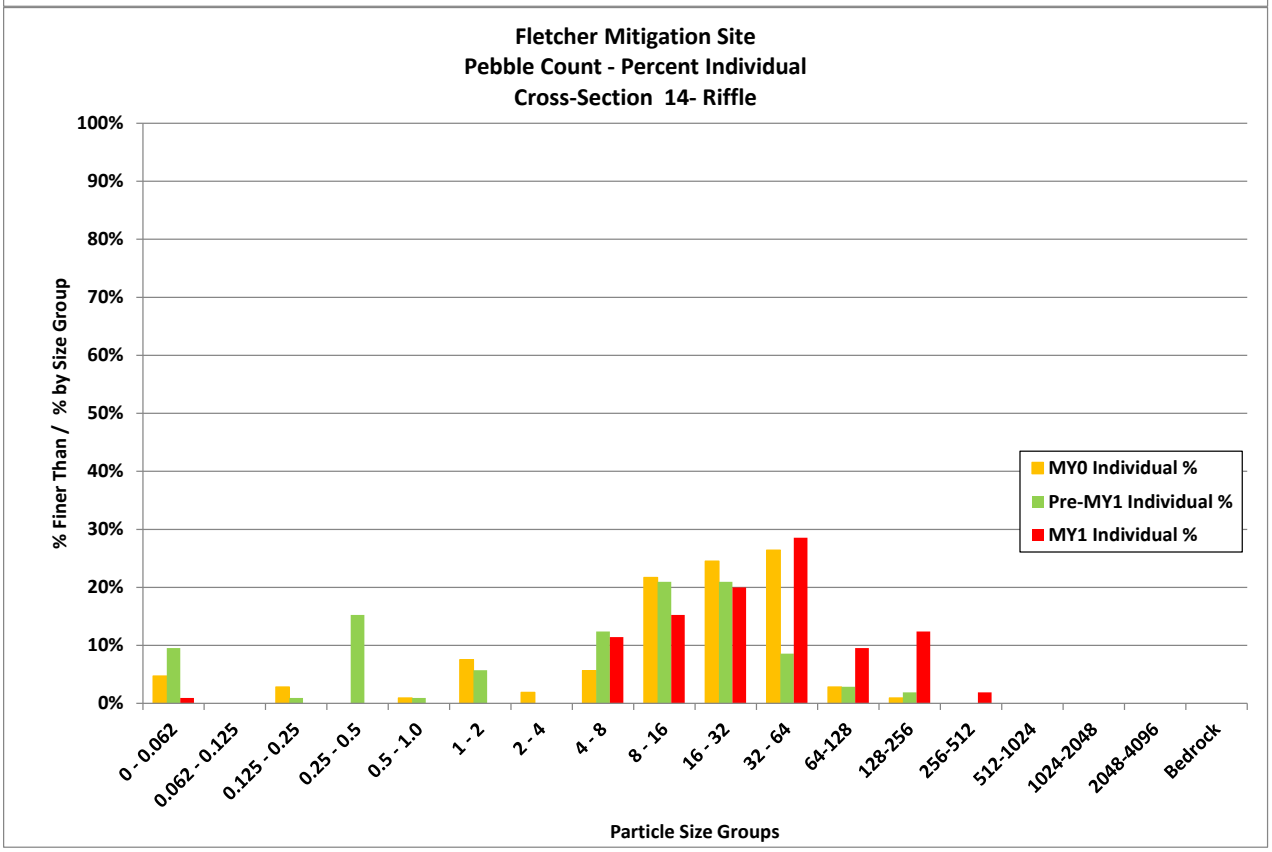
Fletcher Mitigation Site			
Cross Section 11 - Riffle			
Monitoring Year - 2020; MY1			
Bed Surface Material Particle Size Class (mm)	**Number**	**% Individual**	**% Cumulative**
0 - 0.062	5	4.9%	5%
0.062 - 0.125	0	0.0%	5%
0.125 - 0.25	2	1.9%	7%
0.25 - 0.5	0	0.0%	7%
0.5 - 1.0	2	1.9%	9%
1 - 2	9	8.7%	17%
2 - 4	0	0.0%	17%
4 - 8	13	12.6%	30%
8 - 16	16	15.5%	46%
16 - 32	32	31.1%	77%
32 - 64	19	18.4%	95%
64-128	3	2.9%	98%
128-256	2	1.9%	100%
256-512	0	0.0%	100%
512-1024	0	0.0%	100%
1024-2048	0	0.0%	100%
2048-4096	0	0.0%	100%
Bedrock	0	0.0%	100%
Total	**103**	**100%**	**100%**
		Summary Data	
		D50	**18**
		D84	**40**
		D95	**64**


Fletcher Mitigation Site
Pebble Count - Percent Cumulative
Cross-Section 11- Riffle
% Finer Than / % by Size Group
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
MY0 Cumulative %
Pre-MY1 Cumulative %
MY1 Cumulative %
0 - 0.062
0.062 - 0.125
0.125 - 0.25
0.25 - 0.5
0.5 - 1.0
1 - 2
2 - 4
4 - 8
8 - 16
16 - 32
32 - 64
64-128
128-256
256-512
512-1024
1024-2048
2048-4096
Bedrock
Particle Size Groups


Fletcher Mitigation Site
Pebble Count - Percent Individual
Cross-Section 11- Riffle
% Finer Than / % by Size Group
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
MY0 Individual %
Pre-MY1 Individual %
MY1 Individual %
0 - 0.062
0.062 - 0.125
0.125 - 0.25
0.25 - 0.5
0.5 - 1.0
1 - 2
2 - 4
4 - 8
8 - 16
16 - 32
32 - 64
64-128
128-256
256-512
512-1024
1024-2048
2048-4096
Bedrock
Particle Size Groups

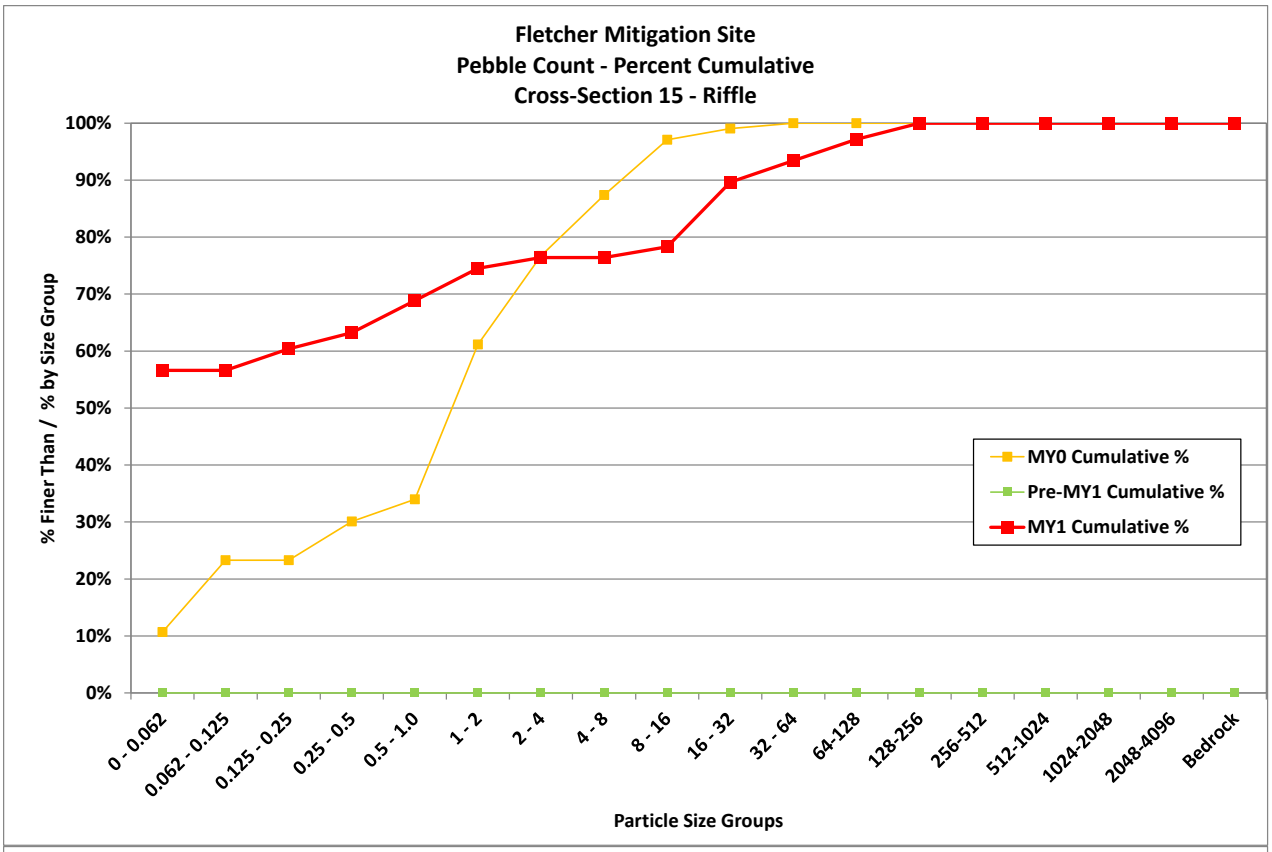
Fletcher Mitigation Site			
Cross Section 14 - Riffle			
Monitoring Year - 2020; MY1			
Bed Surface Material Particle Size Class (mm)	**Number**	**% Individual**	**% Cumulative**
0 - 0.062	1	1.0%	1%
0.062 - 0.125	0	0.0%	1%
0.125 - 0.25	0	0.0%	1%
0.25 - 0.5	0	0.0%	1%
0.5 - 1.0	0	0.0%	1%
1 - 2	0	0.0%	1%
2 - 4	0	0.0%	1%
4 - 8	12	11.4%	12%
8 - 16	16	15.2%	28%
16 - 32	21	20.0%	48%
32 - 64	30	28.6%	76%
64-128	10	9.5%	86%
128-256	13	12.4%	98%
256-512	2	1.9%	100%
512-1024	0	0.0%	100%
1024-2048	0	0.0%	100%
2048-4096	0	0.0%	100%
Bedrock	0	0.0%	100%
Total	**105**	**100%**	**100%**
		Summary Data	
		D50	**33**
		D84	**120**
		D95	**200**

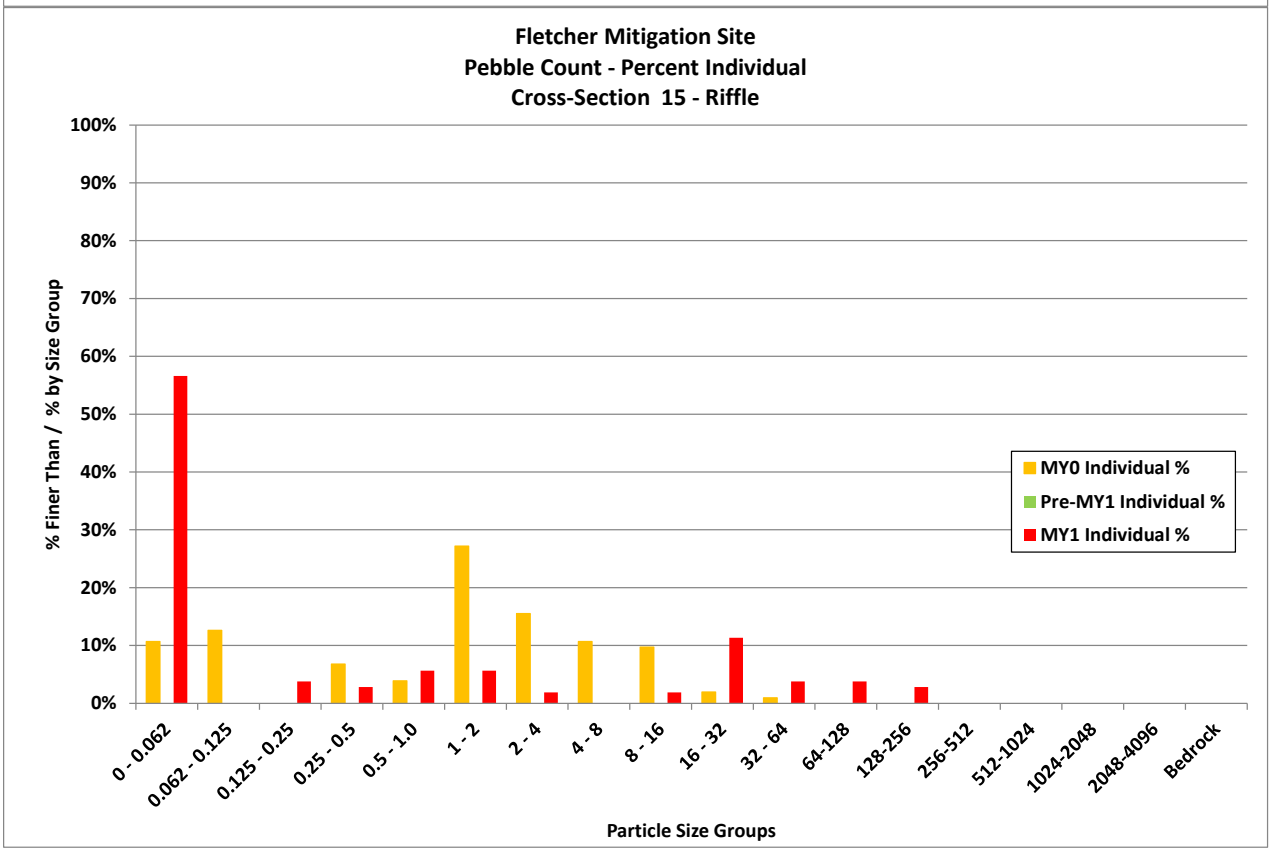

Fletcher Mitigation Site
Pebble Count - Percent Cumulative
Cross-Section 14- Riffle
% Finer Than / % by Size Group
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
MY0 Cumulative %
Pre_MY1 Cumulative %
MY1 Cumulative %
0 - 0.062
0.062 - 0.125
0.125 - 0.25
0.25 - 0.5
0.5 - 1.0
1 - 2
2 - 4
4 - 8
8 - 16
16 - 32
32 - 64
64-128
128-256
256-512
512-1024
1024-2048
2048-4096
Bedrock
Particle Size Groups


Fletcher Mitigation Site
Pebble Count - Percent Individual
Cross-Section 14- Riffle
% Finer Than / % by Size Group
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
MY0 Individual %
Pre-MY1 Individual %
MY1 Individual %
0 - 0.062
0.062 - 0.125
0.125 - 0.25
0.25 - 0.5
0.5 - 1.0
1 - 2
2 - 4
4 - 8
8 - 16
16 - 32
32 - 64
64-128
128-256
256-512
512-1024
1024-2048
2048-4096
Bedrock
Particle Size Groups

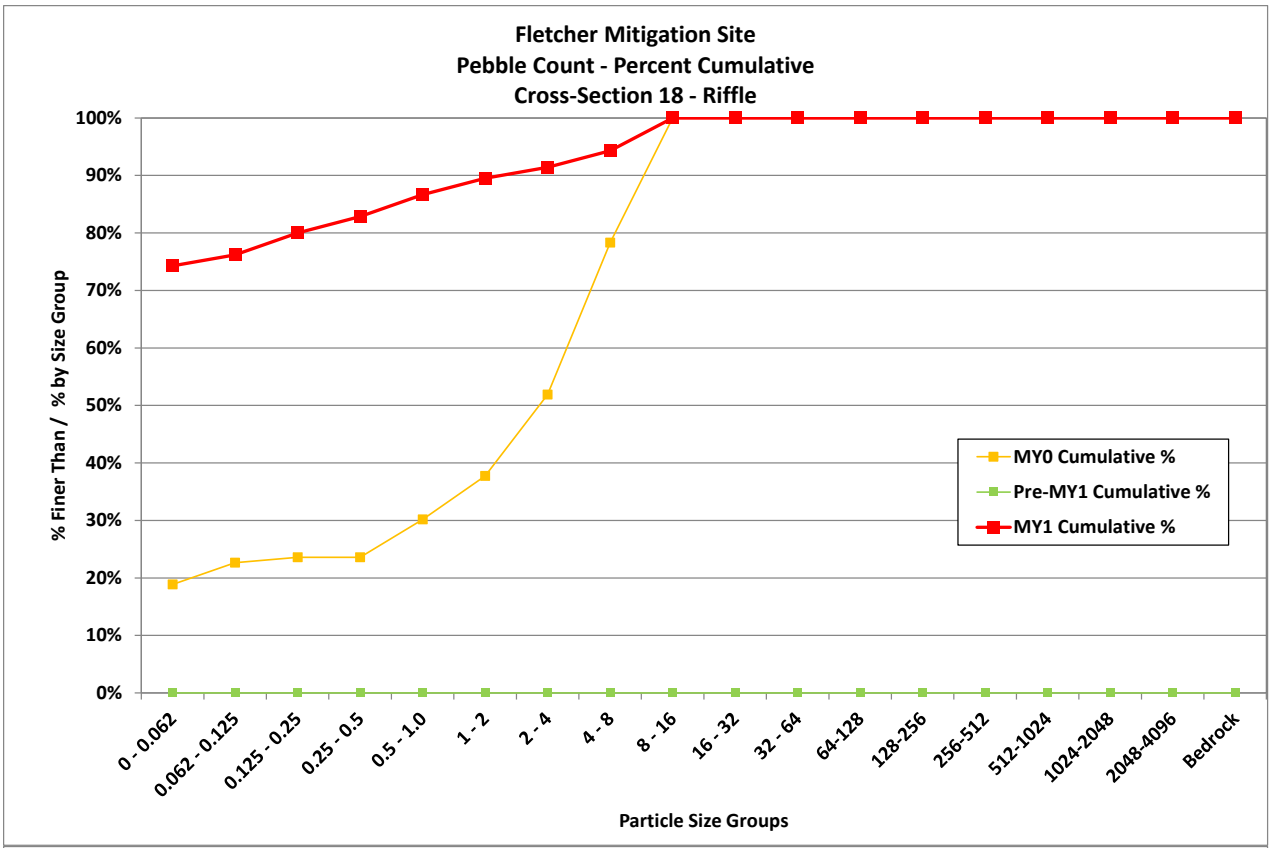
Fletcher Mitigation Site			
Cross Section 15 - Riffle			
Monitoring Year - 2020; MY1			
Bed Surface Material Particle Size Class (mm)	**Number**	**% Individual**	**% Cumulative**
0 - 0.062	60	56.6%	57%
0.062 - 0.125	0	0.0%	57%
0.125 - 0.25	4	3.8%	60%
0.25 - 0.5	3	2.8%	63%
0.5 - 1.0	6	5.7%	69%
1 - 2	6	5.7%	75%
2 - 4	2	1.9%	76%
4 - 8	0	0.0%	76%
8 - 16	2	1.9%	78%
16 - 32	12	11.3%	90%
32 - 64	4	3.8%	93%
64-128	4	3.8%	97%
128-256	3	2.8%	100%
256-512	0	0.0%	100%
512-1024	0	0.0%	100%
1024-2048	0	0.0%	100%
2048-4096	0	0.0%	100%
Bedrock	0	0.0%	100%
Total	**106**	**100%**	**100%**

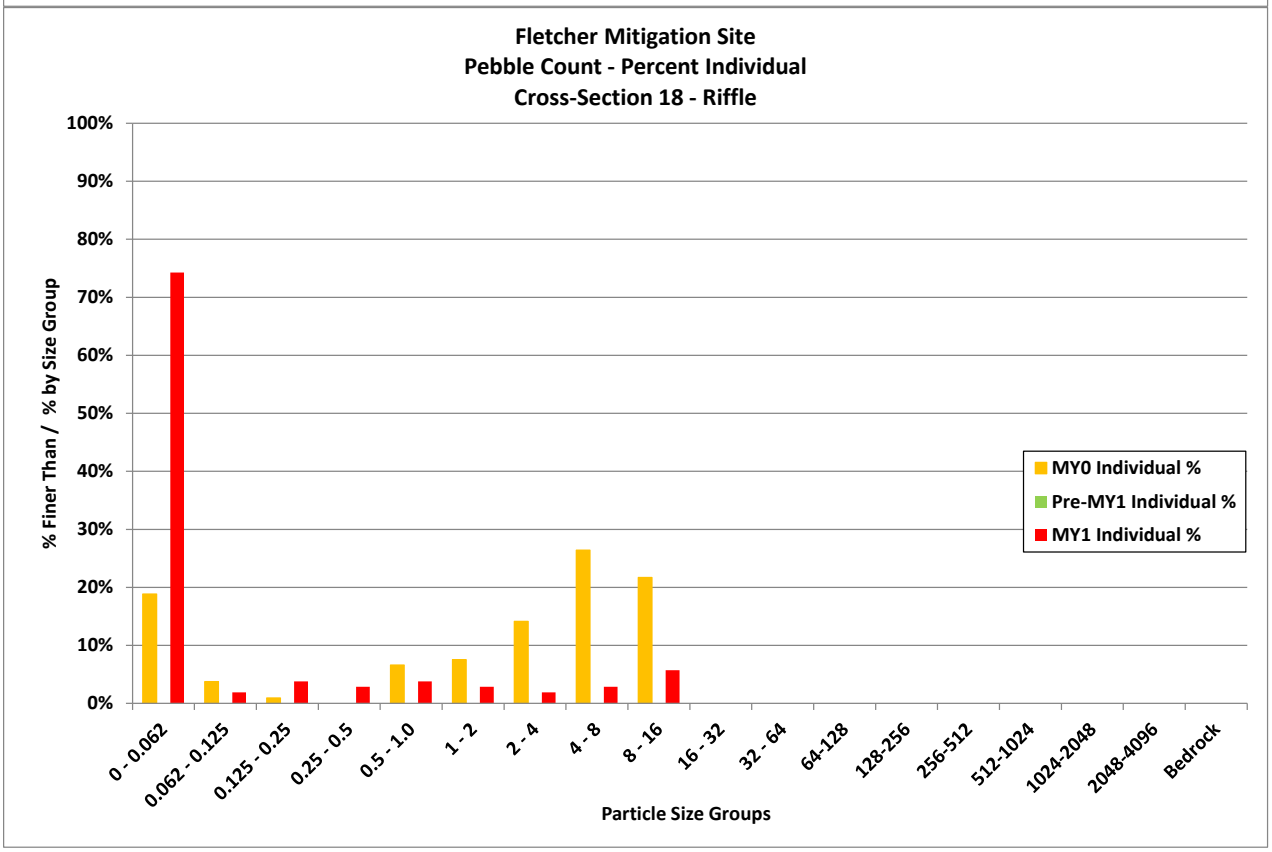
Summary Data	
D50	**0.062**
D84	**26**
D95	**86**


Fletcher Mitigation Site
Pebble Count - Percent Cumulative
Cross-Section 15 - Riffle
% Finer Than / % by Size Group
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
MY0 Cumulative %
Pre-MY1 Cumulative %
MY1 Cumulative %
0 - 0.062
0.062 - 0.125
0.125 - 0.25
0.25 - 0.5
0.5 - 1.0
1 - 2
2 - 4
4 - 8
8 - 16
16 - 32
32 - 64
64-128
128-256
256-512
512-1024
1024-2048
2048-4096
Bedrock
Particle Size Groups


Fletcher Mitigation Site
Pebble Count - Percent Individual
Cross-Section 15 - Riffle
% Finer Than / % by Size Group
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
MY0 Individual %
Pre-MY1 Individual %
MY1 Individual %
0 - 0.062
0.062 - 0.125
0.125 - 0.25
0.25 - 0.5
0.5 - 1.0
1 - 2
2 - 4
4 - 8
8 - 16
16 - 32
32 - 64
64-128
128-256
256-512
512-1024
1024-2048
2048-4096
Bedrock
Particle Size Groups

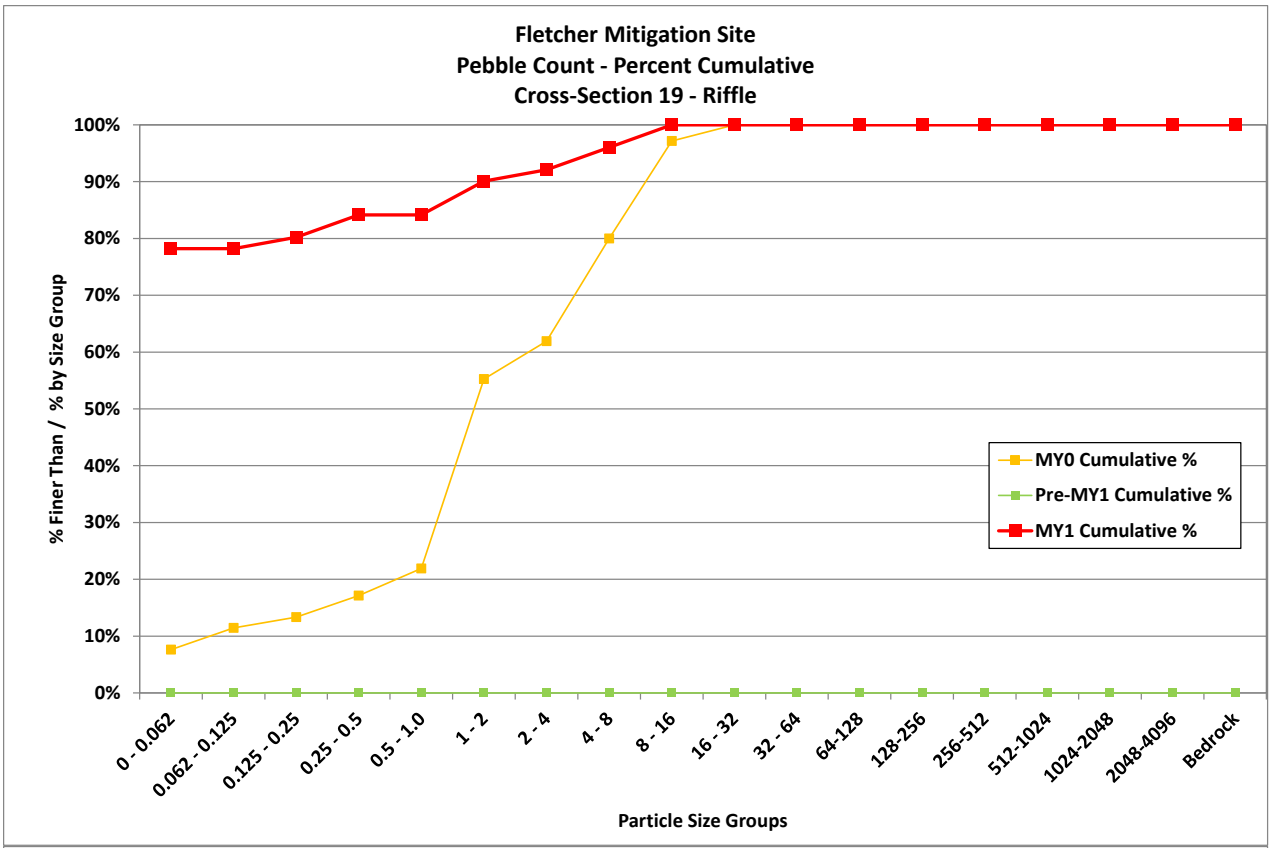
Fletcher Mitigation Site			
Cross Section 18 - Riffle			
Monitoring Year - 2020; MY1			
Bed Surface Material Particle Size Class (mm)	**Number**	**% Individual**	**% Cumulative**
0 - 0.062	78	74.3%	74%
0.062 - 0.125	2	1.9%	76%
0.125 - 0.25	4	3.8%	80%
0.25 - 0.5	3	2.9%	83%
0.5 - 1.0	4	3.8%	87%
1 - 2	3	2.9%	90%
2 - 4	2	1.9%	91%
4 - 8	3	2.9%	94%
8 - 16	6	5.7%	100%
16 - 32	0	0.0%	100%
32 - 64	0	0.0%	100%
64-128	0	0.0%	100%
128-256	0	0.0%	100%
256-512	0	0.0%	100%
512-1024	0	0.0%	100%
1024-2048	0	0.0%	100%
2048-4096	0	0.0%	100%
Bedrock	0	0.0%	100%
Total	**105**	**100%**	**100%**
		Summary Data	
		D50	**0.062**
		D84	**0.62**
		D95	**8.5**

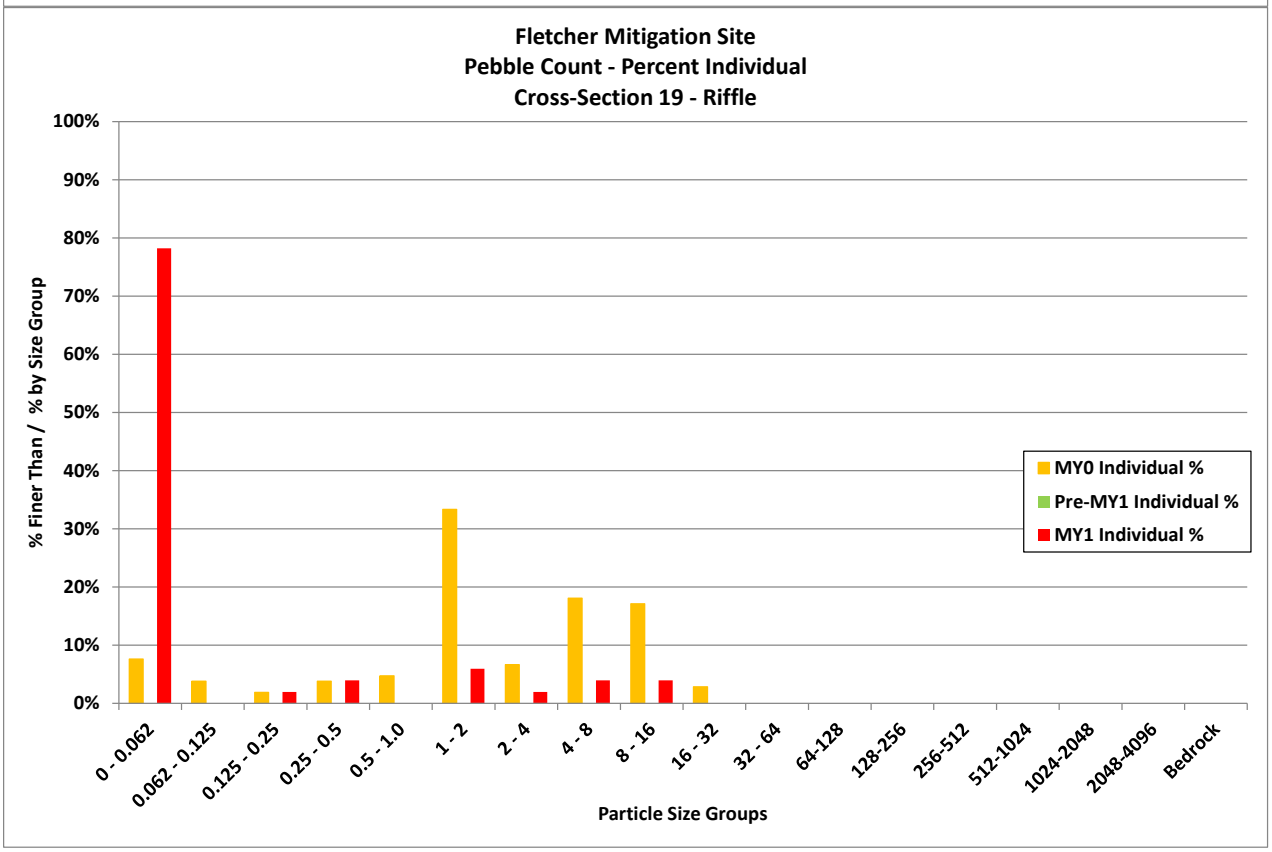

Fletcher Mitigation Site
Pebble Count - Percent Cumulative
Cross-Section 18 - Riffle
% Finer Than / % by Size Group
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
MY0 Cumulative %
Pre-MY1 Cumulative %
MY1 Cumulative %
0 - 0.062
0.062 - 0.125
0.125 - 0.25
0.25 - 0.5
0.5 - 1.0
1 - 2
2 - 4
4 - 8
8 - 16
16 - 32
32 - 64
64-128
128-256
256-512
512-1024
1024-2048
2048-4096
Bedrock
Particle Size Groups


Fletcher Mitigation Site
Pebble Count - Percent Individual
Cross-Section 18 - Riffle
% Finer Than / % by Size Group
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
MY0 Individual %
Pre-MY1 Individual %
MY1 Individual %
0 - 0.062
0.062 - 0.125
0.125 - 0.25
0.25 - 0.5
0.5 - 1.0
1 - 2
2 - 4
4 - 8
8 - 16
16 - 32
32 - 64
64-128
128-256
256-512
512-1024
1024-2048
2048-4096
Bedrock
Particle Size Groups

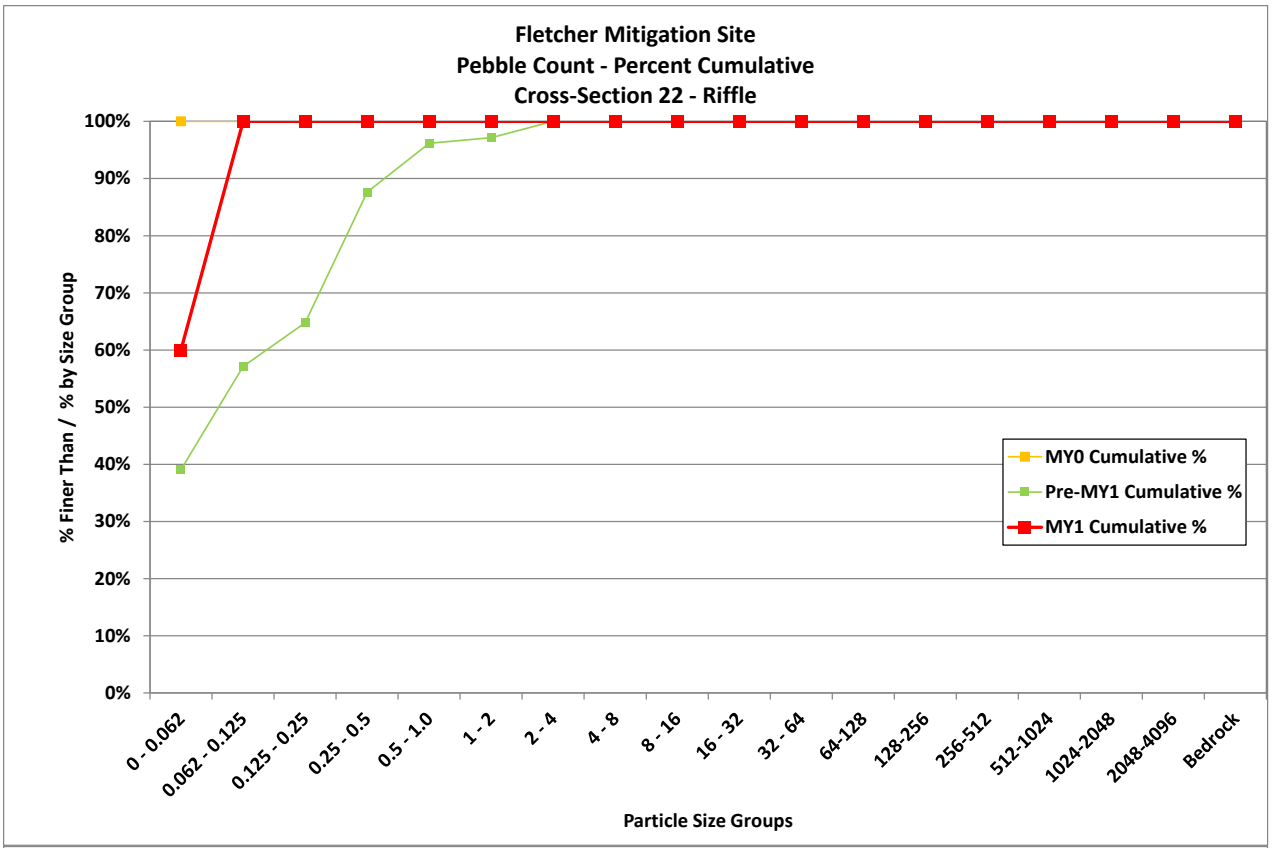
Fletcher Mitigation Site			
Cross Section 19 - Riffle			
Monitoring Year - 2020; MY1			
Bed Surface Material Particle Size Class (mm)	**Number**	**% Individual**	**% Cumulative**
0 - 0.062	79	78.2%	78%
0.062 - 0.125	0	0.0%	78%
0.125 - 0.25	2	2.0%	80%
0.25 - 0.5	4	4.0%	84%
0.5 - 1.0	0	0.0%	84%
1 - 2	6	5.9%	90%
2 - 4	2	2.0%	92%
4 - 8	4	4.0%	96%
8 - 16	4	4.0%	100%
16 - 32	0	0.0%	100%
32 - 64	0	0.0%	100%
64-128	0	0.0%	100%
128-256	0	0.0%	100%
256-512	0	0.0%	100%
512-1024	0	0.0%	100%
1024-2048	0	0.0%	100%
2048-4096	0	0.0%	100%
Bedrock	0	0.0%	100%
Total	**101**	**100%**	**100%**

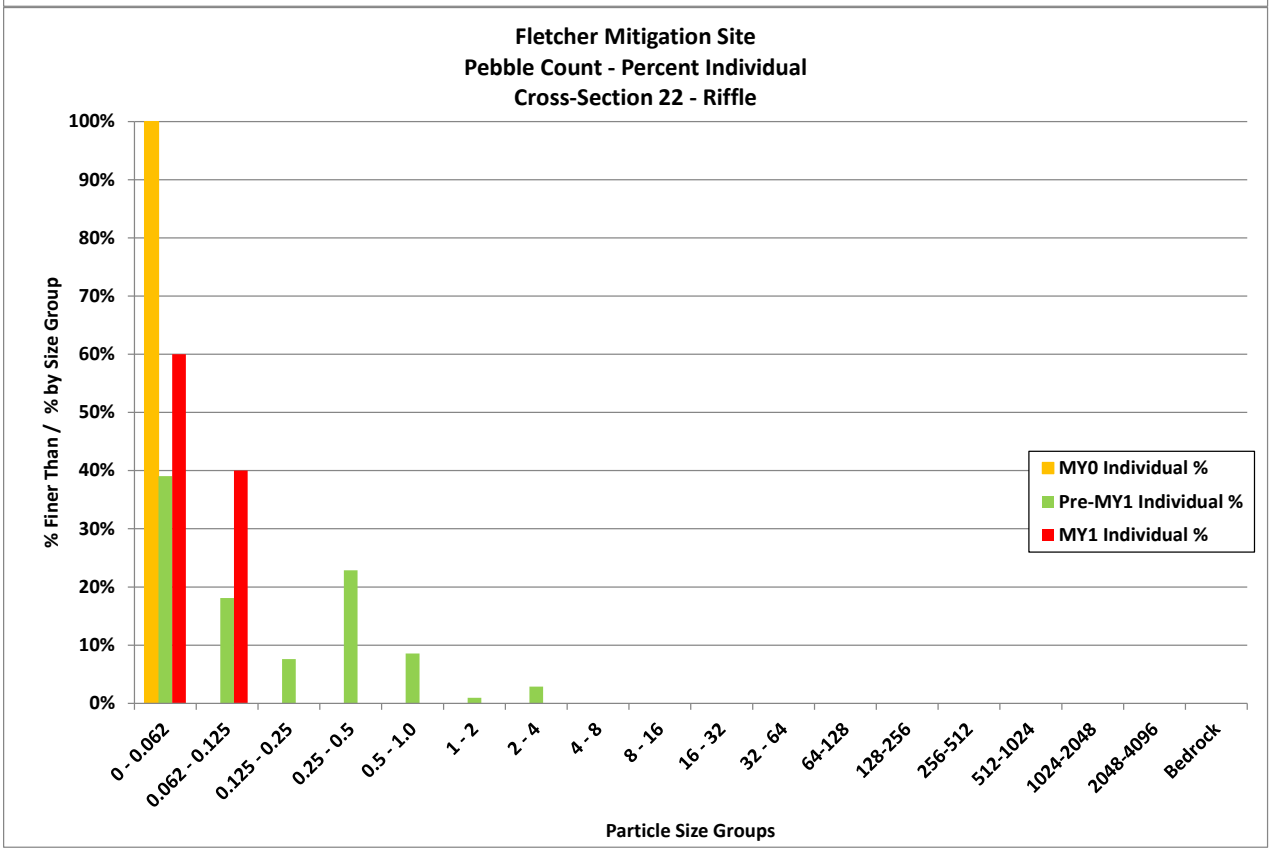
Summary Data	
D50	**0.062**
D84	**0.49**
D95	**6.9**


Fletcher Mitigation Site
Pebble Count - Percent Cumulative
Cross-Section 19 - Riffle
% Finer Than / % by Size Group
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
MY0 Cumulative %
Pre-MY1 Cumulative %
MY1 Cumulative %
0 - 0.062
0.062 - 0.125
0.125 - 0.25
0.25 - 0.5
0.5 - 1.0
1 - 2
2 - 4
4 - 8
8 - 16
16 - 32
32 - 64
64-128
128-256
256-512
512-1024
1024-2048
2048-4096
Bedrock
Particle Size Groups


Fletcher Mitigation Site
Pebble Count - Percent Individual
Cross-Section 19 - Riffle
% Finer Than / % by Size Group
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
MY0 Individual %
Pre-MY1 Individual %
MY1 Individual %
0 - 0.062
0.062 - 0.125
0.125 - 0.25
0.25 - 0.5
0.5 - 1.0
1 - 2
2 - 4
4 - 8
8 - 16
16 - 32
32 - 64
64-128
128-256
256-512
512-1024
1024-2048
2048-4096
Bedrock
Particle Size Groups

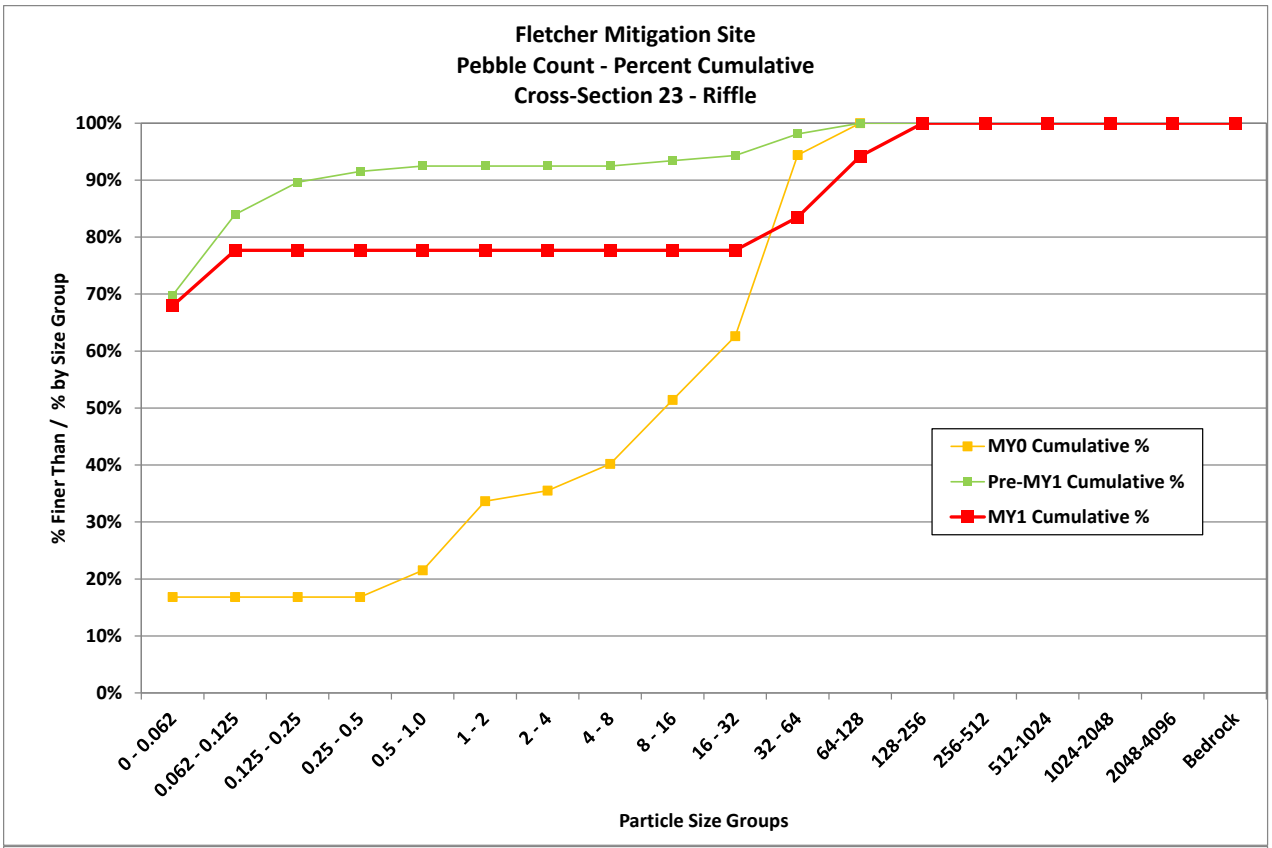
Fletcher Mitigation Site			
Cross Section 22 - Riffle			
Monitoring Year - 2020; MY1			
Bed Surface Material Particle Size Class (mm)	**Number**	**% Individual**	**% Cumulative**
0 - 0.062	60	60.0%	60%
0.062 - 0.125	40	40.0%	100%
0.125 - 0.25	0	0.0%	100%
0.25 - 0.5	0	0.0%	100%
0.5 - 1.0	0	0.0%	100%
1 - 2	0	0.0%	100%
2 - 4	0	0.0%	100%
4 - 8	0	0.0%	100%
8 - 16	0	0.0%	100%
16 - 32	0	0.0%	100%
32 - 64	0	0.0%	100%
64-128	0	0.0%	100%
128-256	0	0.0%	100%
256-512	0	0.0%	100%
512-1024	0	0.0%	100%
1024-2048	0	0.0%	100%
2048-4096	0	0.0%	100%
Bedrock	0	0.0%	100%
Total	**100**	**100%**	**100%**
		Summary Data	
		D50	**0.062**
		D84	**0.094**
		D95	**0.11**

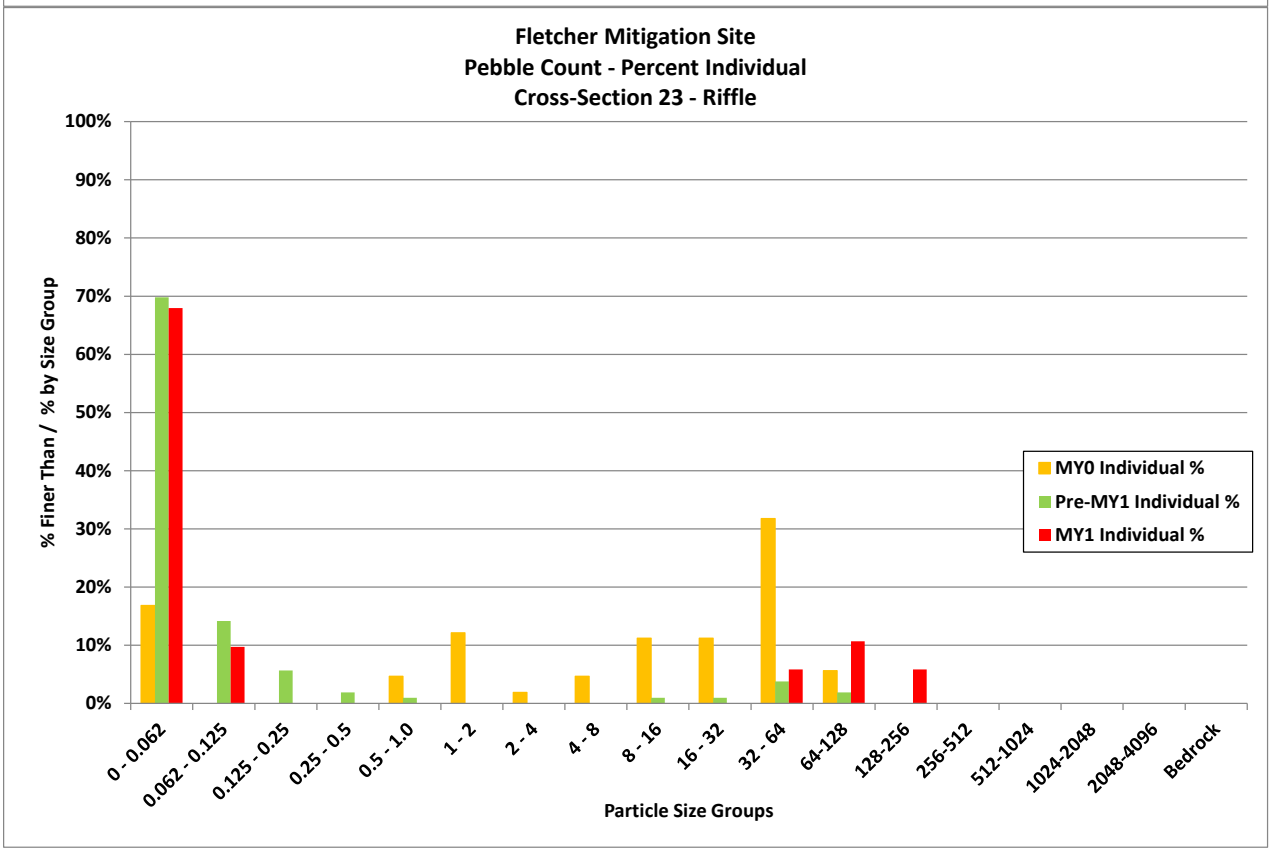

Fletcher Mitigation Site
Pebble Count - Percent Cumulative
Cross-Section 22 - Riffle
% Finer Than / % by Size Group
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
MY0 Cumulative %
Pre-MY1 Cumulative %
MY1 Cumulative %
0 - 0.062
0.062 - 0.125
0.125 - 0.25
0.25 - 0.5
0.5 - 1.0
1 - 2
2 - 4
4 - 8
8 - 16
16 - 32
32 - 64
64-128
128-256
256-512
512-1024
1024-2048
2048-4096
Bedrock
Particle Size Groups


Fletcher Mitigation Site
Pebble Count - Percent Individual
Cross-Section 22 - Riffle
% Finer Than / % by Size Group
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
MY0 Individual %
Pre-MY1 Individual %
MY1 Individual %
0 - 0.062
0.062 - 0.125
0.125 - 0.25
0.25 - 0.5
0.5 - 1.0
1 - 2
2 - 4
4 - 8
8 - 16
16 - 32
32 - 64
64-128
128-256
256-512
512-1024
1024-2048
2048-4096
Bedrock
Particle Size Groups

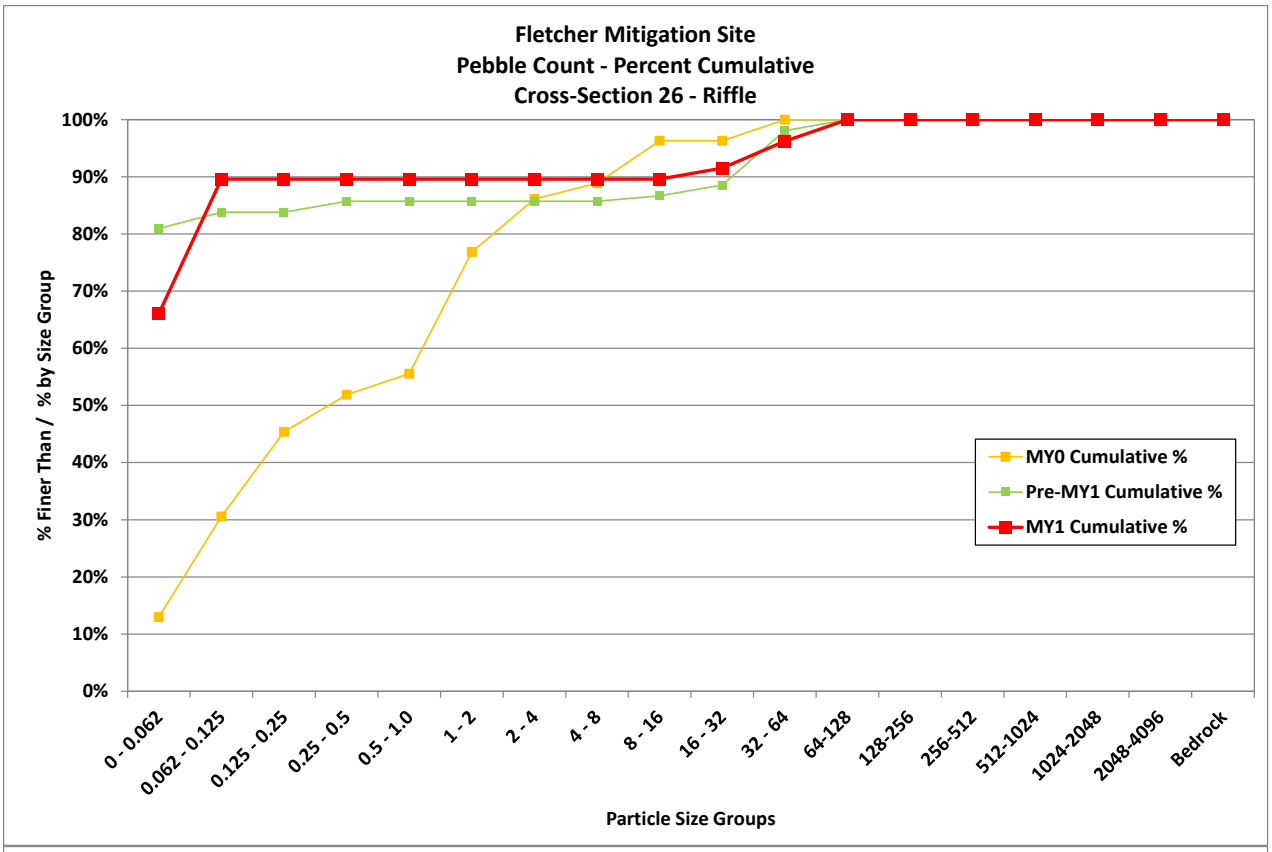
Fletcher Mitigation Site			
Cross Section 23 - Riffle			
Monitoring Year - 2020; MY1			
Bed Surface Material Particle Size Class (mm)	**Number**	**% Individual**	**% Cumulative**
0 - 0.062	70	68.0%	68%
0.062 - 0.125	10	9.7%	78%
0.125 - 0.25	0	0.0%	78%
0.25 - 0.5	0	0.0%	78%
0.5 - 1.0	0	0.0%	78%
1 - 2	0	0.0%	78%
2 - 4	0	0.0%	78%
4 - 8	0	0.0%	78%
8 - 16	0	0.0%	78%
16 - 32	0	0.0%	78%
32 - 64	6	5.8%	83%
64-128	11	10.7%	94%
128-256	6	5.8%	100%
256-512	0	0.0%	100%
512-1024	0	0.0%	100%
1024-2048	0	0.0%	100%
2048-4096	0	0.0%	100%
Bedrock	0	0.0%	100%
Total	**103**	**100%**	**100%**

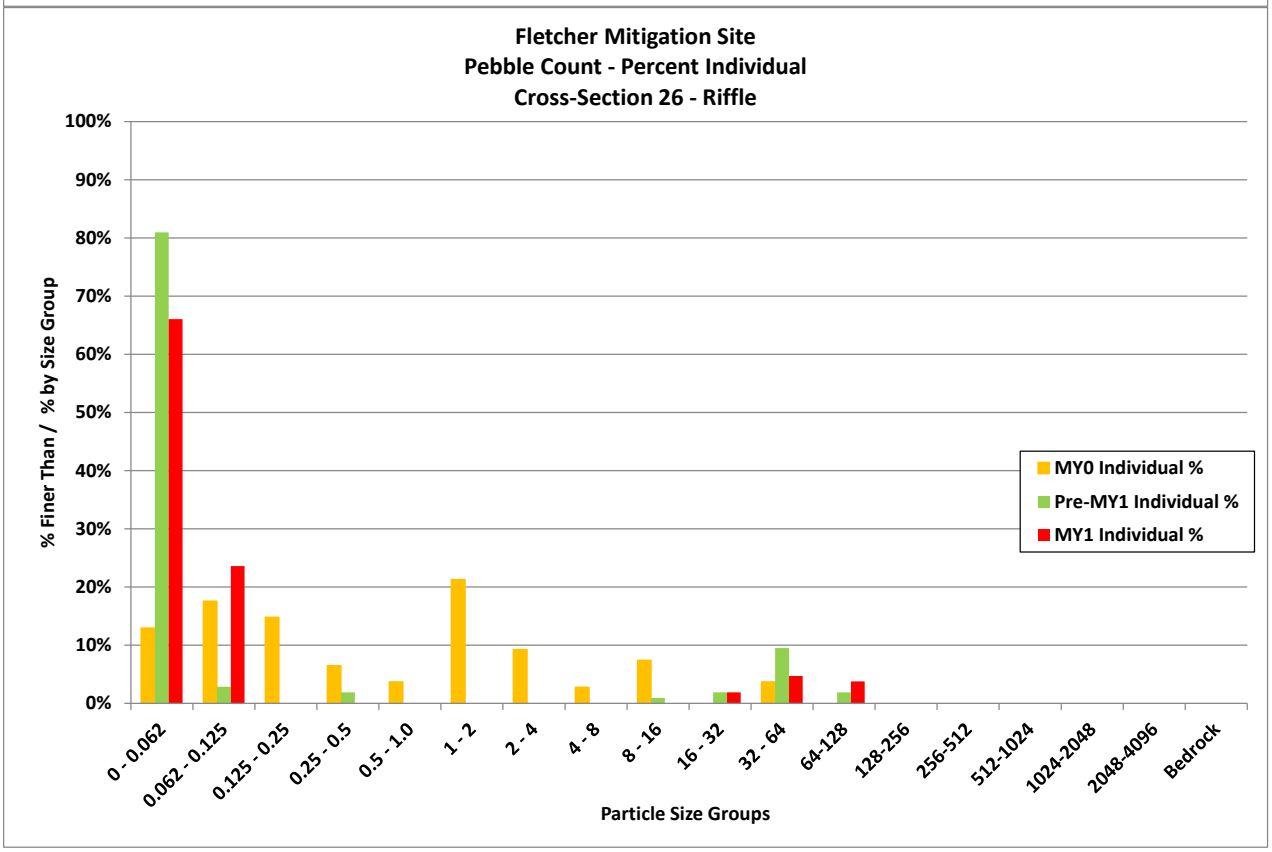
Summary Data	
D50	**0.062**
D84	**67**
D95	**130**


Fletcher Mitigation Site
Pebble Count - Percent Cumulative
Cross-Section 23 - Riffle
% Finer Than / % by Size Group
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
MY0 Cumulative %
Pre-MY1 Cumulative %
MY1 Cumulative %
0 - 0.062
0.062 - 0.125
0.125 - 0.25
0.25 - 0.5
0.5 - 1.0
1 - 2
2 - 4
4 - 8
8 - 16
16 - 32
32 - 64
64-128
128-256
256-512
512-1024
1024-2048
2048-4096
Bedrock
Particle Size Groups

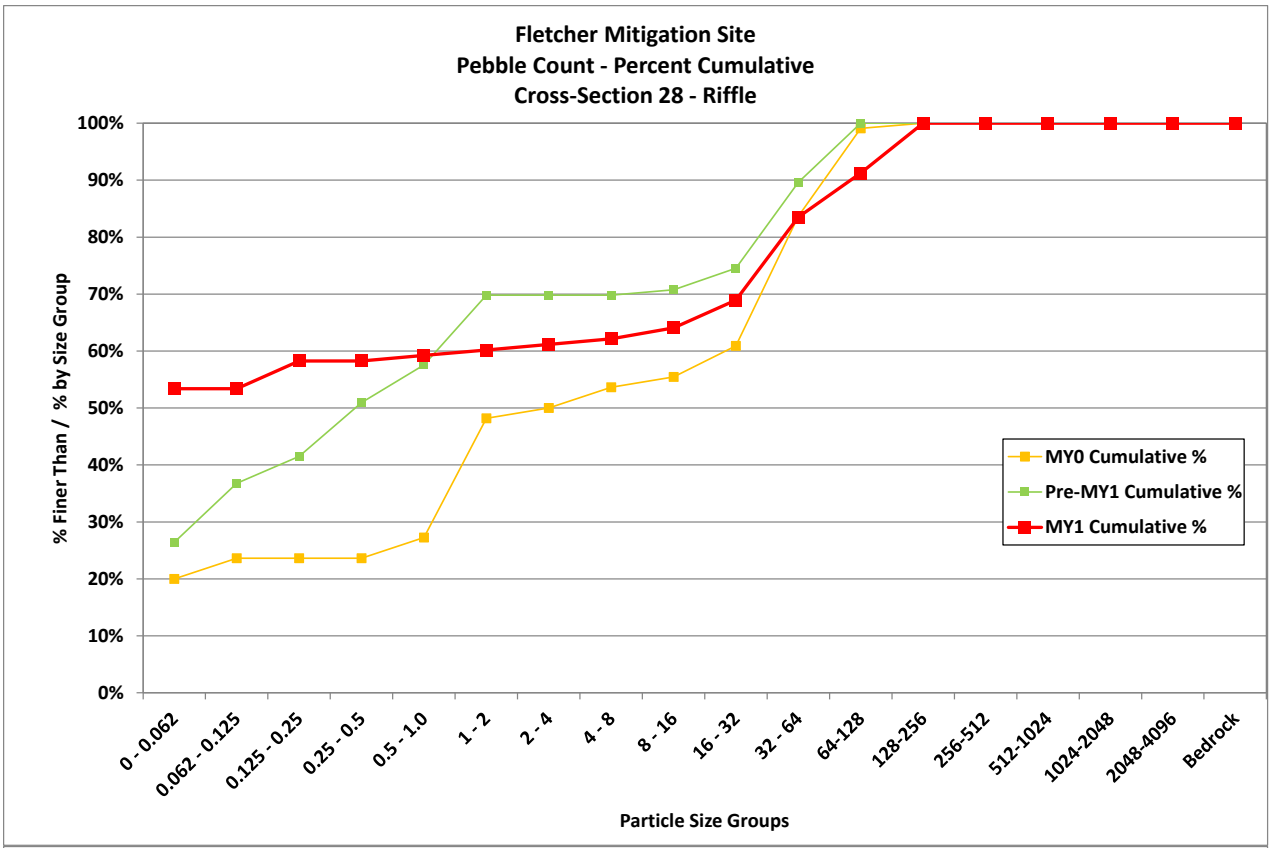

Fletcher Mitigation Site
Pebble Count - Percent Individual
Cross-Section 23 - Riffle
% Finer Than / % by Size Group
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
MY0 Individual %
Pre-MY1 Individual %
MY1 Individual %
0 - 0.062
0.062 - 0.125
0.125 - 0.25
0.25 - 0.5
0.5 - 1.0
1 - 2
2 - 4
4 - 8
8 - 16
16 - 32
32 - 64
64-128
128-256
256-512
512-1024
1024-2048
2048-4096
Bedrock
Particle Size Groups

Fletcher Mitigation Site			
Cross Section 26 - Riffle			
Monitoring Year - 2020; MY1			
Bed Surface Material Particle Size Class (mm)	**Number**	**% Individual**	**% Cumulative**
0 - 0.062	70	66.0%	66%
0.062 - 0.125	25	23.6%	90%
0.125 - 0.25	0	0.0%	90%
0.25 - 0.5	0	0.0%	90%
0.5 - 1.0	0	0.0%	90%
1 - 2	0	0.0%	90%
2 - 4	0	0.0%	90%
4 - 8	0	0.0%	90%
8 - 16	0	0.0%	90%
16 - 32	2	1.9%	92%
32 - 64	5	4.7%	96%
64-128	4	3.8%	100%
128-256	0	0.0%	100%
256-512	0	0.0%	100%
512-1024	0	0.0%	100%
1024-2048	0	0.0%	100%
2048-4096	0	0.0%	100%
Bedrock	0	0.0%	100%
Total	**106**	**100%**	**100%**
		Summary Data	
		D50	**0.062**
		D84	**0.11**
		D95	**55**


Fletcher Mitigation Site
Pebble Count - Percent Cumulative
Cross-Section 26 - Riffle
% Finer Than / % by Size Group
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
MY0 Cumulative %
Pre-MY1 Cumulative %
MY1 Cumulative %
0 - 0.062
0.062 - 0.125
0.125 - 0.25
0.25 - 0.5
0.5 - 1.0
1 - 2
2 - 4
4 - 8
8 - 16
16 - 32
32 - 64
64-128
128-256
256-512
512-1024
1024-2048
2048-4096
Bedrock
Particle Size Groups


Fletcher Mitigation Site
Pebble Count - Percent Individual
Cross-Section 26 - Riffle
% Finer Than / % by Size Group
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
MY0 Individual %
Pre-MY1 Individual %
MY1 Individual %
0 - 0.062
0.062 - 0.125
0.125 - 0.25
0.25 - 0.5
0.5 - 1.0
1 - 2
2 - 4
4 - 8
8 - 16
16 - 32
32 - 64
64-128
128-256
256-512
512-1024
1024-2048
2048-4096
Bedrock
Particle Size Groups

Fletcher Mitigation Site			
Cross Section 28 - Riffle			
Monitoring Year - 2020; MY1			
Bed Surface Material Particle Size Class (mm)	**Number**	**% Individual**	**% Cumulative**
0 - 0.062	55	53.4%	53%
0.062 - 0.125	0	0.0%	53%
0.125 - 0.25	5	4.9%	58%
0.25 - 0.5	0	0.0%	58%
0.5 - 1.0	1	1.0%	59%
1 - 2	1	1.0%	60%
2 - 4	1	1.0%	61%
4 - 8	1	1.0%	62%
8 - 16	2	1.9%	64%
16 - 32	5	4.9%	69%
32 - 64	15	14.6%	83%
64-128	8	7.8%	91%
128-256	9	8.7%	100%
256-512	0	0.0%	100%
512-1024	0	0.0%	100%
1024-2048	0	0.0%	100%
2048-4096	0	0.0%	100%
Bedrock	0	0.0%	100%
Total	**103**	**100%**	**100%**
		Summary Data	
		D50	**0.062**
		D84	**65**
		D95	**150**


Fletcher Mitigation Site
Pebble Count - Percent Cumulative
Cross-Section 28 - Riffle
% Finer Than / % by Size Group
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
0 - 0.062
0.062 - 0.125
0.125 - 0.25
0.25 - 0.5
0.5 - 1.0
1 - 2
2 - 4
4 - 8
8 - 16
16 - 32
32 - 64
64-128
128-256
256-512
512-1024
1024-2048
2048-4096
Bedrock
Particle Size Groups
MY0 Cumulative %
Pre-MY1 Cumulative %
MY1 Cumulative %

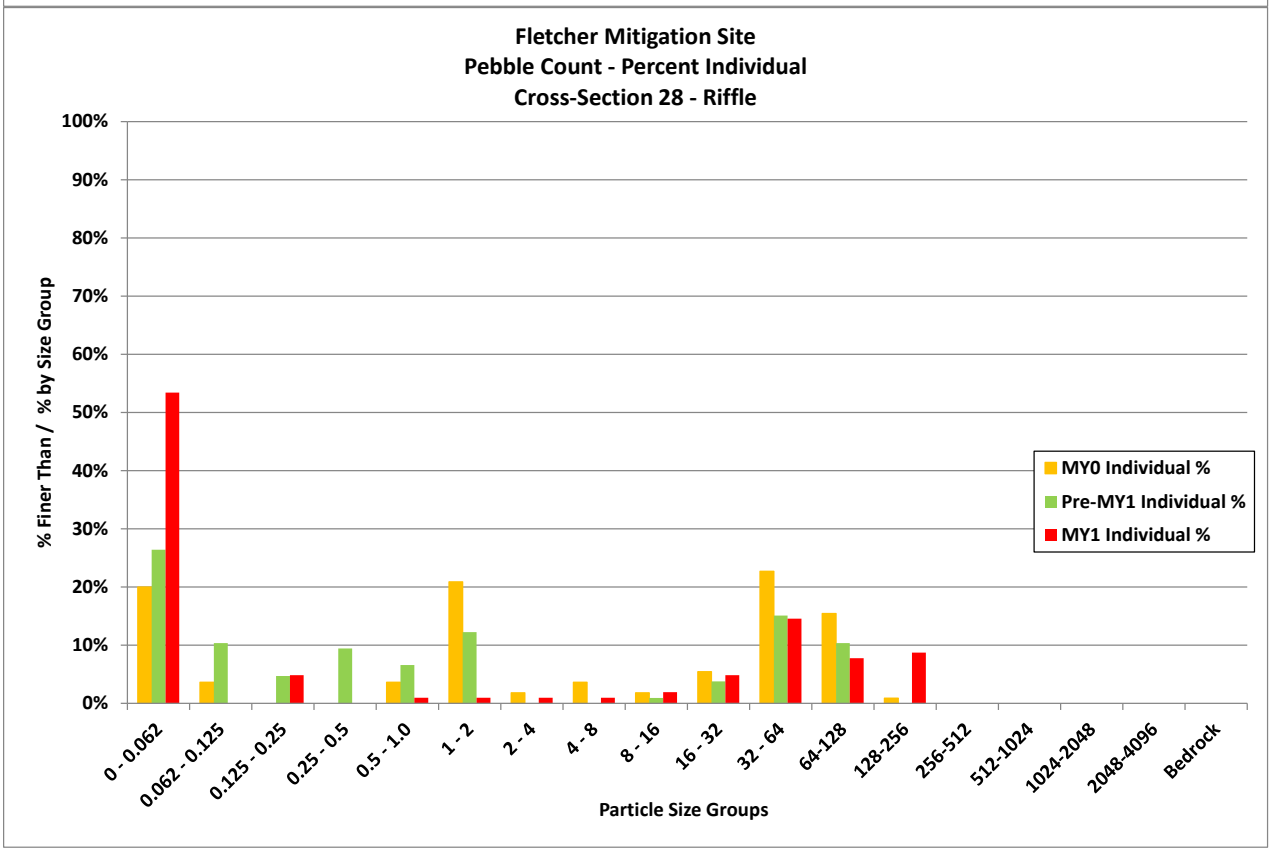

Fletcher Mitigation Site
Pebble Count - Percent Individual
Cross-Section 28 - Riffle
% Finer Than / % by Size Group
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
0 - 0.062
0.062 - 0.125
0.125 - 0.25
0.25 - 0.5
0.5 - 1.0
1 - 2
2 - 4
4 - 8
8 - 16
16 - 32
32 - 64
64-128
128-256
256-512
512-1024
1024-2048
2048-4096
Bedrock
Particle Size Groups
MY0 Individual %
Pre-MY1 Individual %
MY1 Individual %

Table 10. Baseline Stream Data Summary
Fletcher Mitigation Site - Fletcher Creek Reach 1B (380 feet *)

Parameter	Regional Curve			Pre-Existing Condition						Reference Reach Data						Design			As-Built / Baseline					
Dimension & Substrate - Riffle	**LL**	**UL**	**Eq.**	**Min**	**Mean**	**Med**	**Max**	**SD**	**N**	**Min**	**Mean**	**Med**	**Max**	**SD**	**N**	**Min**	**Mean**	**Max**	**Min**	**Mean**	**Med**	**Max**	**SD**	**N**
Bankfull Width (ft)	-	-	-	6.1	-	-	8.0	-	-	14.7	-	-	19.5	-	-	-	8.7	-	-	7.1	-	-	-	1
Floodprone Width (ft)				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20.0	-	-	-	1
Bankfull Mean Depth (ft)				-	-	-	-	-	-	-	-	-	-	-	-	-	0.6	-	-	0.3	-	-	-	1
Bankfull Max Depth (ft)				0.7	-	-	0.8	-	-	1.2	-	-	1.4	-	-	-	0.9	-	-	0.6	-	-	-	1
Bankfull Cross Sectional Area (ft^2)	-			4.4	-	-	6.2	-	-	18.0	-	-	27.2	-	-	-	5.5	-	-	2.3	-	-	-	1
Width/Depth Ratio				8.5	-	-	10.5	-	-	12.0	-	-	14	-	-	-	13.6	-	-	21.4	-	-	-	1
Entrenchment Ratio				1.1	-	-	2.1	-	-	1.4	-	-	1.5	-	-	-	2.4	-	-	2.8	-	-	-	1
Bank Height Ratio				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.0	-	-	-	1
d50 (mm)				6.0	-	-	11.0	-	-	60.0	-	-	125	-	-	-	-	-	-	12.0	-	-	-	1
Profile																								
Riffle Length (ft)				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4.8	8.5	8.0	13.1	2.5	13
Riffle Slope (ft/ft)				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.002	0.018	0.014	0.044	0.013	13
Pool Length (ft)				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.1	9.6	9.7	14.4	2.8	12
Pool Max Depth (ft)				-	-	-	-	-	-	-	-	-	-	-	-	-	1.4	-	1.2	2.0	1.9	2.9	0.5	12
Pool Spacing (ft)				-	-	-	-	-	-	-	-	-	-	-	-	23.4	-	39.0	14.6	27.9	29.4	40.5	8.0	11
Pattern																								
Channel Belt Width (ft)				-	-	-	-	-	-	-	-	-	-	-	-	10.3	13.7	17.2	17.7	18.2	17.8	19.0	0.7	3
Radius of Curvature (ft)				-	-	-	-	-	-	-	-	-	-	-	-	14.0	-	21.0	17.0	22.7	25.0	26.0	4.9	3
Rc: Bankfull Width (ft/ft)				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.0	2.6	2.9	3.0	0.6	3
Meander Wavelength (ft)				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17.7	18.2	17.8	19.1	0.8	3
Meander Width Ratio				-	-	-	-	-	-	-	-	-	-	-	-	-	2.5	-	2.0	2.1	2.0	2.2	0.1	3
Substrate, Bed and Transport Parameters																								
Reach Shear Stress (Competency) lb/ft^2				-						-						-			-					
Max Part Size (mm) Mobilized at Bankfull				-						-						-			-					
Stream Power (Transport Capacity) W/m^2				-						-						-			-					
Additional Reach Parameters																								
Drainage Area (mi^2)				0.30						2.35						0.30								
Rosgen Classification				G						B4						B4			B4					
Bankfull Velocity (fps)	-			2.3 - 3.6						-						-								
Bankfull Discharge (cfs)	-			22.0						-						15.0								
Valley Length (ft)				-						-						-			337					
* Channel Thalweg Length (ft)				-						-						-			380					
^ Channel Centerline (ft)				-						-									377					
Sinuosity				-						-						1.11			1.12					
Water Surface Slope (ft/ft)				0.008 - 0.018						0.011 - 0.018						0.016			0.015					
Bankfull Slope (ft/ft)				-						-						-			0.016					
Bankfull Floodplain Area (acres)				-						-														
% of Reach with Eroding Banks				-						-														
Channel Stability or Habitat Metric				Unstable						-														
Biological or Other				-						-														

* Channel Thalweg Length (ft): Based on actual thalweg calculations from the as-built survey, accounts for breaks in conservation easement and utility right-of-ways.

^ Channel Centerline (ft): Based on stream centerline stationing from design stream stationing; accounts for breaks in conservation easement and utility right-of-ways.

- Information unavailable.

Non-Applicable.

Table 10. Baseline Stream Data Summary
Fletcher Mitigation Site - Fletcher Creek Reach 1B (380 feet *)

Parameter	Regional Curve			Pre-Existing Condition						Reference Reach Data						Design			As-Built / Baseline					
Dimension & Substrate - Riffle	**LL**	**UL**	**Eq.**	**Min**	**Mean**	**Med**	**Max**	**SD**	**N**	**Min**	**Mean**	**Med**	**Max**	**SD**	**N**	**Min**	**Mean**	**Max**	**Min**	**Mean**	**Med**	**Max**	**SD**	**N**
Bankfull Width (ft)	-	-	-	6.1	-	-	8.0	-	-	14.7	-	-	19.5	-	-	-	8.7	-	-	7.1	-	-	-	1
Floodprone Width (ft)				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20.0	-	-	-	1
Bankfull Mean Depth (ft)				-	-	-	-	-	-	-	-	-	-	-	-	-	0.6	-	-	0.3	-	-	-	1
Bankfull Max Depth (ft)				0.7	-	-	0.8	-	-	1.2	-	-	1.4	-	-	-	0.9	-	-	0.6	-	-	-	1
Bankfull Cross Sectional Area (ft^2)	-			4.4	-	-	6.2	-	-	18.0	-	-	27.2	-	-	-	5.5	-	-	2.3	-	-	-	1
Width/Depth Ratio				8.5	-	-	10.5	-	-	12.0	-	-	14	-	-	-	13.6	-	-	21.4	-	-	-	1
Entrenchment Ratio				1.1	-	-	2.1	-	-	1.4	-	-	1.5	-	-	-	2.4	-	-	2.8	-	-	-	1
Bank Height Ratio				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.0	-	-	-	1
d50 (mm)				6.0	-	-	11.0	-	-	60.0	-	-	125	-	-	-	-	-	-	12.0	-	-	-	1
Profile																								
Riffle Length (ft)				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4.8	8.5	8.0	13.1	2.5	13
Riffle Slope (ft/ft)				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.002	0.018	0.014	0.044	0.013	13
Pool Length (ft)				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.1	9.6	9.7	14.4	2.8	12
Pool Max Depth (ft)				-	-	-	-	-	-	-	-	-	-	-	-	-	1.4	-	1.2	2.0	1.9	2.9	0.5	12
Pool Spacing (ft)				-	-	-	-	-	-	-	-	-	-	-	-	23.4	-	39.0	14.6	27.9	29.4	40.5	8.0	11
Pattern																								
Channel Belt Width (ft)				-	-	-	-	-	-	-	-	-	-	-	-	10.3	13.7	17.2	17.7	18.2	17.8	19.0	0.7	3
Radius of Curvature (ft)				-	-	-	-	-	-	-	-	-	-	-	-	14.0	-	21.0	17.0	22.7	25.0	26.0	4.9	3
Rc: Bankfull Width (ft/ft)				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.0	2.6	2.9	3.0	0.6	3
Meander Wavelength (ft)				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17.7	18.2	17.8	19.1	0.8	3
Meander Width Ratio				-	-	-	-	-	-	-	-	-	-	-	-	-	2.5	-	2.0	2.1	2.0	2.2	0.1	3
Substrate, Bed and Transport Parameters																								
Reach Shear Stress (Competency) lb/ft^2				-						-						-			-					
Max Part Size (mm) Mobilized at Bankfull				-						-						-			-					
Stream Power (Transport Capacity) W/m^2				-						-						-			-					
Additional Reach Parameters																								
Drainage Area (mi^2)				0.30						2.35						0.30								
Rosgen Classification				G						B4						B4			B4					
Bankfull Velocity (fps)	-			2.3 - 3.6						-						-								
Bankfull Discharge (cfs)	-			22.0						-						15.0								
Valley Length (ft)				-						-						-			337					
* Channel Thalweg Length (ft)				-						-						-			380					
^ Channel Centerline (ft)				-						-									377					
Sinuosity				-						-						1.11			1.12					
Water Surface Slope (ft/ft)				0.008 - 0.018						0.011 - 0.018						0.016			0.015					
Bankfull Slope (ft/ft)				-						-						-			0.016					
Bankfull Floodplain Area (acres)				-						-														
% of Reach with Eroding Banks				-						-														
Channel Stability or Habitat Metric				Unstable						-														
Biological or Other				-						-														

* Channel Thalweg Length (ft): Based on actual thalweg calculations from the as-built survey, accounts for breaks in conservation easement and utility right-of-ways.

^ Channel Centerline (ft): Based on stream centerline stationing from design stream stationing; accounts for breaks in conservation easement and utility right-of-ways.

- Information unavailable.

Non-Applicable.

Table 10 Cont'd. Baseline Stream Data Summary
Fletcher Mitigation Site - Fletcher Creek Reach 1C (1,541 feet *)

Parameter	Regional Curve			Pre-Existing Condition						Reference Reach Data						Design			As-Built / Baseline					
Dimension & Substrate - Riffle	**LL**	**UL**	**Eq.**	**Min**	**Mean**	**Med**	**Max**	**SD**	**N**	**Min**	**Mean**	**Med**	**Max**	**SD**	**N**	**Min**	**Mean**	**Max**	**Min**	**Mean**	**Med**	**Max**	**SD**	**N**
Bankfull Width (ft)	-	-	-	6.3	-	-	9.3	-	-	14.7	-	-	19.5	-	-	-	9.4	-	7.6	9.8	9.8	12.0	3.1	2
Floodprone Width (ft)				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10.0	30.0	30.0	50.0	28.3	2
Bankfull Mean Depth (ft)				-	-	-	-	-	-	-	-	-	-	-	-	-	0.7	-	0.3	0.5	0.5	0.6	0.2	2
Bankfull Max Depth (ft)				0.6	-	-	0.9	-	-	1.2	-	-	1.4	-	-	-	0.9	-	0.5	0.8	0.8	1.0	0.4	2
Bankfull Cross Sectional Area (ft^2)		-		4.9	-	-	7.5	-	-	18.0	-	-	27.2	-	-	-	6.4	-	2.1	4.8	4.8	7.5	3.8	2
Width/Depth Ratio				8.2	-	-	16.6	-	-	12.0	-	-	14	-	-	-	13.8	-	19.2	23.4	23.4	27.6	6.0	2
Entrenchment Ratio				1.3	-	-	1.7	-	-	1.4	-	-	1.5	-	-	-	2.4	-	1.3	2.7	2.7	4.2	2.0	2
Bank Height Ratio				-	-	-	-	-	-	-	-	-	-	-	-	-		-	1.0	1.0	1.0	1.0	0.0	2
d50 (mm)				5.0	-	-	14.0	-	-	60.0	-	-	125	-	-	-	-	-	18.0	18.5	19.0	19.0	0.71	2
Profile																								
Riffle Length (ft)				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.4	10.9	11.1	21.1	4.9	44
Riffle Slope (ft/ft)				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.000	0.009	0.007	0.029	0.008	44
Pool Length (ft)				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6.3	13.1	12.8	29.0	4.6	44
Pool Max Depth (ft)				-	-	-	-	-	-	-	-	-	-	-	-	-	1.4	-	1.5	2.8	2.8	4.0	0.6	44
Pool Spacing (ft)				-	-	-	-	-	-	-	-	-	-	-	-	31.0	-	51.7	13.5	35.0	34.4	96.1	13.5	43
Pattern																								
Channel Belt Width (ft)				-	-	-	-	-	-	-	-	-	-	-	-	11.2	15.0	18.7	18.7	20.2	19.7	22.3	1.9	3
Radius of Curvature (ft)				-	-	-	-	-	-	-	-	-	-	-	-	15.0	-	22.0	17.2	21.0	20.6	25.3	4.1	3
Rc: Bankfull Width (ft/ft)				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.8	2.2	2.2	2.7	0.5	3
Meander Wavelength (ft)				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	18.7	20.2	19.7	22.3	1.9	3
Meander Width Ratio				-	-	-	-	-	-	-	-	-	-	-	-	-	2.9	-	2.0	2.1	2.1	2.4	0.2	3
Substrate, Bed and Transport Parameters																								
Reach Shear Stress (Competency) lb/ft^2				-						-						-			-					
Max Part Size (mm) Mobilized at Bankfull				-						-						-			-					
Stream Power (Transport Capacity) W/m^2				-						-						-			-					
Additional Reach Parameters																								
Drainage Area (mi^2)				0.37						2.35						0.37								
Rosgen Classification				B, F, G						B4						B4			B4					
Bankfull Velocity (fps)		-		-						-						-								
Bankfull Discharge (cfs)		-		25.0						-						18.0								
Valley Length (ft)				-						-						-			1,436					
* Channel Thalweg Length (ft)				-						-						-			1,541					
^ Channel Centerline (ft)				-						-						-			1,540					
Sinuosity				1.24						-						1.10			1.10					
Water Surface Slope (ft/ft)				0.009 - 0.015						0.011 - 0.018						0.012			0.012					
Bankfull Slope (ft/ft)				-						-						-			0.012					
Bankfull Floodplain Area (acres)				-						-														
% of Reach with Eroding Banks				-						-														
Channel Stability or Habitat Metric				Unstable						-														
Biological or Other				-						-														

* Channel Thalweg Length (ft): Based on actual thalweg calculations from the as-built survey, accounts for breaks in conservation easement and utility right-of-ways.

^ Channel Centerline (ft): Based on stream centerline stationing from design stream stationing; accounts for breaks in conservation easement and utility right-of-ways.

- Information unavailable.

Non-Applicable.

Table 10 Cont'd. Baseline Stream Data Summary
Fletcher Mitigation Site - Fletcher Creek Reach 2A (1,299 feet *)

Parameter	Regional Curve			Pre-Existing Condition						Reference Reach Data						Design			As-Built / Baseline					
Dimension & Substrate - Riffle	**LL**	**UL**	**Eq.**	**Min**	**Mean**	**Med**	**Max**	**SD**	**N**	**Min**	**Mean**	**Med**	**Max**	**SD**	**N**	**Min**	**Mean**	**Max**	**Min**	**Mean**	**Med**	**Max**	**SD**	**N**
Bankfull Width (ft)	-	-	-	4.9	-	-	7.9	-	-	14.7	-	-	19.5	-	-	-	10.4	-	12.6	12.9	12.9	13.1	0.3	2
Floodprone Width (ft)				-	-	-	-	-	-	-	-	-	-	-	-	-		-	35.0	42.5	42.5	50.0	10.6	2
Bankfull Mean Depth (ft)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.7	-	0.7	0.8	0.8	0.8	0.0	2
Bankfull Max Depth (ft)				0.8	-	-	1.1	-	-	1.2	-	-	1.4	-	-	-	1.0	-	1.2	1.4	1.4	1.6	0.3	2
Bankfull Cross Sectional Area (ft^2)		-		4.8	-	-	7.9	-	-	18.0	-	-	27.2	-	-	-	7.6	-	9.2	9.8	9.8	10.4	0.9	2
Width/Depth Ratio				5.0	-	-	9.1	-	-	12.0	-	-	14	-	-	-	14.2	-	16.5	17.0	17.0	17.4	0.6	2
Entrenchment Ratio				1.4	-	-	1.9	-	-	1.4	-	-	1.5	-	-	-	2.4	-	2.7	3.3	3.3	4.0	0.9	2
Bank Height Ratio				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.0	1.0	1.0	1.0	0.0	2
d50 (mm)				9.0	-	-	14.0	-	-	60.0	-	-	125.0	-	-	-	-	-	18.0	19.0	20.0	20.0	1.4	2
Profile																								
Riffle Length (ft)				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.3	16.0	14.6	32.2	6.7	35
Riffle Slope (ft/ft)				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.001	0.010	0.008	0.028	0.007	35
Pool Length (ft)				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.58	10.8	10.2	25.3	4.2	34
Pool Max Depth (ft)				-	-	-	-	-	-	-	-	-	-	-	-	-	1.5	-	1.2	2.5	2.6	3.7	0.7	34
Pool Spacing (ft)				-	-	-	-	-	-	-	-	-	-	-	-	34.2	-	57.2	9.4	36.8	37.5	52.2	9.4	33
Pattern																								
Channel Belt Width (ft)				-	-	-	-	-	-	-	-	-	-	-	-	12.6	16.8	21.0	23.8	24.5	24.1	25.5	0.9	3
Radius of Curvature (ft)				-	-	-	-	-	-	-	-	-	-	-	-	17.0	-	25.0	16.8	22.1	19.8	29.6	6.7	3
Rc: Bankfull Width (ft/ft)				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.6	2.1	1.9	2.8	0.6	3
Meander Wavelength (ft)				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23.8	24.5	24.1	25.5	0.9	3
Meander Width Ratio				-	-	-	-	-	-	-	-	-	-	-	-	-	3.5	-	2.3	2.4	2.3	2.5	0.1	3
Substrate, Bed and Transport Parameters																								
Reach Shear Stress (Competency) lb/ft^2				-						-						-			-					
Max Part Size (mm) Mobilized at Bankfull				-						-						-			-					
Stream Power (Transport Capacity) W/m^2				-						-						-			-					
Additional Reach Parameters																								
Drainage Area (mi^2)				0.49						2.35						0.49								
Rosgen Classification				B, G						B4						B4			B4					
Bankfull Velocity (fps)		-		2.0 - 3.4						-						-								
Bankfull Discharge (cfs)		-		32.0						-						22.0								
Valley Length (ft)				-						-						-			1,158					
* Channel Thalweg Length (ft)				-						-						-			1,299					
^ Channel Centerline (ft)				-						-						-			1,296					
Sinuosity				1.35						-						1.17			1.15					
Water Surface Slope (ft/ft)				0.005 - 0.014						0.011 - 0.018						0.012			0.011					
Bankfull Slope (ft/ft)				-						-						-			0.012					
Bankfull Floodplain Area (acres)				-						-														
% of Reach with Eroding Banks				-						-														
Channel Stability or Habitat Metric				Severe						-														
Biological or Other				-						-														

* Channel Thalweg Length (ft): Based on actual thalweg calculations from the as-built survey, accounts for breaks in conservation easement and utility right-of-ways.

^ Channel Centerline (ft): Based on stream centerline stationing from design stream stationing; accounts for breaks in conservation easement and utility right-of-ways.

- Information unavailable.

Non-Applicable.

Table 10 Cont'd. Baseline Stream Data Summary
Fletcher Mitigation Site - Fletcher Creek Reach 2B (1,510 feet *)

Parameter	Regional Curve			Pre-Existing Condition						Reference Reach Data						Design			As-Built / Baseline					
Dimension & Substrate - Riffle	**LL**	**UL**	**Eq.**	**Min**	**Mean**	**Med**	**Max**	**SD**	**N**	**Min**	**Mean**	**Med**	**Max**	**SD**	**N**	**Min**	**Mean**	**Max**	**Min**	**Mean**	**Med**	**Max**	**SD**	**N**
Bankfull Width (ft)	-	-	-	4.4	-	-	10.7	-	-	14.7	-	-	19.5	-	-	-	10.6	-	9.8	10.0	10.0	10.2	0.3	2
Floodprone Width (ft)				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	40.0	55.0	55.0	70.0	21.2	2
Bankfull Mean Depth (ft)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.7	-	0.7	0.7	0.7	0.8	0.1	2
Bankfull Max Depth (ft)				0.7	-	-	1.0	-	-	1.2	-	-	1.4	-	-	-	1.0	-	1.2	1.3	1.3	1.3	0.1	2
Bankfull Cross Sectional Area (ft^2)		-		3.3	-	-	7.2	-	-	18.0	-	-	27.2	-	-	-	7.9	-	7.1	7.4	7.4	7.6	0.3	2
Width/Depth Ratio				5.2	-	-	15.7	-	-	12.0	-	-	14	-	-	-	14.3	-	12.6	13.6	13.6	14.6	1.4	2
Entrenchment Ratio				1.4	-	-	5.9	-	-	1.4	-	-	1.5	-	-	-	2.3	-	3.9	5.5	5.5	7.2	2.3	2
Bank Height Ratio				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.0	1.0	1.0	1.0	0.0	2
d50 (mm)				-	5.0	-	-	-	-	60.0	-	-	125.0	-	-	-	-	-	5.5	11.8	18.0	18.0	8.8	2
Profile																								
Riffle Length (ft)				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.3	16.0	14.6	32.2	6.7	35
Riffle Slope (ft/ft)				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.001	0.010	0.008	0.028	0.007	35
Pool Length (ft)				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.58	10.8	10.2	25.3	4.2	34
Pool Max Depth (ft)				-	-	-	-	-	-	-	-	-	-	-	-	-	1.5	-	1.2	2.5	2.6	3.7	0.7	34
Pool Spacing (ft)				-	-	-	-	-	-	-	-	-	-	-	-	35.0	-	58.3	9.4	36.8	37.5	52.2	9.4	33
Pattern																								
Channel Belt Width (ft)				-	-	-	-	-	-	-	-	-	-	-	-	12.9	17.2	21.5	18.0	19.9	19.2	22.6	2.4	3
Radius of Curvature (ft)				-	-	-	-	-	-	-	-	-	-	-	-	17.0	-	26.0	23.5	25.3	24.8	27.5	2.0	3
Rc: Bankfull Width (ft/ft)				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.2	2.4	2.3	2.6	0.2	3
Meander Wavelength (ft)				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17.9	19.9	19.2	22.6	2.4	3
Meander Width Ratio				-	-	-	-	-	-	-	-	-	-	-	-	-	2.6	-	1.7	1.9	1.8	2.1	0.2	3
Substrate, Bed and Transport Parameters																								
Reach Shear Stress (Competency) lb/ft^2						-						-												
Max Part Size (mm) Mobilized at Bankfull						-						-												
Stream Power (Transport Capacity) W/m^2						-						-												
Additional Reach Parameters																								
Drainage Area (mi^2)						0.52						2.35					0.52							
Rosgen Classification						B, E, G						B4					B5					B5		
Bankfull Velocity (fps)		-				1.8 - 2.7						-					-							
Bankfull Discharge (cfs)		-				33.0						-					23.0							
Valley Length (ft)						-						-					-					1,467		
* Channel Thalweg Length (ft)						-						-					-					1,510		
^ Channel Centerline (ft)						-						-					-					1,470		
Sinuosity						1.03						-					1.10					1.10		
Water Surface Slope (ft/ft)						0.004 - 0.01						0.011 - 0.018					0.007					0.011		
Bankfull Slope (ft/ft)						-						-					-					0.012		
Bankfull Floodplain Area (acres)						-						-												
% of Reach with Eroding Banks						-						-												
Channel Stability or Habitat Metric						Unstable						-												
Biological or Other						-						-												

* Channel Thalweg Length (ft): Based on actual thalweg calculations from the as-built survey, accounts for breaks in conservation easement and utility right-of-ways.

^ Channel Centerline (ft): Based on stream centerline stationing from design stream stationing; accounts for breaks in conservation easement and utility right-of-ways.

- Information unavailable.

Non-Applicable.

Table 10 Cont'd. Baseline Stream Data Summary
Fletcher Mitigation Site - Weston Creek Reach 1A (1,982 feet *)

Parameter	Regional Curve			Pre-Existing Condition						Reference Reach Data						Design			As-Built / Baseline					
Dimension & Substrate - Riffle	**LL**	**UL**	**Eq.**	**Min**	**Mean**	**Med**	**Max**	**SD**	**N**	**Min**	**Mean**	**Med**	**Max**	**SD**	**N**	**Min**	**Mean**	**Max**	**Min**	**Mean**	**Med**	**Max**	**SD**	**N**
Bankfull Width (ft)	-	-	-	4.5	-	-	6.3	-	-	6.3	-	-	10.7	-	-	-	8.6	-	9.1	9.8	9.8	10.4	0.9	2
Floodprone Width (ft)				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	50.0	50.0	50.0	50.0	0.0	2
Bankfull Mean Depth (ft)	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	0.6	-	0.6	0.6	0.6	0.6	0.0	2
Bankfull Max Depth (ft)				0.6	-	-	0.7	-	-	1.0	-	-	1.2	-	-	-	0.9	-	0.9	1.0	1.0	1.1	0.1	2
Bankfull Cross Sectional Area (ft^2)		-		2.7	-	-	4.6	-	-	7.7	-	-	10.0	-	-	-	5.5	-	5.4	5.8	5.8	6.2	0.6	2
Width/Depth Ratio				7.4	-	-	10.0	-	-	6.0	-	-	11.0	-	-	-	13.6	-	15.5	16.4	16.4	17.4	1.3	2
Entrenchment Ratio				1.6	-	-	2.6	-	-	2.3	-	-	4.8	-	-	-	4.6	-	4.8	5.1	5.1	5.5	0.5	2
Bank Height Ratio				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.0	1.0	1.0	1.0	0.0	2
d50 (mm)				1.0	-	-	4.0	-	-	13.0	-	-	17.0	-	-	-	-	-	1.5	2.6	3.6	3.6	1.5	2
Profile																								
Riffle Length (ft)				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4.3	13.3	11.9	38.6	7.8	55
Riffle Slope (ft/ft)				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.000	0.004	0.002	0.017	0.004	55
Pool Length (ft)				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.7	13.1	12.8	26.1	4.3	54
Pool Max Depth (ft)				-	-	-	-	-	-	-	-	-	-	-	-	-	1.4	-	1.1	1.7	1.7	2.6	0.4	54
Pool Spacing (ft)				-	-	-	-	-	-	-	-	-	-	-	-	43.0	-	60.2	8.9	35.7	34.4	72.9	12.0	53
Pattern																								
Channel Belt Width (ft)				-	-	-	-	-	-	-	-	-	-	-	-	13.7	27.4	34.3	24.8	27.0	27.2	29.0	2.1	3
Radius of Curvature (ft)				-	-	-	-	-	-	-	-	-	-	-	-	10.0	-	17.0	11.0	14.3	14.6	17.4	3.2	3
Rc: Bankfull Width (ft/ft)				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.3	1.7	1.7	2.0	0.4	3
Meander Wavelength (ft)				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24.5	26.9	27.2	29.0	2.3	3
Meander Width Ratio				-	-	-	-	-	-	-	-	-	-	-	-	-	2.9	-	2.9	3.1	3.2	3.4	0.2	3
Substrate, Bed and Transport Parameters																								
Reach Shear Stress (Competency) lb/ft^2				-						-						-			-					
Max Part Size (mm) Mobilized at Bankfull				-						-						-			-					
Stream Power (Transport Capacity) W/m^2				-						-						-			-					
Additional Reach Parameters																								
Drainage Area (mi^2)				0.30						0.25						0.30								
Rosgen Classification				E, G						E4						C5			C5					
Bankfull Velocity (fps)		-		1.8 - 2.2						-						-								
Bankfull Discharge (cfs)		-		21.0						-						15.0								
Valley Length (ft)				-						-						-			1,616					
* Channel Thalweg Length (ft)				-						-						-			1,982					
^ Channel Centerline				-						-						-			1,954					
Sinuosity				1.01						1.60						1.24			1.24					
Water Surface Slope (ft/ft)				0.006 - 0.009						0.008						0.005			0.005					
Bankfull Slope (ft/ft)				-						-						-			0.005					
Bankfull Floodplain Area (acres)				-						-														
% of Reach with Eroding Banks				-						-														
Channel Stability or Habitat Metric				Unstable						-														
Biological or Other				-						-														

* Channel Thalweg Length (ft): Based on actual thalweg calculations from the as-built survey, accounts for breaks in conservation easement and utility right-of-ways.

^ Channel Centerline (ft): Based on stream centerline stationing from design stream stationing; accounts for breaks in conservation easement and utility right-of-ways.

- Information unavailable.

Non-Applicable.

Table 10 Cont'd. Baseline Stream Data Summary
Fletcher Mitigation Site - Weston Creek Reach 1B (825 feet *)

Parameter	Regional Curve			Pre-Existing Condition						Reference Reach Data						Design			As-Built / Baseline					
Dimension & Substrate - Riffle	**LL**	**UL**	**Eq.**	**Min**	**Mean**	**Med**	**Max**	**SD**	**N**	**Min**	**Mean**	**Med**	**Max**	**SD**	**N**	**Min**	**Mean**	**Max**	**Min**	**Mean**	**Med**	**Max**	**SD**	**N**
Bankfull Width (ft)	-	-	-	4.5	-	-	9.6	-	-	6.3	-	-	10.7	-	-	-	9.4	-	-	9.7	-	-	-	1
Floodprone Width (ft)				-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	40.0	-	-	-	1
Bankfull Mean Depth (ft)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.7	-	-	0.5	-	-	-	1
Bankfull Max Depth (ft)				0.6	-	-	1.0	-	-	1.0	-	-	1.2	-	-	-	0.9	-	-	0.7	-	-	-	1
Bankfull Cross Sectional Area (ft^2)		-		3.8	-	-	7.8	-	-	7.7	-	-	10	-	-	-	6.3	-	-	4.7	-	-	-	1
Width/Depth Ratio				5.3	-	-	11.9	-	-	6.0	-	-	11	-	-	-	3.3	-	-	20.4	-	-	-	1
Entrenchment Ratio				1.3	-	-	2.2	-	-	2.3	-	-	4.8	-	-	-	4.3	-	-	4.1	-	-	-	1
Bank Height Ratio				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.0	-	-	-	1
d50 (mm)				1.0	-	-	4.0	-	-	13.0	-	-	17.0	-	-	-	-	-	-	1.8	-	-	-	-
Profile																								
Riffle Length (ft)				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4.5	12.3	12.1	29.1	5.9	21
Riffle Slope (ft/ft)				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.000	0.007	0.002	0.031	0.008	21
Pool Length (ft)				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.6	14.8	14.0	26.8	6.9	21
Pool Max Depth (ft)				-	-	-	-	-	-	-	-	-	-	-	-	-	1.4	-	1.4	2.0	2.0	2.7	0.3	21
Pool Spacing (ft)				-	-	-	-	-	-	-	-	-	-	-	-	47.0	-	65.8	19.7	35.2	34.8	68.4	12.1	20
Pattern																								
Channel Belt Width (ft)				-	-	-	-	-	-	-	-	-	-	-	-	14.9	29.9	37.3	27.3	28.4	28.1	29.9	1.3	3
Radius of Curvature (ft)				-	-	-	-	-	-	-	-	-	-	-	-	11.0	-	19.0	15.8	19.5	18.2	24.5	4.5	3
Rc: Bankfull Width (ft/ft)				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.7	2.1	1.9	2.6	0.5	3
Meander Wavelength (ft)				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	27.3	28.4	28.1	29.9	1.3	3
Meander Width Ratio				-	-	-	-	-	-	-	-	-	-	-	-	-	3.3	-	2.9	3.0	3.0	3.2	0.1	3
Substrate, Bed and Transport Parameters																								
Reach Shear Stress (Competency) lb/ft^2				-						-						-			-					
Max Part Size (mm) Mobilized at Bankfull				-						-						-			-					
Stream Power (Transport Capacity) W/m^2				-						-						-			-					
Additional Reach Parameters																								
Drainage Area (mi^2)				0.37						0.25						0.37								
Rosgen Classification				G, E						E4						C5			C5					
Bankfull Velocity (fps)		-		1.8 - 2.3						-						-								
Bankfull Discharge (cfs)		-		25.0						-						18.0								
Valley Length (ft)				-						-						-			708					
* Channel Thalweg Length (ft)				-						-						-			825					
^ Channel Centerline (ft)				-						-						-			804					
Sinuosity				1.01						1.60						1.20			1.17					
Water Surface Slope (ft/ft)				0.005 - 0.007						0.0080						0.009			0.0024					
Bankfull Slope (ft/ft)				-						-						-			0.0026					
Bankfull Floodplain Area (acres)				-						-														
% of Reach with Eroding Banks				-						-														
Channel Stability or Habitat Metric				Unstable						-														
Biological or Other				-						-														

* Channel Thalweg Length (ft): Based on actual thalweg calculations from the as-built survey, accounts for breaks in conservation easement and utility right-of-ways.

^ Channel Centerline (ft): Based on stream centerline stationing from design stream stationing; accounts for breaks in conservation easement and utility right-of-ways.

- Information unavailable.

Non-Applicable.

Table 10 Cont'd. Baseline Stream Data Summary
Fletcher Mitigation Site - Raccoon Branch Reach 1C (153 feet)

Parameter	Regional Curve			Pre-Existing Condition						Reference Reach Data						Design			As-Built / Baseline					
Dimension & Substrate - Riffle	**LL**	**UL**	**Eq.**	**Min**	**Mean**	**Med**	**Max**	**SD**	**N**	**Min**	**Mean**	**Med**	**Max**	**SD**	**N**	**Min**	**Mean**	**Max**	**Min**	**Mean**	**Med**	**Max**	**SD**	**N**
Bankfull Width (ft)	-	-	-	1.8	-	-	3.4	-	-	14.7	-	-	19.5	-	-	-	6.0	-						
Floodprone Width (ft)				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-						
Bankfull Mean Depth (ft)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.3	-						
Bankfull Max Depth (ft)				0.1	-	-	0.2	-	-	1.2	-	-	1.4	-	-	-	0.5	-						
Bankfull Cross Sectional Area (ft^2)	-			0.4	-	-	0.6	-	-	18	-	-	27.2	-	-	-	2.0	-						
Width/Depth Ratio				8.0	-	-	25.7	-	-	12	-	-	14.0	-	-	-	17.8	-						
Entrenchment Ratio				1.7	-	-	2.1	-	-	1.4	-	-	1.5	-	-	-	2.3	-						
Bank Height Ratio				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-						
d50 (mm)				1.0	-	-	2.0	-	-	60.0	-	-	125.0	-	-	-	-	-						
Profile																								
Riffle Length (ft)				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-						
Riffle Slope (ft/ft)				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-						
Pool Length (ft)				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-						
Pool Max Depth (ft)				-	-	-	-	-	-	-	-	-	-	-	-	-	0.8	-						
Pool Spacing (ft)				-	-	-	-	-	-	-	-	-	-	-	-	3.3	-	5.5						
Pattern																								
Channel Belt Width (ft)				-	-	-	-	-	-	-	-	-	-	-	-	6.4	8.5	10.7						
Radius of Curvature (ft)				-	-	-	-	-	-	-	-	-	-	-	-	9.0	-	13.0						
Rc: Bankfull Width (ft/ft)				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-						
Meander Wavelength (ft)				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-						
Meander Width Ratio				-	-	-	-	-	-	-	-	-	-	-	-	-	1.9	-						
Substrate, Bed and Transport Parameters																								
Reach Shear Stress (Competency) lb/ft^2				-						-						-								
Max Part Size (mm) Mobilized at Bankfull				-						-						-								
Stream Power (Transport Capacity) W/m^2				-						-						-								
Additional Reach Parameters																								
Drainage Area (mi^2)				0.04						2.35						0.04								
Rosgen Classification				B, G						B4						B4								
Bankfull Velocity (fps)	-			2.4 - 3.4						-						-								
Bankfull Discharge (cfs)	-			4.0						-						3.0								
Valley Length (ft)				-						-						-								
Channel Thalweg Length (ft)				-						-						-								
Sinuosity				1.09						-						1.09								
Water Surface Slope (ft/ft)				0.048 - 0.092						0.011 - 0.018						0.040								
Bankfull Slope (ft/ft)				-						-						-								
Bankfull Floodplain Area (acres)				-						-														
% of Reach with Eroding Banks				-						-														
Channel Stability or Habitat Metric				Unstable						-														
Biological or Other				-						-														

- Information unavailable.

Non-Applicable.

Table 10 Cont'd. Baseline Stream Data Summary
Fletcher Mitigation Site - Raccoon Branch Reach 1D (440 feet *)

Parameter	Regional Curve			Pre-Existing Condition						Reference Reach Data						Design			As-Built / Baseline					
Dimension & Substrate - Riffle	**LL**	**UL**	**Eq.**	**Min**	**Mean**	**Med**	**Max**	**SD**	**N**	**Min**	**Mean**	**Med**	**Max**	**SD**	**N**	**Min**	**Mean**	**Max**	**Min**	**Mean**	**Med**	**Max**	**SD**	**N**
Bankfull Width (ft)	-	-	-	1.8	-	-	3.4	-	-	14.7	-	-	19.5	-	-	-	6.1	-	-	6.9	-	-	-	1
Floodprone Width (ft)				-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	20	-	-	-	1
Bankfull Mean Depth (ft)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.3	-	-	0.5	-	-	-	1
Bankfull Max Depth (ft)				0.1	-	-	0.2	-	-	1.2	-	-	1.4	-	-	-	0.5	-	-	1.34	-	-	-	1
Bankfull Cross Sectional Area (ft^2)	-			0.4	-	-	0.6	-	-	18	-	-	27.2	-	-	-	2.1	-	-	3.42	-	-	-	1
Width/Depth Ratio				8.0	-	-	25.7	-	-	12	-	-	14.0	-	-	-	17.8	-	-	13.8	-	-	-	1
Entrenchment Ratio				1.7	-	-	2.1	-	-	1.4	-	-	1.5	-	-	-	2.3	-	-	2.91	-	-	-	1
Bank Height Ratio				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.0	-	-	-	1
d50 (mm)				1.0	-	-	2.0	-	-	60.0	-	-	125.0	-	-	-	-	-	-	0.062	-	-	-	1
Profile																								
Riffle Length (ft)				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.5	4.5	4.2	7.9	1.7	38.0
Riffle Slope (ft/ft)				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.003	0.033	0.030	0.085	0.021	38.0
Pool Length (ft)				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.7	5.4	5.0	12.7	2.6	37.0
Pool Max Depth (ft)				-	-	-	-	-	-	-	-	-	-	-	-	-	0.8	-	0.6	1.0	1.1	1.4	0.2	37.0
Pool Spacing (ft)				-	-	-	-	-	-	-	-	-	-	-	-	20.1	-	33.6	4.1	12.1	11.2	28.8	5.5	35.0
Pattern																								
Channel Belt Width (ft)				-	-	-	-	-	-	-	-	-	-	-	-	6.5	8.7	10.9	6.7	7.5	7.0	8.7	1.1	3
Radius of Curvature (ft)				-	-	-	-	-	-	-	-	-	-	-	-	9.0	-	13.0	7.9	10.1	8.5	13.9	3.3	3
Rc: Bankfull Width (ft/ft)				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.2	1.6	1.3	2.2	0.6	3
Meander Wavelength (ft)				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6.7	7.5	7.0	8.7	1.1	3
Meander Width Ratio				-	-	-	-	-	-	-	-	-	-	-	-	-	2.5	-	1.1	1.2	1.1	1.4	0.1	3
Substrate, Bed and Transport Parameters																								
Reach Shear Stress (Competency) lb/ft^2				-						-						-			-					
Max Part Size (mm) Mobilized at Bankfull				-						-						-			-					
Stream Power (Transport Capacity) W/m^2				-						-						-			-					
Additional Reach Parameters																								
Drainage Area (mi^2)				0.04						2.35						0.04								
Rosgen Classification				B, G						B4						B4			B4					
Bankfull Velocity (fps)	-			2.4 - 3.4						-						-								
Bankfull Discharge (cfs)	-			4.0						-						3.0								
Valley Length (ft)				-						-						-			413					
* Channel Thalweg Length (ft)				-						-						-			440					
^ Channel Centerline (ft)				-						-						-			448					
Sinuosity				1.09						-						1.05			1.08					
Water Surface Slope (ft/ft)				0.048 - 0.092						0.011 - 0.018						0.048			0.040					
Bankfull Slope (ft/ft)				-						-						-			0.041					
Bankfull Floodplain Area (acres)				-						-														
% of Reach with Eroding Banks				-						-														
Channel Stability or Habitat Metric				Unstable						-														
Biological or Other				-						-														

* Channel Thalweg Length (ft): Based on actual thalweg calculations from the as-built survey, accounts for breaks in conservation easement and utility right-of-ways.

^ Channel Centerline (ft): Based on stream centerline stationing from design stream stationing; accounts for breaks in conservation easement and utility right-of-ways.

- Information unavailable.

Non-Applicable.

Table 10 Cont'd. Baseline Stream Data Summary
Fletcher Mitigation Site - Coates Branch Reach 1A (282 feet)

Parameter	Regional Curve			Pre-Existing Condition						Reference Reach Data						Design			As-Built / Baseline					
Dimension & Substrate - Riffle	**LL**	**UL**	**Eq.**	**Min**	**Mean**	**Med**	**Max**	**SD**	**N**	**Min**	**Mean**	**Med**	**Max**	**SD**	**N**	**Min**	**Mean**	**Max**	**Min**	**Mean**	**Med**	**Max**	**SD**	**N**
Bankfull Width (ft)	-	-	-	0.9	-	-	1.3	-	-	14.7	-	-	19.5	-	-	-	5.0	-						
Floodprone Width (ft)				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-						
Bankfull Mean Depth (ft)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.3	-						
Bankfull Max Depth (ft)				0.2	-	-	0.3	-	-	1.2	-	-	1.4	-	-	-	0.4	-						
Bankfull Cross Sectional Area (ft^2)	-			0.2	-	-	0.3	-	-	18.0	-	-	27.2	-	-	-	1.4	-						
Width/Depth Ratio				5.1	-	-	5.6	-	-	12.0	-	-	14.0	-	-	-	18.0	-						
Entrenchment Ratio				2.0	-	-	2.8	-	-	1.4	-	-	1.5	-	-	-	2.4	-						
Bank Height Ratio				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-						
d50 (mm)				1.0	-	-	2.0	-	-	60.0	-	-	125.0	-	-	-	-	-						
Profile																								
Riffle Length (ft)				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-						
Riffle Slope (ft/ft)				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-						
Pool Length (ft)				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-						
Pool Max Depth (ft)				-	-	-	-	-	-	-	-	-	-	-	-	-	0.7	-						
Pool Spacing (ft)				-	-	-	-	-	-	-	-	-	-	-	-	3.3	-	5.5						
Pattern																								
Channel Belt Width (ft)				-	-	-	-	-	-	-	-	-	-	-	-	5.4	7.2	9.0						
Radius of Curvature (ft)				-	-	-	-	-	-	-	-	-	-	-	-	7.0	-	11.0						
Rc: Bankfull Width (ft/ft)				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-						
Meander Wavelength (ft)				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-						
Meander Width Ratio				-	-	-	-	-	-	-	-	-	-	-	-	-	2.5	-						

Substrate, Bed and Transport Parameters				
Reach Shear Stress (Competency) lb/ft^2		-	-	-	
Max Part Size (mm) Mobilized at Bankfull		-	-	-	
Stream Power (Transport Capacity) W/m^2		-	-	-	
Additional Reach Parameters				
Drainage Area (mi^2)		0.02	2.4	0.02	
Rosgen Classification		B, G	B4	B4	
Bankfull Velocity (fps)	-	1.7 - 2.0	-	-	
Bankfull Discharge (cfs)	-	3.0	-	1.0	
Valley Length (ft)		-	-	-	
Channel Thalweg Length (ft)		-	-	-	
Sinuosity		1.08	-	1.14	
Water Surface Slope (ft/ft)		0.03 - 0.034	0.011 - 0.018	0.031	
Bankfull Slope (ft/ft)		-	-	-	
Bankfull Floodplain Area (acres)		-	-		
% of Reach with Eroding Banks		-	-		
Channel Stability or Habitat Metric		Unstable	-		
Biological or Other		-	-		

- Information unavailable.

Non-Applicable.

Table 10 Cont'd. Baseline Stream Data Summary
Fletcher Mitigation Site - Coates Branch Reach 1B (601 feet *)

Parameter	Regional Curve			Pre-Existing Condition						Reference Reach Data						Design			As-Built / Baseline					
Dimension & Substrate - Riffle	**LL**	**UL**	**Eq.**	**Min**	**Mean**	**Med**	**Max**	**SD**	**N**	**Min**	**Mean**	**Med**	**Max**	**SD**	**N**	**Min**	**Mean**	**Max**	**Min**	**Mean**	**Med**	**Max**	**SD**	**N**
Bankfull Width (ft)	-	-	-	0.9	-	-	1.3	-	-	14.7	-	-	19.5	-	-	-	5.7	-	-	5.2	-	-	-	1
Floodprone Width (ft)				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15.0	-	-	-	1
Bankfull Mean Depth (ft)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.3	-	-	0.3	-	-	-	1
Bankfull Max Depth (ft)				0.2	-	-	0.3	-	-	1.2	-	-	1.4	-	-	-	0.5	-	-	0.7	-	-	-	1
Bankfull Cross Sectional Area (ft^2)	-			0.2	-	-	0.3	-	-	18	-	-	27.2	-	-	-	1.8	-	-	1.6	-	-	-	1
Width/Depth Ratio				5.1	-	-	5.6	-	-	12	-	-	14.0	-	-	-	17.9	-	-	16.5	-	-	-	1
Entrenchment Ratio				2.0	-	-	2.8	-	-	1.4	-	-	1.5	-	-	-	2.4	-	-	2.9	-	-	-	1
Bank Height Ratio				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.0	-	-	-	1
d50 (mm)				1.0	-	-	2.0	-	-	60.0	-	-	125.0	-	-	-	-	-	-	15.0	-	-	-	1
Profile																								
Riffle Length (ft)				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.0	6.5	6.3	14.0	2.1	52
Riffle Slope (ft/ft)				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.000	0.020	0.016	0.072	0.016	52
Pool Length (ft)				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.2	3.4	3.2	6.3	1.2	51
Pool Max Depth (ft)				-	-	-	-	-	-	-	-	-	-	-	-	-	0.8	-	0.24	1.2	1.1	2.5	0.4	51
Pool Spacing (ft)				-	-	-	-	-	-	-	-	-	-	-	-	18.8	-	31.4	5.8	11.7	12	18.7	2.5	50
Pattern																								
Channel Belt Width (ft)				-	-	-	-	-	-	-	-	-	-	-	-	6.1	8.1	10.2	9.7	10.6	10.5	11.5	0.9	3
Radius of Curvature (ft)				-	-	-	-	-	-	-	-	-	-	-	-	8.0	-	12.0	9.0	11.0	12.0	12.1	1.8	3
Rc: Bankfull Width (ft/ft)				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.5	1.9	2.1	2.1	0.3	3
Meander Wavelength (ft)				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9.7	10.6	10.5	11.5	0.9	3
Meander Width Ratio				-	-	-	-	-	-	-	-	-	-	-	-	-	2.5	-	1.7	1.9	1.8	2.0	0.1	3
Substrate, Bed and Transport Parameters																								
Reach Shear Stress (Competency) lb/ft^2				-						-						-			-					
Max Part Size (mm) Mobilized at Bankfull				-						-						-			-					
Stream Power (Transport Capacity) W/m^2				-						-						-			-					
Additional Reach Parameters																								
Drainage Area (mi^2)				0.03						2.4						0.03								
Rosgen Classification				B, G						B4						B4			B4					
Bankfull Velocity (fps)	-			1.7 - 2.0						-						-								
Bankfull Discharge (cfs)	-			3.0						-						2.0								
Valley Length (ft)				-						-						-			597					
* Channel Thalweg Length (ft)				-						-						-			601					
^ Channel Centerline (ft)				-						-						-			606					
Sinuosity				1.08						-						1.04			1.05					
Water Surface Slope (ft/ft)				0.03 - 0.034						0.011 - 0.018						0.033			0.033					
Bankfull Slope (ft/ft)				-						-						-			0.033					
Bankfull Floodplain Area (acres)				-						-														
% of Reach with Eroding Banks				-						-														
Channel Stability or Habitat Metric				Severe						-														
Biological or Other				-						-														

* Channel Thalweg Length (ft): Based on actual thalweg calculations from the as-built survey, accounts for breaks in conservation easement and utility right-of-ways.

^ Channel Centerline (ft): Based on stream centerline stationing from design stream stationing; accounts for breaks in conservation easement and utility right-of-ways.

- Information unavailable.

Non-Applicable.

Table 10 Cont'd. Baseline Stream Data Summary
Fletcher Mitigation Site - Coates Branch Reach 1C (708 feet *)

Parameter	Regional Curve			Pre-Existing Condition						Reference Reach Data						Design			As-Built / Baseline					
Dimension & Substrate - Riffle	**LL**	**UL**	**Eq.**	**Min**	**Mean**	**Med**	**Max**	**SD**	**N**	**Min**	**Mean**	**Med**	**Max**	**SD**	**N**	**Min**	**Mean**	**Max**	**Min**	**Mean**	**Med**	**Max**	**SD**	**N**
Bankfull Width (ft)	-	-	-	1.9	-	-	3.4	-	-	14.7	-	-	19.5	-	-	-	6.0	-	-	5.4	-	-	-	1
Floodprone Width (ft)				-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	20.0	-	-	-	1
Bankfull Mean Depth (ft)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.3	-	-	0.4	-	-	-	1
Bankfull Max Depth (ft)				0.2	-	-	0.3	-	-	1.2	-	-	1.4	-	-	-	0.5	-	-	0.8	-	-	-	1
Bankfull Cross Sectional Area (ft^2)	-			0.3	-	-	0.8	-	-	18	-	-	27.2	-	-	-	2.0	-	-	2.2	-	-	-	1
Width/Depth Ratio				10.4	-	-	14.5	-	-	12	-	-	14.0	-	-	-	17.8	-	-	13.5	-	-	-	1
Entrenchment Ratio				1.2	-	-	1.9	-	-	1.4	-	-	1.5	-	-	-	2.3	-	-	3.7	-	-	-	1
Bank Height Ratio				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.0	-	-	-	1
d50 (mm)				9.0	-	-	12.0	-	-	60.0	-	-	125.0	-	-	-	-	-	-	0.4	-	-	-	1
Profile																								
Riffle Length (ft)				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.8	7.4	7.7	10.1	1.6	48
Riffle Slope (ft/ft)				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.000	0.010	0.010	0.033	0.007	48
Pool Length (ft)				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.2	4.6	4.2	7.3	1.4	48
Pool Max Depth (ft)				-	-	-	-	-	-	-	-	-	-	-	-	-	0.8	-	0.6	1.0	1.0	1.4	0.2	49
Pool Spacing (ft)				-	-	-	-	-	-	-	-	-	-	-	-	19.8	-	33.0	6.4	14.3	14.6	19.6	2.6	48
Pattern																								
Channel Belt Width (ft)				-	-	-	-	-	-	-	-	-	-	-	-	6.5	8.6	10.8	10.9	11.7	11.6	12.5	0.8	3
Radius of Curvature (ft)				-	-	-	-	-	-	-	-	-	-	-	-	9.0	-	13.0	7.0	8.8	7.2	12.1	2.9	3
Rc: Bankfull Width (ft/ft)				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.2	1.5	1.2	2.1	0.5	3
Meander Wavelength (ft)				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10.9	12.1	11.6	13.7	1.5	3
Meander Width Ratio				-	-	-	-	-	-	-	-	-	-	-	-	-	2.3	-	1.8	2.0	1.9	2.1	0.1	3
Substrate, Bed and Transport Parameters																								
Reach Shear Stress (Competency) lb/ft^2				-						-						-			-					
Max Part Size (mm) Mobilized at Bankfull				-						-						-			-					
Stream Power (Transport Capacity) W/m^2				-						-						-			-					
Additional Reach Parameters																								
Drainage Area (mi^2)				0.04						2.4						0.04								
Rosgen Classification				B, F, G						B4						B4			B4					
Bankfull Velocity (fps)	-			0.9 - 1.8						-						-								
Bankfull Discharge (cfs)	-			4.0						-						3.0								
Valley Length (ft)				-						-						-			667					
* Channel Thalweg Length (ft)				-						-						-			708					
^ Channel Centerline (ft)				-						-						-			708					
Sinuosity				1.03						-						1.07			1.06					
Water Surface Slope (ft/ft)				0.009 - 0.021						0.011 - 0.018						0.015			0.013					
Bankfull Slope (ft/ft)				-						-						-			0.013					
Bankfull Floodplain Area (acres)				-						-														
% of Reach with Eroding Banks				-						-														
Channel Stability or Habitat Metric				Unstable						-														
Biological or Other				-						-														

* Channel Thalweg Length (ft): Based on actual thalweg calculations from the as-built survey, accounts for breaks in conservation easement and utility right-of-ways.

^ Channel Centerline (ft): Based on stream centerline stationing from design stream stationing; accounts for breaks in conservation easement and utility right-of-ways.

- Information unavailable.

Non-Applicable.

Table 10 Cont'd. Baseline Stream Data Summary
Fletcher Mitigation Site - Coates Branch Reach 1D (325 feet *)

Parameter	Regional Curve			Pre-Existing Condition						Reference Reach Data						Design			As-Built / Baseline					
Dimension & Substrate - Riffle	**LL**	**UL**	**Eq.**	**Min**	**Mean**	**Med**	**Max**	**SD**	**N**	**Min**	**Mean**	**Med**	**Max**	**SD**	**N**	**Min**	**Mean**	**Max**	**Min**	**Mean**	**Med**	**Max**	**SD**	**N**
Bankfull Width (ft)	-	-	-	3.6	-	-	5.0	-	-	14.7	-	-	19.5	-	-	-	6.9	-	-	6.1	-	-	-	1
Floodprone Width (ft)				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	25.0	-	-	-	1
Bankfull Mean Depth (ft)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.4	-	-	0.5	-	-	-	1
Bankfull Max Depth (ft)				0.2	-	-	0.3	-	-	1.2	-	-	1.4	-	-	-	0.6	-	-	1.0	-	-	-	1
Bankfull Cross Sectional Area (ft^2)	-			1.0	-	-	1.4	-	-	18	-	-	27.2	-	-	-	2.7	-	-	3.3	-	-	-	1
Width/Depth Ratio				13.0	-	-	18.0	-	-	12	-	-	14.0	-	-	-	17.7	-	-	11.4	-	-	-	1
Entrenchment Ratio				1.7	-	-	1.8	-	-	1.4	-	-	1.5	-	-	-	2.2	-	-	4.1	-	-	-	1
Bank Height Ratio				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.0	-	-	-	1
d50 (mm)				8.0	-	-	14.0	-	-	60.0	-	-	125.0	-	-	-	-	-	-	4.0	-	-	-	1
Profile																								
Riffle Length (ft)				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4.1	7.2	7.3	11.9	1.8	22
Riffle Slope (ft/ft)				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.000	0.008	0.006	0.021	0.006	22
Pool Length (ft)				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.8	4.6	4.4	8.1	1.8	22
Pool Max Depth (ft)				-	-	-	-	-	-	-	-	-	-	-	-	-	0.9	-	0.6	1.1	1.1	2.2	0.3	22
Pool Spacing (ft)				-	-	-	-	-	-	-	-	-	-	-	-	22.8	-	38.0	8.0	13.9	14.0	19.1	3.2	21
Pattern																								
Channel Belt Width (ft)				-	-	-	-	-	-	-	-	-	-	-	-	7.4	9.9	12.3	11.5	12.7	12.8	13.8	1.2	3
Radius of Curvature (ft)				-	-	-	-	-	-	-	-	-	-	-	-	10.0	-	15.0	4.7	7.0	7.2	9.2	2.3	3
Rc: Bankfull Width (ft/ft)				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.7	1.0	1.0	1.3	0.3	3
Meander Wavelength (ft)				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11.5	12.5	12.1	13.8	1.2	3
Meander Width Ratio				-	-	-	-	-	-	-	-	-	-	-	-	-	2.6	-	1.7	1.8	1.9	2.0	0.1	3
Substrate, Bed and Transport Parameters																								
Reach Shear Stress (Competency) lb/ft^2				-						-						-			-					
Max Part Size (mm) Mobilized at Bankfull				-						-						-			-					
Stream Power (Transport Capacity) W/m^2				-						-						-			-					
Additional Reach Parameters																								
Drainage Area (mi^2)				0.07						2.4						0.07								
Rosgen Classification				B						B4						B4			B4					
Bankfull Velocity (fps)	-			0.9 - 1.3						-						-								
Bankfull Discharge (cfs)	-			7.0						-						5.0								
Valley Length (ft)				-						-						-			311					
* Channel Thalweg Length (ft)				-						-						-			325					
^ Channel Centerline (ft)				-						-						-			325					
Sinuosity				1.05						-						1.12			1.05					
Water Surface Slope (ft/ft)				0.004 - 0.009						0.011 - 0.018						0.015			0.013					
Bankfull Slope (ft/ft)				-						-						-			0.014					
Bankfull Floodplain Area (acres)				-						-														
% of Reach with Eroding Banks				-						-														
Channel Stability or Habitat Metric				Unstable						-														
Biological or Other				-						-														

* Channel Thalweg Length (ft): Based on actual thalweg calculations from the as-built survey, accounts for breaks in conservation easement and utility right-of-ways.

^ Channel Centerline (ft): Based on stream centerline stationing from design stream stationing; accounts for breaks in conservation easement and utility right-of-ways.

- Information unavailable.

Non-Applicable.

Table 11a. Monitoring Data - Dimensional Morphology Summary (Dimensional Parameters – Cross Sections)
Fletcher Mitigation Site

	Cross Section 1 (Riffle) Fletcher Creek Reach 1B									Cross Section 2 (Pool) Fletcher Creek Reach 1B									Cross Section 3 (Pool) Fletcher Creek Reach 1C									Cross Section 4 (Riffle) Fletcher Creek Reach 1C								
Dimension	**Base**	**Pre-MY1**	**MY1**	**MY2**	**MY3**	**MY4**	**MY5**	**MY6**	**MY7**	**Base**	**Pre-MY1**	**MY1**	**MY2**	**MY3**	**MY4**	**MY5**	**MY6**	**MY7**	**Base**	**Pre-MY1**	**MY1**	**MY2**	**MY3**	**MY4**	**MY5**	**MY6**	**MY7**	**Base**	**Pre-MY1**	**MY1**	**MY2**	**MY3**	**MY4**	**MY5**	**MY6**	**MY7**
Record Elevation (datum) Used	2124.8	2124.7	2124.6							2123.0	2123.1	2123.1							2118.8	2118.9	2118.9							2118.5	2118.44	2118.49						
Low Bank Height Elevation (datum) Used	2124.8	2124.7	2124.7							2123.0	2123.4	2122.9							2118.8	2118.6	2118.6							2118.5	2118.62	2119.47						
Bankfull Width (ft)	7.1	6.1	6.1							10.9	11.9	12.2							10.9	7.5	12.2							7.6	6.1	6.5						
Floodprone Width (ft)	20.0	20.0	20.0							60.0	60.0	60.0							40.0	40.0	40.0							10.0	10.0	10.0						
Bankfull Mean Depth (ft)	0.3	0.4	0.4							1.7	1.5	1.3							0.9	1.4	0.8							0.3	0.3	0.3						
Bankfull Max Depth (ft)	0.6	0.6	0.6							2.7	2.5	2.2							1.8	2.0	2.0							0.5	0.5	0.4						
Bankfull Cross Sectional Area (ft^2)	2.3	2.3	2.3							18.3	18.3	18.3							10.3	10.3	10.3							2.1	2.1	2.1						
Bankfull Width/Depth Ratio	21.4	16.4	15.9							6.5	7.8	9.4							11.6	5.5	14.5							27.6	18.2	19.8						
Bankfull Entrenchment Ratio	2.8	3.3	3.3							5.5	5.0	4.9							3.7	5.3	3.3							1.3	1.6	1.5						
*Bankfull Bank Height Ratio	1.0	1.1	1.1							1.0	1.1	0.9							1.0	0.8	0.8							1.0	1.4	1.3						
Low Top of Bank Depth (ft)	0.6	0.7	0.7							2.7	2.9	2.0							1.8	1.6	1.7							0.5	0.6	0.6						

	Cross Section 5 (Pool) Fletcher Creek Reach 1C									Cross Section 6 (Riffle) Fletcher Creek Reach 1C									Cross Section 7 (Riffle) Fletcher Creek Reach 2A									Cross Section 8 (Pool) Fletcher Creek Reach 2A								
Dimension	**Base**	**Pre-MY1**	**MY1**	**MY2**	**MY3**	**MY4**	**MY5**	**MY6**	**MY7**	**Base**	**Pre-MY1**	**MY1**	**MY2**	**MY3**	**MY4**	**MY5**	**MY6**	**MY7**	**Base**	**Pre-MY1**	**MY1**	**MY2**	**MY3**	**MY4**	**MY5**	**MY6**	**MY7**	**Base**	**Pre-MY1**	**MY1**	**MY2**	**MY3**	**MY4**	**MY5**	**MY6**	**MY7**
Record Elevation (datum) Used	2106.8	2106.8	2106.9							2106.2	2106.2	2106.3							2101.4	2101.3	2101.1							2100.9	2100.9	2100.9						
Low Bank Height Elevation (datum) Used	2106.8	2106.3	2106.3							2106.2	2106.6	2106.6							2101.4	2101.3	2101.0							2100.9	2100.3	2100.6						
Bankfull Width (ft)	16.6	14.0	18.7							12.0	12.9	13.0							13.1	10.6	11.7							15.3	15.0	15.7						
Floodprone Width (ft)	60.0	60.0	60.0							50.0	50.0	50.0							35.0	35.0	35.0							50.0	50.0	50.0						
Bankfull Mean Depth (ft)	1.2	1.5	1.1							0.6	0.6	0.6							0.8	1.0	0.9							1.3	1.4	1.3						
Bankfull Max Depth (ft)	3.0	3.5	3.4							1.0	1.0	1.0							1.6	1.7	1.8							2.6	2.8	2.8						
Bankfull Cross Sectional Area (ft^2)	20.3	20.3	20.3							7.5	7.5	7.5							10.4	10.4	10.4							20.5	20.5	20.5						
Bankfull Width/Depth Ratio	13.7	9.6	17.2							19.2	22.4	22.4							16.5	10.7	13.2							11.4	11.0	12.0						
Bankfull Entrenchment Ratio	3.6	4.3	3.2							4.2	3.9	3.9							2.7	3.3	3.0							3.3	3.3	3.2						
*Bankfull Bank Height Ratio	1.0	0.8	0.8							1.0	1.4	1.4							1.0	1.0	0.9							1.0	0.8	0.9						
Low Top of Bank Depth (ft)	3.0	3.0	2.8							1.2	1.4	1.4							1.6	1.8	1.7							2.6	2.2	2.4						

	Cross Section 9 (Pool) Fletcher Creek Reach 2A									Cross Section 10 (Riffle) Fletcher Creek Reach 2A									Cross Section 11 (Riffle) Fletcher Creek Reach 2B									Cross Section 12 (Pool) Fletcher Creek Reach 2B								
Dimension	**Base**	**Pre-MY1**	**MY1**	**MY2**	**MY3**	**MY4**	**MY5**	**MY6**	**MY7**	**Base**	**Pre-MY1**	**MY1**	**MY2**	**MY3**	**MY4**	**MY5**	**MY6**	**MY7**	**Base**	**Pre-MY1**	**MY1**	**MY2**	**MY3**	**MY4**	**MY5**	**MY6**	**MY7**	**Base**	**Pre-MY1**	**MY1**	**MY2**	**MY3**	**MY4**	**MY5**	**MY6**	**MY7**
Record Elevation (datum) Used	2093.5	2093.6	2093.3							2093.1	2092.9	2093.0							2079.0	2079.1	2079.3							2078.6	2078.7	2078.7						
Low Bank Height Elevation (datum) Used	2093.5	2093.6	2092.6							2093.1	2093.1	2093.3							2079.0	2079.3	2079.3							2078.6	2078.8	2078.7						
Bankfull Width (ft)	15.6	16.1	13.6							12.6	11.0	11.8							10.2	9.6	11.2							9.7	10.0	9.7						
Floodprone Width (ft)	60.0	60.0	60.0							50.0	50.0	50.0							40.0	40.0	40.0							70.0	70.0	70.0						
Bankfull Mean Depth (ft)	1.1	1.0	1.2							0.7	0.8	0.8							0.7	0.7	0.6							1.2	1.2	1.2						
Bankfull Max Depth (ft)	2.8	2.3	2.8							1.2	1.6	1.7							1.3	1.1	1.2							2.3	2.2	2.2						
Bankfull Cross Sectional Area (ft^2)	16.9	16.9	16.9							9.2	9.2	9.2							7.1	7.1	7.1							11.7	11.7	11.7						
Bankfull Width/Depth Ratio	14.4	15.4	10.9							17.4	13.2	15.0							14.6	13.0	17.7							8.1	8.5	8.1						
Bankfull Entrenchment Ratio	3.9	3.7	4.4							4.0	4.6	4.3							3.9	4.2	3.6							7.2	7.0	7.2						
*Bankfull Bank Height Ratio	1.0	1.0	0.7							1.0	1.1	1.2							1.0	1.2	1.0							1.0	1.0	1.0						
Low Top of Bank Depth (ft)	2.8	2.3	2.1							1.5	1.7	2.0							1.3	1.4	1.2							2.3	2.2	2.2						

	Cross Section 13 (Pool) Fletcher Creek Reach 2B									Cross Section 14 (Riffle) Fletcher Creek Reach 2B								
Dimension	**Base**	**Pre-MY1**	**MY1**	**MY2**	**MY3**	**MY4**	**MY5**	**MY6**	**MY7**	**Base**	**Pre-MY1**	**MY1**	**MY2**	**MY3**	**MY4**	**MY5**	**MY6**	**MY7**
Record Elevation (datum) Used	2075.5	2075.5	2075.4							2075.1	2075.2	2075.3						
Low Bank Height Elevation (datum) Used	2075.5	2075.6	2075.8							2075.1	2075.2	2075.4						
Bankfull Width (ft)	10.1	13.1	9.9							9.8	10.3	9.7						
Floodprone Width (ft)	70.0	70.0	70.0							70.0	70.0	70.0						
Bankfull Mean Depth (ft)	1.6	1.2	1.7							0.8	0.7	0.8						
Bankfull Max Depth (ft)	2.4	2.6	2.8							1.2	1.1	1.2						
Bankfull Cross Sectional Area (ft^2)	16.4	16.4	16.4							7.6	7.6	7.6						
Bankfull Width/Depth Ratio	6.2	10.5	6.0							12.6	14.0	12.3						
Bankfull Entrenchment Ratio	6.9	5.3	7.1							7.2	6.8	7.2						
*Bankfull Bank Height Ratio	1.0	1.0	1.1							1.0	1.1	1.1						
Low Top of Bank Depth (ft)	2.4	2.7	3.2							1.2	1.1	1.4						

*Bank Height Ratio is calculated based on the As-built (MY0) cross-sectional area as described in the Standard Measurement of the BHR Monitoring Parameter document produced by the technical industry work group consisting of the NCIRT, NCDMS, and Industry Practitioners in NC (9/2018). The remainder of the bankfull dimensions are calculated based on the current year's low bank height.
+ Data not collected due to adaptive management on Weston Reach 1A and 1B

Table 11a Cont'd. Monitoring Data - Dimensional Morphology Summary (Dimensional Parameters – Cross Sections)
Fletcher Mitigation Site

	Cross Section 15 (Riffle) Weston Creek 1A									Cross Section 16 (Pool) Weston Creek 1A								Cross Section 17 (Pool) Weston Creek 1A								Cross Section 18 (Riffle) Weston Creek 1A							
Dimension	**Base**	**+Pre-MY1**	**MY1**	**MY2**	**MY3**	**MY4**	**MY5**	**MY6**	**MY7**	**Base**	**+Pre-MY1**	**MY1**	**MY2**	**MY3**	**MY4**	**MY5**	**MY6**	**MY7**	**Base**	**+Pre-MY1**	**MY1**	**MY2**	**MY3**	**MY4**	**MY5**	**MY6**	**MY7**	**Base**	**+Pre-MY1**	**MY1**	**MY2**	**MY3**	**MY4**	**MY5**	**MY6**	**MY7**
Record Elevation (datum) Used	2082.5	-	2082.6							2082.3	-	2082.5							2076.2	-	2076.4							2076.3	-	2076.3						
Low Bank Height Elevation (datum) Used	2082.5	-	2082.8							2082.3	-	2082.4							2076.2	-	2076.3							2076.3	-	2076.2						
Bankfull Width (ft)	9.1	-	10.8							9.7	-	9.3							9.8	-	8.2							10.4	-	23.5						
Floodprone Width (ft)	50.0	-	50.0							50.0	-	50.0							50.0	-	50.0							50.0	-	50.0						
Bankfull Mean Depth (ft)	0.6	-	0.5							1.1	-	1.1							1.0	-	1.1							0.6	-	0.3						
Bankfull Max Depth (ft)	1.1	-	1.2							2.0	-	1.8							1.7	-	1.9							0.9	-	0.9						
Bankfull Cross Sectional Area (ft^2)	5.4	-	5.4							10.4	-	10.4							9.4	-	9.4							6.2	-	6.2						
Bankfull Width/Depth Ratio	15.5	-	21.7							9.1	-	8.3							10.1	-	7.2							17.4	-	89.4						
Bankfull Entrenchment Ratio	5.5	-	4.6							5.1	-	5.4							5.1	-	6.1							4.8	-	2.1						
*Bankfull Bank Height Ratio	1.0	-	1.2							1.0	-	0.9							1.0	-	0.9							1.0	-	1.0						
Low Top of Bank Depth (ft)	1.1	-	1.4							2.0	-	1.7							1.7	-	1.8							0.9	-	0.9						

	Cross Section 19 (Riffle) Weston Creek 2B									Cross Section 20 (Pool) Weston Creek 2B								Cross Section 21 (Pool) Raccoon Branch 1D								Cross Section 22 (Riffle) Raccoon Branch 1D							
Dimension	**Base**	**+Pre-MY1**	**MY1**	**MY2**	**MY3**	**MY4**	**MY5**	**MY6**	**MY7**	**Base**	**+Pre-MY1**	**MY1**	**MY2**	**MY3**	**MY4**	**MY5**	**MY6**	**MY7**	**Base**	**Pre-MY1**	**MY1**	**MY2**	**MY3**	**MY4**	**MY5**	**MY6**	**MY7**	**Base**	**Pre-MY1**	**MY1**	**MY2**	**MY3**	**MY4**	**MY5**	**MY6**	**MY7**
Record Elevation (datum) Used	2074.9	-	2075.0							2074.8	-	2074.9							2131.4	2131.5	2131.5							2131.4	2131.4	2131.4						
Low Bank Height Elevation (datum) Used	2074.9	-	2075.3							2074.8	-	2074.8							2131.4	2131.2	2131.1							2131.4	2131.0	2131.3						
Bankfull Width (ft)	9.7	-	9.4							8.3	-	13.4							5.6	6.1	6.1							6.9	7.8	6.9						
Floodprone Width (ft)	40.0	-	40.0							60.0	-	60.0							20.0	20.0	20.0							20.0	20.0	20.0						
Bankfull Mean Depth (ft)	0.5	-	0.5							1.5	-	0.9							0.5	0.4	0.4							0.5	0.4	0.5						
Bankfull Max Depth (ft)	0.7	-	0.8							2.5	-	2.5							1.2	1.2	1.1							1.3	0.9	0.9						
Bankfull Cross Sectional Area (ft^2)	4.7	-	4.7							12.7	-	12.7							2.7	2.7	2.7							3.4	3.4	3.4						
Bankfull Width/Depth Ratio	20.4	-	19.0							5.4	-	14.2							11.6	13.7	13.8							13.8	18.1	14.2						
Bankfull Entrenchment Ratio	4.1	-	4.2							7.2	-	0.0							3.6	3.3	3.3							2.9	2.6	2.9						
*Bankfull Bank Height Ratio	1.0	-	1.3							1.0	-	1.0							1.0	0.7	0.6							1.0	0.6	0.8						
Low Top of Bank Depth (ft)	0.7	-	1.0							2.5	-	2.4							1.2	0.8	0.7							1.3	0.5	0.7						

	Cross Section 23 (Riffle) Coates Branch 1B									Cross Section 24 (Pool) Coates Branch 1B								Cross Section 25 (Pool) Coates Branch 1C								Cross Section 26 (Riffle) Coates Branch 1C							
Dimension	**Base**	**Pre-MY1**	**MY1**	**MY2**	**MY3**	**MY4**	**MY5**	**MY6**	**MY7**	**Base**	**Pre-MY1**	**MY1**	**MY2**	**MY3**	**MY4**	**MY5**	**MY6**	**MY7**	**Base**	**Pre-MY1**	**MY1**	**MY2**	**MY3**	**MY4**	**MY5**	**MY6**	**MY7**	**Base**	**Pre-MY1**	**MY1**	**MY2**	**MY3**	**MY4**	**MY5**	**MY6**	**MY7**
Record Elevation (datum) Used	2121.0	2121.1	2121.1							2121.1	2121.1	2121.2							2108.0	2108.1	2108.1							2107.9	2107.9	2108.0						
Low Bank Height Elevation (datum) Used	2121.0	2121.2	2121.2							2121.1	2121.0	2121.0							2108.0	2108.1	2107.9							2107.9	2107.9	2107.9						
Bankfull Width (ft)	5.2	4.9	3.4							7.4	8.6	7.9							5.3	5.6	6.2							5.4	5.5	5.8						
Floodprone Width (ft)	15.0	15.0	15.0							40.0	40.0	40.0							20.0	20.0	20.0							20.0	20.0	20.0						
Bankfull Mean Depth (ft)	0.3	0.3	0.5							0.7	0.6	0.6							0.5	0.5	0.4							0.4	0.4	0.4						
Bankfull Max Depth (ft)	0.7	0.5	1.0							1.5	1.3	1.4							0.9	0.9	0.9							0.8	0.6	0.6						
Bankfull Cross Sectional Area (ft^2)	1.6	1.6	1.6							5.1	5.1	5.1							2.7	2.7	2.7							2.2	2.2	2.2						
Bankfull Width/Depth Ratio	16.5	15.1	7.5							10.7	14.5	12.3							10.5	11.3	14.5							13.5	14.0	15.4						
Bankfull Entrenchment Ratio	2.9	3.1	4.4							5.4	4.6	5.0							3.8	3.6	3.2							3.7	3.6	3.4						
*Bankfull Bank Height Ratio	1.0	1.1	1.1							1.0	0.9	0.9							1.0	1.0	0.8							1.0	1.0	0.8						
Low Top of Bank Depth (ft)	0.7	0.6	1.1							1.5	1.2	1.2							0.9	0.9	0.8							0.8	0.6	0.5						

	Cross Section 27 (Pool) Coates Branch 1D									Cross Section 28 (Riffle) Coates Branch 1D								
Dimension	**Base**	**Pre-MY1**	**MY1**	**MY2**	**MY3**	**MY4**	**MY5**	**MY6**	**MY7**	**Base**	**Pre-MY1**	**MY1**	**MY2**	**MY3**	**MY4**	**MY5**	**MY6**	**MY7**
Record Elevation (datum) Used	2105.7	2105.7	2105.7							2105.6	2105.6	2105.7						
Low Bank Height Elevation (datum) Used	2105.7	2105.7	2105.5							2105.6	2105.6	2105.5						
Bankfull Width (ft)	5.9	6.9	6.4							6.1	7.4	7.5						
Floodprone Width (ft)	25.0	25.0	25.0							25.0	25.0	25.0						
Bankfull Mean Depth (ft)	0.6	0.5	0.6							0.5	0.4	0.4						
Bankfull Max Depth (ft)	1.2	1.3	1.1							1.0	0.9	0.9						
Bankfull Cross Sectional Area (ft^2)	3.7	3.7	3.7							3.3	3.3	3.3						
Bankfull Width/Depth Ratio	9.2	13.2	11.1							11.4	16.5	17.2						
Bankfull Entrenchment Ratio	4.3	3.6	3.9							4.1	3.4	3.3						
*Bankfull Bank Height Ratio	1.0	1.0	0.8							1.0	1.0	0.9						
Low Top of Bank Depth (ft)	1.2	1.3	1.0							1.0	0.9	0.8						

*Bank Height Ratio is calculated based on the As-built (MY0) cross-sectional area as described in the Standard Measurement of the BHR Monitoring Parameter document produced by the technical industry work group consisting of the NCIRT, NCDMS, and Industry Practitioners in NC (9/2018). The remainder of the bankfull dimensions are calculated based on the current year's low bank height.

+ Data not collected due to adaptive management on Weston Reach 1A and 1B

Table 11b. Monitoring Data - Stream Reach Data Summary
Fletcher Mitigation Site - Fletcher Creek Reach 1B (380 feet *)

Parameter	Baseline						Pre-MY - 1						MY - 1						MY - 2						MY - 3						MY - 4						MY -5						MY - 6					
Dimension & Substrate - Riffle	**Min**	**Mean**	**Med**	**Max**	**SD**	**n**	**Min**	**Mean**	**Med**	**Max**	**SD**	**n**	**Min**	**Mean**	**Med**	**Max**	**SD**	**n**	**Min**	**Mean**	**Med**	**Max**	**SD**	**n**	**Min**	**Mean**	**Med**	**Max**	**SD**	**n**	**Min**	**Mean**	**Med**	**Max**	**SD**	**n**	**Min**	**Mean**	**Med**	**Max**	**SD**	**n**	**Min**	**Mean**	**Med**	**Max**	**SD**	**n**
Bankfull Width (ft)	-	7.1	-	-	-	1	-	6.1	-	-	-	1	-	6.1	-	-	-	1																														
Floodprone Width (ft)	-	20.0	-	-	-	1	-	20.0	-	-	-	1	-	20.0	-	-	-	1																														
Bankfull Mean Depth (ft)	-	0.3	-	-	-	1	-	0.4	-	-	-	1	-	0.4	-	-	-	1																														
Bankfull Max Depth (ft)	-	0.6	-	-	-	1	-	0.6	-	-	-	1	-	0.6	-	-	-	1																														
Bankfull Cross-Sectional Area (ft^2)	-	2.3	-	-	-	1	-	2.3	-	-	-	1	-	2.3	-	-	-	1																														
Width/Depth Ratio	-	21.4	-	-	-	1	-	16.4	-	-	-	1	-	15.9	-	-	-	1																														
Entrenchment Ratio	-	2.8	-	-	-	1	-	3.3	-	-	-	1	-	3.3	-	-	-	1																														
Bank Height Ratio	-	1.0	-	-	-	1	-	1.0	-	-	-	1	-	1.1	-	-	-	1																														
Profile																																																
Riffle Length (ft)	4.8	8.5	8.0	13.1	2.5	13																																										
Riffle Slope (ft/ft)	0.002	0.018	0.014	0.044	0.013	13																																										
Pool Length (ft)	5.1	9.6	9.7	14.4	2.8	12																																										
Pool Max Depth (ft)	1.2	2.0	1.9	2.9	0.5	12																																										
Pool Spacing (ft)	14.6	27.9	29.4	40.5	8.0	11																																										
Pattern																																															
Channel Belt Width (ft)	17.7	18.2	17.8	19.0	0.7	3																																										
Radius of Curvature (ft)	17.0	22.7	25.0	26.0	4.9	3																																										
Rc: Bankfull Width (ft/ft)	2.0	2.6	2.9	3.0	0.6	3																																										
Meander Wavelength (ft)	17.7	18.2	17.8	19.1	0.8	3																																										
Meander Width Ratio	2.0	2.1	2.0	2.2	0.1	3																																										
Additional Reach Parameters																																															
Rosgen Classification	B4																																															
*Channel Thalweg Length (ft)	380																																															
Sinuosity (ft)	1.12																																															
Water Surface Slope (Channel) (ft/ft)	0.015																																															
Bankfull Slope (ft/ft)	0.016																																															
Ri% / Ru% / P% / G% / S%	30%	26%	32%	12%	0%																																										

* Channel Thalweg Length (ft): Based on actual thalweg calculations from the as-built survey, accounts for breaks in conservation easement and utility right-of-ways.

- Information Unavailable

N/A - Information does not apply.

Ri = Riffle / Ru = Run / P = Pool / G = Glide / S = Step

Table 11b Cont'd. Monitoring Data - Stream Reach Data Summary
Fletcher Mitigation Site - Fletcher Creek Reach 1C (1,541 feet *)

Parameter	Baseline						Pre-MY - 1						MY - 1						MY - 2						MY - 3						MY - 4						MY - 5						MY - 6					
Dimension & Substrate - Riffle	**Min**	**Mean**	**Med**	**Max**	**SD**	**n**	**Min**	**Mean**	**Med**	**Max**	**SD**	**n**	**Min**	**Mean**	**Med**	**Max**	**SD**	**n**	**Min**	**Mean**	**Med**	**Max**	**SD**	**n**	**Min**	**Mean**	**Med**	**Max**	**SD**	**n**	**Min**	**Mean**	**Med**	**Max**	**SD**	**n**	**Min**	**Mean**	**Med**	**Max**	**SD**	**n**	**Min**	**Mean**	**Med**	**Max**	**SD**	**n**
Bankfull Width (ft)	7.6	9.8	9.8	12.0	3.1	2	6.1	9.5	9.5	12.9	4.8	2	6.5	9.7	9.7	13.0	4.6	2																														
Floodprone Width (ft)	10.0	30.0	30.0	50.0	28.3	2	10.0	30.0	30.0	50.0	28.3	2	10.0	30.0	30.0	50.0	28.3	2																														
Bankfull Mean Depth (ft)	0.3	0.5	0.5	0.6	0.2	2	0.3	0.5	0.5	0.6	0.2	2	0.3	0.5	0.5	0.6	0.2	2																														
Bankfull Max Depth (ft)	0.5	0.8	0.8	1.0	0.4	2	0.5	0.7	0.7	1.0	0.4	2	0.4	0.7	0.7	1.0	0.4	2																														
Bankfull Cross-Sectional Area (ft^2)	2.1	4.8	4.8	7.5	3.8	2	2.1	4.8	4.8	7.5	3.8	2	2.1	4.8	4.8	7.5	3.8	2																														
Width/Depth Ratio	19.2	23.4	23.4	27.6	6.0	2	18.2	20.3	20.3	22.4	3.0	2	19.8	21.1	21.1	22.4	1.9	2																														
Entrenchment Ratio	1.3	2.7	2.7	4.2	2.0	2	1.6	2.7	2.7	3.9	1.6	2	1.5	2.7	2.7	3.9	1.6	2																														
Bank Height Ratio	1.0	1.0	1.0	1.0	0.0	2	1.4	1.4	1.4	1.4	0.0	2	1.3	1.3	1.3	1.4	0.0	2																														
Profile																																															
Riffle Length (ft)	3.4	10.9	11.1	21.1	4.9	44																																										
Riffle Slope (ft/ft)	0.000	0.009	0.007	0.029	0.008	44																																										
Pool Length (ft)	6.3	13.1	12.8	29.0	4.6	44																																										
Pool Max Depth (ft)	1.5	2.8	2.8	4.0	0.6	44																																										
Pool Spacing (ft)	13.5	35.0	34.4	96.1	13.5	43																																										
Pattern																																															
Channel Belt Width (ft)	18.7	20.2	19.7	22.3	1.9	3																																										
Radius of Curvature (ft)	17.2	21.0	20.6	25.3	4.1	3																																										
Rc: Bankfull Width (ft/ft)	1.8	2.2	2.2	2.7	0.5	3																																										
Meander Wavelength (ft)	18.7	20.2	19.7	22.3	1.9	3																																										
Meander Width Ratio	2.0	2.1	2.1	2.4	0.2	3																																										
Additional Reach Parameters																																															
Rosgen Classification	B4																																															
*Channel Thalweg Length (ft)	1,541																																															
Sinuosity (ft)	1.10																																															
Water Surface Slope (Channel) (ft/ft)	0.012																																															
Bankfull Slope (ft/ft)	0.012																																															
Ri% / Ru% / P% / G% / S%	32%	19%	38%	11%	0%																																										

* Channel Thalweg Length (ft): Based on actual thalweg calculations from the as-built survey, accounts for breaks in conservation easement and utility right-of-ways.

- Information Unavailable

N/A - Information does not apply.

Ri = Riffle / Ru = Run / P = Pool / G = Glide / S = Step

Table 11b Cont'd. Monitoring Data - Stream Reach Data Summary
Fletcher Mitigation Site - Fletcher Creek Reach 2A (1,299 feet *)

Parameter	Baseline						Pre-MY - 1						MY - 1						MY - 2						MY -3						MY -4						MY - 5						MY - 6					
Dimension & Substrate - Riffle	**Min**	**Mean**	**Med**	**Max**	**SD**	**n**	**Min**	**Mean**	**Med**	**Max**	**SD**	**n**	**Min**	**Mean**	**Med**	**Max**	**SD**	**n**	**Min**	**Mean**	**Med**	**Max**	**SD**	**n**	**Min**	**Mean**	**Med**	**Max**	**SD**	**n**	**Min**	**Mean**	**Med**	**Max**	**SD**	**n**	**Min**	**Mean**	**Med**	**Max**	**SD**	**n**	**Min**	**Mean**	**Med**	**Max**	**SD**	**n**
Bankfull Width (ft)	13.1	14.3	14.3	15.5	1.7	2	10.6	13.4	13.4	16.1	4.0	2	11.7	12.6	12.6	13.6	1.3	2																														
Floodprone Width (ft)	35.0	47.5	47.5	60.0	17.7	2	35.0	47.5	47.5	60.0	17.7	2	35.0	47.5	47.5	60.0	17.7	2																												
Bankfull Mean Depth (ft)	0.8	0.9	0.9	1.1	0.2	2	1.0	1.0	1.0	1.0	0.0	2	0.9	1.1	1.1	1.2	0.3	2																												
Bankfull Max Depth (ft)	1.6	2.2	2.2	2.8	0.8	2	1.7	2.0	2.0	2.3	0.4	2	1.8	2.3	2.3	2.8	0.7	2																												
Bankfull Cross-Sectional Area (ft^2)	10.4	13.6	13.6	16.9	4.6	2	10.4	13.7	13.7	16.9	4.6	2	10.4	13.6	13.6	16.9	4.6	2																												
Width/Depth Ratio	14.2	15.3	15.3	16.5	1.7	2	10.7	13.0	13.0	15.4	3.3	2	10.9	12.0	12.0	13.2	1.6	2																												
Entrenchment Ratio	2.7	3.3	3.3	3.9	0.9	2	3.3	3.5	3.5	3.7	0.3	2	3.0	3.7	3.7	4.4	1.0	2																												
Bank Height Ratio	1.0	1.0	1.0	1.0	0.0	2	1.0	1.0	1.0	1.0	0.0	2	0.7	0.8	0.8	0.9	0.1	2																												
Profile																																															
Riffle Length (ft)	5.3	16.0	14.6	32.2	6.7	35																																									
Riffle Slope (ft/ft)	0.001	0.010	0.008	0.028	0.007	35																																									
Pool Length (ft)	5.6	10.8	10.2	25.3	4.2	34																																									
Pool Max Depth (ft)	1.2	2.5	2.6	3.7	0.7	34																																									
Pool Spacing (ft)	9.4	36.8	37.5	52.2	9.4	33																																									
Pattern																																															
Channel Belt Width (ft)	23.8	24.5	24.1	25.5	0.9	3																																									
Radius of Curvature (ft)	16.8	22.1	19.8	29.6	6.7	3																																									
Rc: Bankfull Width (ft/ft)	1.6	2.1	1.9	2.8	0.6	3																																									
Meander Wavelength (ft)	23.8	24.5	24.1	25.5	0.9	3																																									
Meander Width Ratio	2.3	2.4	2.3	2.5	0.1	3																																									
Additional Reach Parameters																																															
Rosgen Classification	B4																																														
*Channel Thalweg Length (ft)	1,299																																														
Sinuosity (ft)	1.15																																														
Water Surface Slope (Channel) (ft/ft)	0.011																																														
Bankfull Slope (ft/ft)	0.012																																														
Ri% / Ru% / P% / G% / S%	44%	15%	29%	12%	0%																																									

* Channel Thalweg Length (ft): Based on actual thalweg calculations from the as-built survey, accounts for breaks in conservation easement and utility right-of-ways.

- Information Unavailable

N/A - Information does not apply.

Ri = Riffle / Ru = Run / P = Pool / G = Glide / S = Step

Table 11b Cont'd. Monitoring Data - Stream Reach Data Summary
Fletcher Mitigation Site - Fletcher Creek Reach 2B (1,510 feet *)

Parameter	Baseline						Pre-MY - 1						MY - 1						MY - 2						MY - 3						MY - 4						MY - 5						MY - 6					
Dimension & Substrate - Riffle	**Min**	**Mean**	**Med**	**Max**	**SD**	**n**	**Min**	**Mean**	**Med**	**Max**	**SD**	**n**	**Min**	**Mean**	**Med**	**Max**	**SD**	**n**	**Min**	**Mean**	**Med**	**Max**	**SD**	**n**	**Min**	**Mean**	**Med**	**Max**	**SD**	**n**	**Min**	**Mean**	**Med**	**Max**	**SD**	**n**	**Min**	**Mean**	**Med**	**Max**	**SD**	**n**	**Min**	**Mean**	**Med**	**Max**	**SD**	**n**
Bankfull Width (ft)	9.8	10.0	10.0	10.2	0.3	2	9.6	9.9	9.9	10.3	0.5	2	9.7	10.4	10.4	11.2	1.1	2																												
Floodprone Width (ft)	40.0	55.0	55.0	70.0	21.2	2	40.0	55.0	55.0	70.0	21.2	2	40.0	55.0	55.0	70.0	21.2	2																										
Bankfull Mean Depth (ft)	0.7	0.7	0.7	0.8	0.1	2	0.7	0.7	0.7	0.7	0.0	2	0.6	0.7	0.7	0.8	0.1	2																										
Bankfull Max Depth (ft)	1.2	1.3	1.3	1.3	0.1	2	1.1	1.1	1.1	1.1	0.1	2	1.2	1.2	1.2	1.2	0.0	2																										
Bankfull Cross-Sectional Area (ft^2)	7.1	7.4	7.4	7.6	0.3	2	7.1	7.3	7.3	7.6	0.3	2	7.1	7.3	7.3	7.6	0.4	2																										
Width/Depth Ratio	12.6	13.6	13.6	14.6	1.4	2	13.0	13.5	13.5	14.0	0.7	2	12.3	15.0	15.0	17.7	3.8	2																										
Entrenchment Ratio	3.9	5.5	5.5	7.2	2.3	2	4.2	5.5	5.5	6.8	1.9	2	3.6	5.4	5.4	7.2	2.6	2																										
Bank Height Ratio	1.0	1.0	1.0	1.0	0.0	2	1.1	1.1	1.1	1.1	0.0	2	1.0	1.1	1.1	1.1	0.1	2																										
Profile																																													
Riffle Length (ft)	5.3	16.0	14.6	32.2	6.7	35																																						
Riffle Slope (ft/ft)	0.001	0.010	0.008	0.028	0.007	35																																						
Pool Length (ft)	5.6	10.8	10.2	25.3	4.2	34																																						
Pool Max Depth (ft)	1.2	2.5	2.6	3.7	0.7	34																																						
Pool Spacing (ft)	9.4	36.8	37.5	52.2	9.4	33																																						
Pattern																																											
Channel Belt Width (ft)	18.0	19.9	19.2	22.6	2.4	3																																						
Radius of Curvature (ft)	23.5	25.3	24.8	27.5	2.0	3																																						
Rc: Bankfull Width (ft/ft)	2.2	2.4	2.3	2.6	0.2	3																																						
Meander Wavelength (ft)	17.9	19.9	19.2	22.6	2.4	3																																						
Meander Width Ratio	1.7	1.9	1.8	2.1	0.2	3																																						
Additional Reach Parameters																																											
Rosgen Classification	B5																																										
*Channel Thalweg Length (ft)	1,510																																										
Sinuosity (ft)	1.10																																										
Water Surface Slope (Channel) (ft/ft)	0.011																																										
Bankfull Slope (ft/ft)	0.012																																										
Ri% / Ru% / P% / G% / S%	44%	15%	29%	12%	0%																																						

* Channel Thalweg Length (ft): Based on actual thalweg calculations from the as-built survey, accounts for breaks in conservation easement and utility right-of-ways.

- Information Unavailable

N/A - Information does not apply.

Ri = Riffle / Ru = Run / P = Pool / G = Glide / S = Step

Table 11b Cont'd. Monitoring Data - Stream Reach Data Summary
Fletcher Mitigation Site - Weston Creek Reach 1A (1,982 feet *)

Parameter	Baseline						+Pre-MY - 1						MY - 1						MY - 2						MY - 3						MY - 4						MY - 5						MY - 6					
Dimension & Substrate - Riffle	**Min**	**Mean**	**Med**	**Max**	**SD**	**n**	**Min**	**Mean**	**Med**	**Max**	**SD**	**n**	**Min**	**Mean**	**Med**	**Max**	**SD**	**n**	**Min**	**Mean**	**Med**	**Max**	**SD**	**n**	**Min**	**Mean**	**Med**	**Max**	**SD**	**n**	**Min**	**Mean**	**Med**	**Max**	**SD**	**n**	**Min**	**Mean**	**Med**	**Max**	**SD**	**n**	**Min**	**Mean**	**Med**	**Max**	**SD**	**n**
Bankfull Width (ft)	9.1	9.8	9.8	10.4	0.9	2	-	-	-	-	-	-	10.2	16.8	16.8	23.5	9.4	2																												
Floodprone Width (ft)	50.0	50.0	50.0	50.0	0.0	2	-	-	-	-	-	-	50.0	50.0	50.0	50.0	0.0	2																												
Bankfull Mean Depth (ft)	0.6	0.6	0.6	0.6	0.0	2	-	-	-	-	-	-	0.3	0.4	0.4	0.5	0.2	2																												
Bankfull Max Depth (ft)	0.9	1.0	1.0	1.1	0.1	2	-	-	-	-	-	-	0.9	1.1	1.1	1.2	0.2	2																												
Bankfull Cross-Sectional Area (ft^2)	5.4	5.8	5.8	6.2	0.6	2	-	-	-	-	-	-	5.4	5.8	5.8	6.2	0.6	2																												
Width/Depth Ratio	15.5	16.4	16.4	17.4	1.3	2	-	-	-	-	-	-	21.7	55.5	55.5	89.4	47.9	2																												
Entrenchment Ratio	4.8	5.1	5.1	5.5	0.5	2	-	-	-	-	-	-	2.1	3.5	3.5	4.9	2.0	2																												
Bank Height Ratio	1.0	1.0	1.0	1.0	0.0	2	-	-	-	-	-	-	1.0	1.1	1.1	1.2	0.2	2																												
Profile																																															
Riffle Length (ft)	4.3	13.3	11.9	38.6	7.8	55																																									
Riffle Slope (ft/ft)	0.000	0.004	0.002	0.017	0.004	55																																									
Pool Length (ft)	5.7	13.1	12.8	26.1	4.3	54																																									
Pool Max Depth (ft)	1.1	1.7	1.7	2.6	0.4	54																																									
Pool Spacing (ft)	8.9	35.7	34.4	72.9	12.0	53																																									
Pattern																																															
Channel Belt Width (ft)	24.8	27.0	27.2	29.0	2.1	3																																									
Radius of Curvature (ft)	11.0	14.3	14.6	17.4	3.2	3																																									
Rc: Bankfull Width (ft/ft)	1.3	1.7	1.7	2.0	0.4	3																																									
Meander Wavelength (ft)	24.5	26.9	27.2	29.0	2.3	3																																									
Meander Width Ratio	2.9	3.1	3.2	3.4	0.2	3																																									
Additional Reach Parameters																																															
Rosgen Classification	C5																																														
*Channel Thalweg Length (ft)	1,982																																														
Sinuosity (ft)	1.24																																														
Water Surface Slope (Channel) (ft/ft)	0.005																																														
Bankfull Slope (ft/ft)	0.005																																														
Ri% / Ru% / P% / G% / S%	38%	15%	36%	11%	0%																																									

* Channel Thalweg Length (ft): Based on actual thalweg calculations from the as-built survey, accounts for breaks in conservation easement and utility right-of-ways.

- Information Unavailable

+ Data not collected due to adaptive management on Weston Reach 1A and 1B

N/A - Information does not apply.

Ri = Riffle / Ru = Run / P = Pool / G = Glide / S = Step

Table 11b Cont'd. Monitoring Data - Stream Reach Data Summary
Fletcher Mitigation Site - Weston Creek Reach 1B (825 feet *)

Parameter	Baseline						+Pre-MY - 1						MY - 1						MY - 2						MY - 3						MY - 4						MY - 5						MY - 6					
Dimension & Substrate - Riffle	**Min**	**Mean**	**Med**	**Max**	**SD**	**n**	**Min**	**Mean**	**Med**	**Max**	**SD**	**n**	**Min**	**Mean**	**Med**	**Max**	**SD**	**n**	**Min**	**Mean**	**Med**	**Max**	**SD**	**n**	**Min**	**Mean**	**Med**	**Max**	**SD**	**n**	**Min**	**Mean**	**Med**	**Max**	**SD**	**n**	**Min**	**Mean**	**Med**	**Max**	**SD**	**n**	**Min**	**Mean**	**Med**	**Max**	**SD**	**n**
Bankfull Width (ft)	-	9.7	-	-	-	1	-	-	-	-	-	-	-	13.4	-	-	-	1																												
Floodprone Width (ft)	-	40.0	-	-	-	1	-	-	-	-	-	-	-	60.0	-	-	-	1																												
Bankfull Mean Depth (ft)	-	0.5	-	-	-	1	-	-	-	-	-	-	-	0.9	-	-	-	1																												
Bankfull Max Depth (ft)	-	0.7	-	-	-	1	-	-	-	-	-	-	-	2.5	-	-	-	1																												
Bankfull Cross-Sectional Area (ft^2)	-	4.7	-	-	-	1	-	-	-	-	-	-	-	12.7	-	-	-	1																												
Width/Depth Ratio	-	20.4	-	-	-	1	-	-	-	-	-	-	-	14.2	-	-	-	1																												
Entrenchment Ratio	-	4.1	-	-	-	1	-	-	-	-	-	-	-	0.0	-	-	-	1																												
Bank Height Ratio	-	1.0	-	-	-	1	-	-	-	-	-	-	-	1.0	-	-	-	1																												
Profile																																															
Riffle Length (ft)	4.5	12.3	12.1	29.1	5.9	21																																									
Riffle Slope (ft/ft)	0.000	0.007	0.002	0.031	0.008	21																																									
Pool Length (ft)	5.6	14.8	14.0	26.8	6.9	21																																									
Pool Max Depth (ft)	1.4	2.0	2.0	2.7	0.3	21																																									
Pool Spacing (ft)	19.7	35.2	34.8	68.4	12.1	20																																									
Pattern																																															
Channel Belt Width (ft)	27.3	28.4	28.1	29.9	1.3	3																																									
Radius of Curvature (ft)	15.8	19.5	18.2	24.5	4.5	3																																									
Rc: Bankfull Width (ft/ft)	1.7	2.1	1.9	2.6	0.5	3																																									
Meander Wavelength (ft)	27.3	28.4	28.1	29.9	1.3	3																																									
Meander Width Ratio	2.9	3.0	3.0	3.2	0.1	3																																									
Additional Reach Parameters																																															
Rosgen Classification	C5																																														
*Channel Thalweg Length (ft)	825																																														
Sinuosity (ft)	1.17																																														
Water Surface Slope (Channel) (ft/ft)	0.0024																																														
Bankfull Slope (ft/ft)	0.0026																																														
Ri% / Ru% / P% / G% / S%	35%	9%	42%	14%	0%																																									

* Channel Thalweg Length (ft): Based on actual thalweg calculations from the as-built survey, accounts for breaks in conservation easement and utility right-of-ways.

- Information Unavailable

+ Data not collected due to adaptive management on Weston Reach 1A and 1B

N/A - Information does not apply.

Ri = Riffle / Ru = Run / P = Pool / G = Glide / S = Step

Table 11b Cont'd. Monitoring Data - Stream Reach Data Summary
Fletcher Mitigation Site - Raccoon Branch Reach 1D (440 feet *)

Parameter	Baseline						Pre-MY - 1						MY - 1						MY - 2						MY - 3						MY - 4						MY - 5						MY - 6					
Dimension & Substrate - Riffle	**Min**	**Mean**	**Med**	**Max**	**SD**	**n**	**Min**	**Mean**	**Med**	**Max**	**SD**	**n**	**Min**	**Mean**	**Med**	**Max**	**SD**	**n**	**Min**	**Mean**	**Med**	**Max**	**SD**	**n**	**Min**	**Mean**	**Med**	**Max**	**SD**	**n**	**Min**	**Mean**	**Med**	**Max**	**SD**	**n**	**Min**	**Mean**	**Med**	**Max**	**SD**	**n**	**Min**	**Mean**	**Med**	**Max**	**SD**	**n**
Bankfull Width (ft)	-	6.9	-	-	-	1	-	7.8	-	-	-	1	-	6.9	-	-	-	1																														
Floodprone Width (ft)	-	20.0	-	-	-	1	-	20.0	-	-	-	1	-	20.0	-	-	-	1																														
Bankfull Mean Depth (ft)	-	0.5	-	-	-	1	-	0.4	-	-	-	1	-	0.5	-	-	-	1																														
Bankfull Max Depth (ft)	-	1.3	-	-	-	1	-	0.9	-	-	-	1	-	0.9	-	-	-	1																														
Bankfull Cross-Sectional Area (ft^2)	-	3.4	-	-	-	1	-	3.4	-	-	-	1	-	3.4	-	-	-	1																														
Width/Depth Ratio	-	13.8	-	-	-	1	-	18.1	-	-	-	1	-	14.2	-	-	-	1																														
Entrenchment Ratio	-	2.9	-	-	-	1	-	2.6	-	-	-	1	-	2.9	-	-	-	1																														
Bank Height Ratio	-	1.0	-	-	-	1	-	0.6	-	-	-	1	-	0.8	-	-	-	1																														
Profile																																																
Riffle Length (ft)	1.5	4.5	4.2	7.9	1.7	38																																										
Riffle Slope (ft/ft)	0.003	0.033	0.030	0.085	0.021	38																																										
Pool Length (ft)	1.7	5.4	5.0	12.7	2.6	37																																										
Pool Max Depth (ft)	0.6	1.0	1.1	1.4	0.2	37																																										
Pool Spacing (ft)	4.1	12.1	11.2	28.8	5.5	35																																										
Pattern																																															
Channel Belt Width (ft)	6.7	7.5	7.0	8.7	1.1	3																																										
Radius of Curvature (ft)	7.9	10.1	8.5	13.9	3.3	3																																										
Rc: Bankfull Width (ft/ft)	1.2	1.6	1.3	2.2	0.6	3																																										
Meander Wavelength (ft)	6.7	7.5	7.0	8.7	1.1	3																																										
Meander Width Ratio	1.1	1.2	1.1	1.4	0.1	3																																										
Additional Reach Parameters																																															
Rosgen Classification	B4																																															
*Channel Thalweg Length (ft)	440																																															
Sinuosity (ft)	1.08																																															
Water Surface Slope (Channel) (ft/ft)	0.040																																															
Bankfull Slope (ft/ft)	0.041																																															
Ri% / Ru% / P% / G% / S%	39%	0%	46%	8%	6%																																										

* Channel Thalweg Length (ft): Based on actual thalweg calculations from the as-built survey, accounts for breaks in conservation easement and utility right-of-ways.

- Information Unavailable

N/A - Information does not apply.

Ri = Riffle / Ru = Run / P = Pool / G = Glide / S = Step

Table 11b Cont'd. Monitoring Data - Stream Reach Data Summary
Fletcher Mitigation Site - Coates Branch Reach 1B (606 feet *)

Parameter	Baseline						Pre-MY - 1						MY - 1						MY - 2						MY - 3						MY - 4						MY - 5						MY - 6					
Dimension & Substrate - Riffle	**Min**	**Mean**	**Med**	**Max**	**SD**	**n**	**Min**	**Mean**	**Med**	**Max**	**SD**	**n**	**Min**	**Mean**	**Med**	**Max**	**SD**	**n**	**Min**	**Mean**	**Med**	**Max**	**SD**	**n**	**Min**	**Mean**	**Med**	**Max**	**SD**	**n**	**Min**	**Mean**	**Med**	**Max**	**SD**	**n**	**Min**	**Mean**	**Med**	**Max**	**SD**	**n**	**Min**	**Mean**	**Med**	**Max**	**SD**	**n**
Bankfull Width (ft)	-	5.2	-	-	-	1	-	4.9	-	-	-	1	-	3.4	-	-	-	1																														
Floodprone Width (ft)	-	15.0	-	-	-	1	-	15.0	-	-	-	1	-	15.0	-	-	-	1																														
Bankfull Mean Depth (ft)	-	0.3	-	-	-	1	-	0.3	-	-	-	1	-	0.5	-	-	-	1																														
Bankfull Max Depth (ft)	-	0.7	-	-	-	1	-	0.5	-	-	-	1	-	1.0	-	-	-	1																														
Bankfull Cross-Sectional Area (ft^2)	-	1.6	-	-	-	1	-	1.6	-	-	-	1	-	1.6	-	-	-	1																														
Width/Depth Ratio	-	16.5	-	-	-	1	-	15.1	-	-	-	1	-	7.5	-	-	-	1																														
Entrenchment Ratio	-	2.9	-	-	-	1	-	3.1	-	-	-	1	-	4.4	-	-	-	1																														
Bank Height Ratio	-	1.0	-	-	-	1	-	1.3	-	-	-	1	-	1.1	-	-	-	1																														
Profile																																																
Riffle Length (ft)	3.0	6.5	6.3	14.0	2.1	52																																										
Riffle Slope (ft/ft)	0.000	0.020	0.016	0.072	0.016	52																																										
Pool Length (ft)	1.2	3.4	3.2	6.3	1.2	51																																										
Pool Max Depth (ft)	0.2	1.2	1.1	2.5	0.4	51																																										
Pool Spacing (ft)	5.8	11.7	12.0	18.7	2.5	50																																										
Pattern																																															
Channel Belt Width (ft)	9.7	10.6	10.5	11.5	0.9	3																																										
Radius of Curvature (ft)	9.0	11.0	12.0	12.1	1.8	3																																										
Rc: Bankfull Width (ft/ft)	1.5	1.9	2.1	2.1	0.3	3																																										
Meander Wavelength (ft)	9.7	10.6	10.5	11.5	0.9	3																																										
Meander Width Ratio	1.7	1.9	1.8	2.0	0.1	3																																										
Additional Reach Parameters																																															
Rosgen Classification	B4																																															
*Channel Thalweg Length (ft)	601																																															
Sinuosity (ft)	1.05																																															
Water Surface Slope (Channel) (ft/ft)	0.033																																															
Bankfull Slope (ft/ft)	0.033																																															
Ri% / Ru% / P% / G% / S%	56%	0%	28%	10%	6%																																										

* Channel Thalweg Length (ft): Based on actual thalweg calculations from the as-built survey, accounts for breaks in conservation easement and utility right-of-ways.

- Information Unavailable

N/A - Information does not apply.

Ri = Riffle / Ru = Run / P = Pool / G = Glide / S = Step

Table 11b Cont'd. Monitoring Data - Stream Reach Data Summary
Fletcher Mitigation Site - Coates Branch Reach 1C (708 feet *)

Parameter	Baseline						Pre-MY - 1						MY - 1						MY - 2						MY - 3						MY - 4						MY - 5						MY - 6					
Dimension & Substrate - Riffle	**Min**	**Mean**	**Med**	**Max**	**SD**	**n**	**Min**	**Mean**	**Med**	**Max**	**SD**	**n**	**Min**	**Mean**	**Med**	**Max**	**SD**	**n**	**Min**	**Mean**	**Med**	**Max**	**SD**	**n**	**Min**	**Mean**	**Med**	**Max**	**SD**	**n**	**Min**	**Mean**	**Med**	**Max**	**SD**	**n**	**Min**	**Mean**	**Med**	**Max**	**SD**	**n**	**Min**	**Mean**	**Med**	**Max**	**SD**	**n**
Bankfull Width (ft)	-	5.4	-	-	-	1	-	5.5	-	-	-	1	-	5.8	-	-	-	1																														
Floodprone Width (ft)	-	20.0	-	-	-	1	-	20.0	-	-	-	1	-	20.0	-	-	-	1																														
Bankfull Mean Depth (ft)	-	0.4	-	-	-	1	-	0.4	-	-	-	1	-	0.4	-	-	-	1																														
Bankfull Max Depth (ft)	-	0.8	-	-	-	1	-	0.6	-	-	-	1	-	0.6	-	-	-	1																														
Bankfull Cross-Sectional Area (ft^2)	-	2.2	-	-	-	1	-	2.2	-	-	-	1	-	2.2	-	-	-	1																														
Width/Depth Ratio	-	13.5	-	-	-	1	-	14.0	-	-	-	1	-	15.4	-	-	-	1																														
Entrenchment Ratio	-	3.7	-	-	-	1	-	3.6	-	-	-	1	-	3.4	-	-	-	1																														
Bank Height Ratio	-	1.0	-	-	-	1	-	0.9	-	-	-	1	-	0.8	-	-	-	1																														
Profile																																																
Riffle Length (ft)	3.8	7.4	7.7	10.1	1.6	48																																										
Riffle Slope (ft/ft)	0.000	0.010	0.010	0.033	0.007	48																																										
Pool Length (ft)	1.2	4.6	4.2	7.3	1.4	48																																										
Pool Max Depth (ft)	0.6	1.0	1.0	1.4	0.2	49																																										
Pool Spacing (ft)	6.4	14.3	14.6	19.6	2.6	48																																										
Pattern																																															
Channel Belt Width (ft)	10.9	11.7	11.6	12.5	0.8	3																																										
Radius of Curvature (ft)	7.0	8.8	7.2	12.1	2.9	3																																										
Rc: Bankfull Width (ft/ft)	1.2	1.5	1.2	2.1	0.5	3																																										
Meander Wavelength (ft)	10.9	12.1	11.6	13.7	1.5	3																																										
Meander Width Ratio	1.8	2.0	1.9	2.1	0.1	3																																										
Additional Reach Parameters																																															
Rosgen Classification	B4																																															
*Channel Thalweg Length (ft)	708																																															
Sinuosity (ft)	1.06																																															
Water Surface Slope (Channel) (ft/ft)	0.013																																															
Bankfull Slope (ft/ft)	0.013																																															
Ri% / Ru% / P% / G% / S%	52%	0%	32%	11%	5%																																										

* Channel Thalweg Length (ft): Based on actual thalweg calculations from the as-built survey, accounts for breaks in conservation easement and utility right-of-ways.

- Information Unavailable

N/A - Information does not apply.

Ri = Riffle / Ru = Run / P = Pool / G = Glide / S = Step

Table 11b Cont'd. Monitoring Data - Stream Reach Data Summary
Fletcher Mitigation Site - Coates Branch Reach 1D (325 feet *)

Parameter	Baseline						Pre-MY - 1						MY - 1						MY - 2						MY - 3						MY - 4						MY - 5						MY - 6					
Dimension & Substrate - Riffle	**Min**	**Mean**	**Med**	**Max**	**SD**	**n**	**Min**	**Mean**	**Med**	**Max**	**SD**	**n**	**Min**	**Mean**	**Med**	**Max**	**SD**	**n**	**Min**	**Mean**	**Med**	**Max**	**SD**	**n**	**Min**	**Mean**	**Med**	**Max**	**SD**	**n**	**Min**	**Mean**	**Med**	**Max**	**SD**	**n**	**Min**	**Mean**	**Med**	**Max**	**SD**	**n**	**Min**	**Mean**	**Med**	**Max**	**SD**	**n**
Bankfull Width (ft)	-	6.1	-	-	-	1	-	7.4	-	-	-	1	-	7.5	-	-	-	1																														
Floodprone Width (ft)	-	25.0	-	-	-	1	-	25.0	-	-	-	1	-	25.0	-	-	-	1																														
Bankfull Mean Depth (ft)	-	0.5	-	-	-	1	-	0.4	-	-	-	1	-	0.4	-	-	-	1																														
Bankfull Max Depth (ft)	-	1.0	-	-	-	1	-	0.9	-	-	-	1	-	0.9	-	-	-	1																														
Bankfull Cross-Sectional Area (ft^2)	-	3.3	-	-	-	1	-	3.3	-	-	-	1	-	3.3	-	-	-	1																														
Width/Depth Ratio	-	11.4	-	-	-	1	-	16.5	-	-	-	1	-	17.2	-	-	-	1																														
Entrenchment Ratio	-	4.1	-	-	-	1	-	3.4	-	-	-	1	-	3.3	-	-	-	1																														
Bank Height Ratio	-	1.0	-	-	-	1	-	1.0	-	-	-	1	-	0.9	-	-	-	1																														
Profile																																																
Riffle Length (ft)	4.1	7.2	7.3	11.9	1.8	22																																										
Riffle Slope (ft/ft)	0.000	0.008	0.006	0.021	0.006	22																																										
Pool Length (ft)	1.8	4.6	4.4	8.1	1.8	22																																										
Pool Max Depth (ft)	0.6	1.1	1.1	2.2	0.3	22																																										
Pool Spacing (ft)	8.0	13.9	14.0	19.1	3.2	21																																										
Pattern																																															
Channel Belt Width (ft)	11.5	12.7	12.8	13.8	1.2	3																																										
Radius of Curvature (ft)	4.7	7.0	7.2	9.2	2.3	3																																										
Rc: Bankfull Width (ft/ft)	0.7	1.0	1.0	1.3	0.3	3																																										
Meander Wavelength (ft)	11.5	12.5	12.1	13.8	1.2	3																																										
Meander Width Ratio	1.7	1.8	1.9	2.0	0.1	3																																										
Additional Reach Parameters																																															
Rosgen Classification	B4																																															
*Channel Thalweg Length (ft)	325																																															
Sinuosity (ft)	1.05																																															
Water Surface Slope (Channel) (ft/ft)	0.013																																															
Bankfull Slope (ft/ft)	0.014																																															
Ri% / Ru% / P% / G% / S%	52%	0%	33%	10%	5%																																										

* Channel Thalweg Length (ft): Based on actual thalweg calculations from the as-built survey, accounts for breaks in conservation easement and utility right-of-ways.

- Information Unavailable

N/A - Information does not apply.

Ri = Riffle / Ru = Run / P = Pool / G = Glide / S = Step

Appendix E
Hydrologic Data

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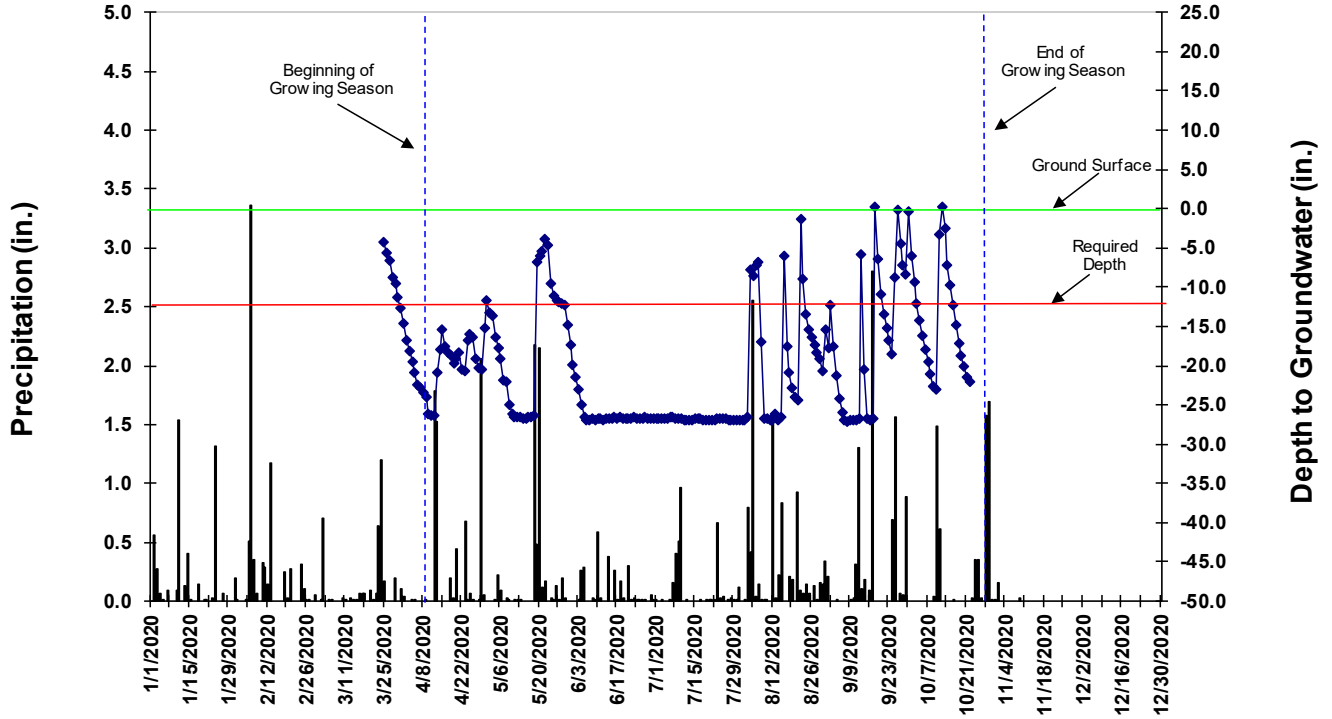
Gauge ID: **MW1**

Total Number of Consecutive Days Water Table within 12 inches of Soil Surface: **9**

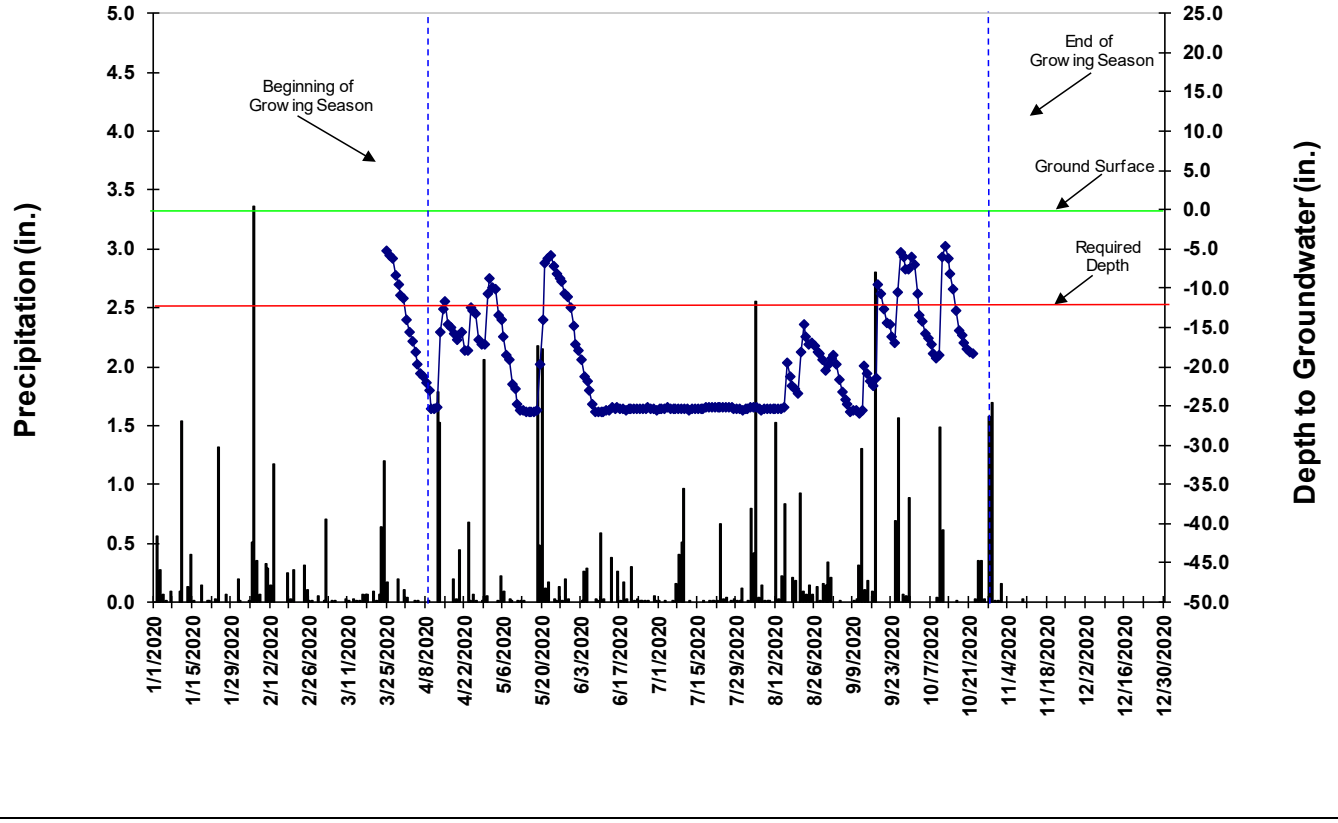
Percentage of Growing Season Water Table within 12 inches of Soil Surface: **4.5%**



Gauge ID: **MW2**

Total Number of Consecutive Days Water Table within 12 inches of Soil Surface: **9**

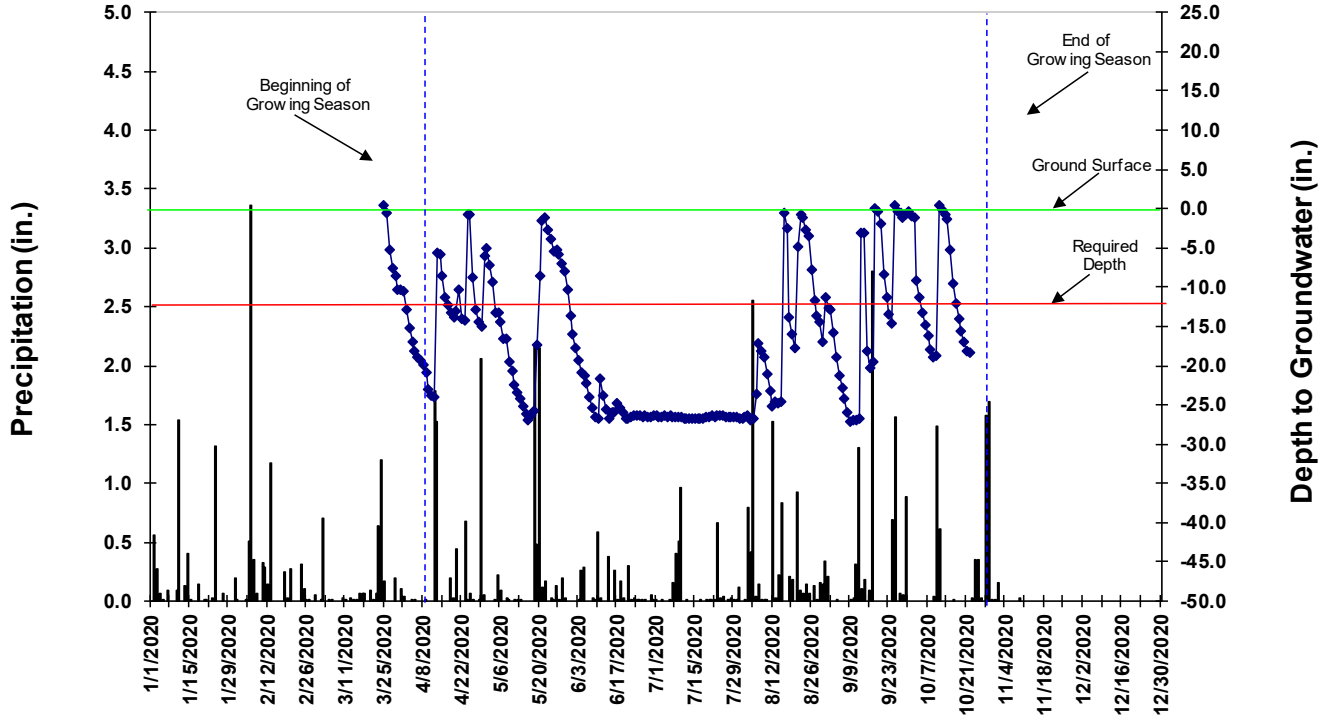
Percentage of Growing Season Water Table within 12 inches of Soil Surface: **4%**



Gauge ID: **MW3**

Total Number of Consecutive Days Water Table within 12 inches of Soil Surface: **11**

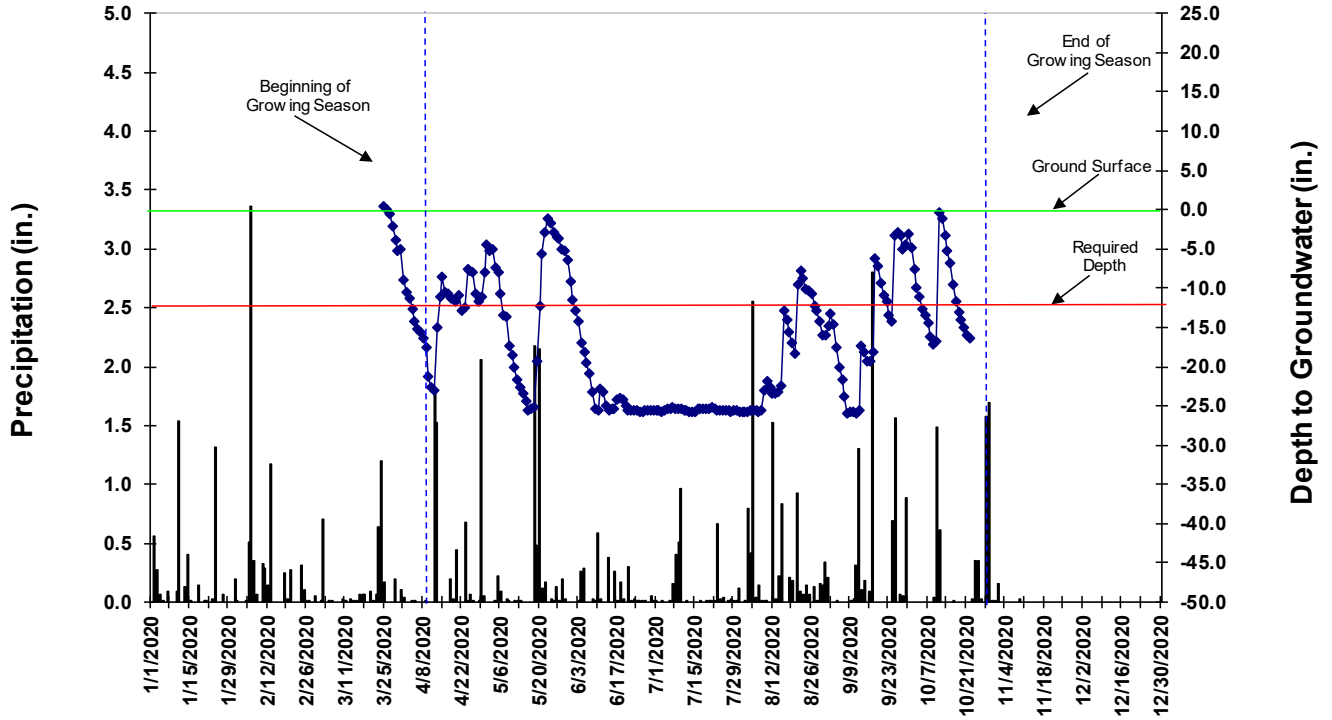
Percentage of Growing Season Water Table within 12 inches of Soil Surface: **5%**



Gauge ID: **MW4**

Total Number of Consecutive Days Water Table within 12 inches of Soil Surface: **13**

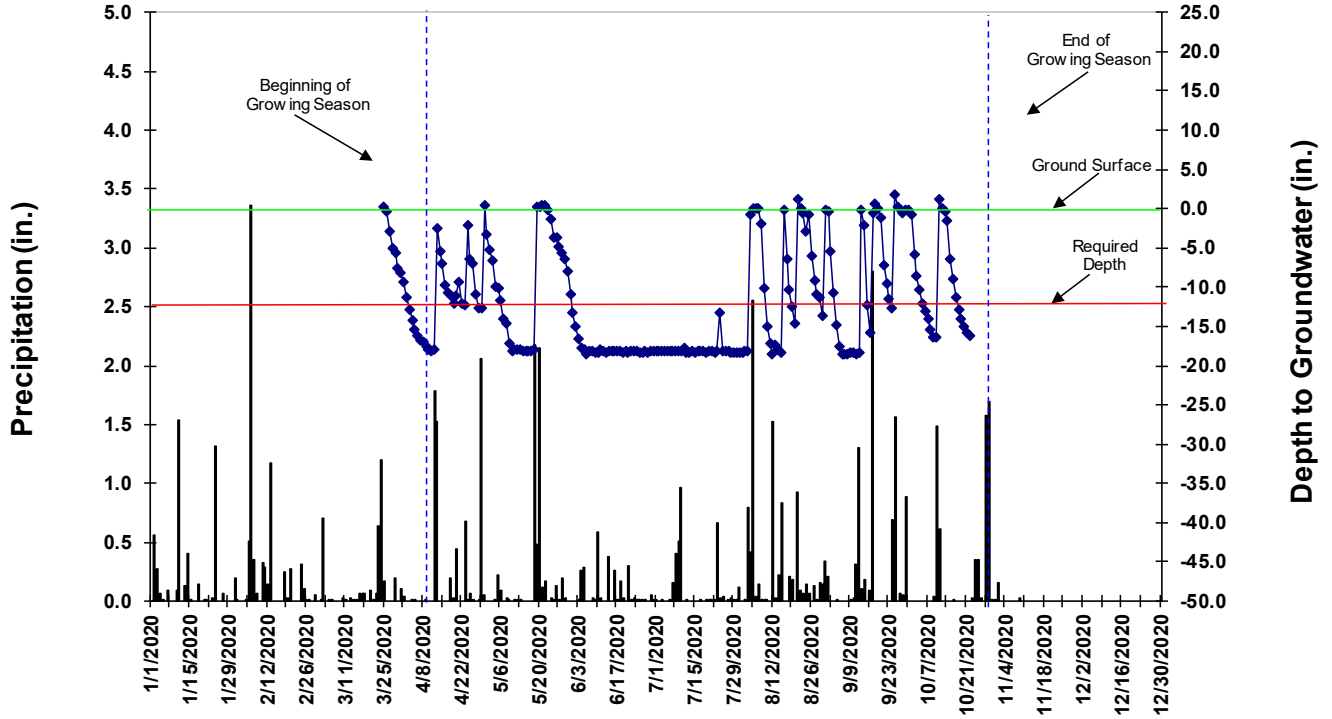
Percentage of Growing Season Water Table within 12 inches of Soil Surface: **6%**



Gauge ID: **MW5**

Total Number of Consecutive Days Water Table within 12 inches of Soil Surface: **13**

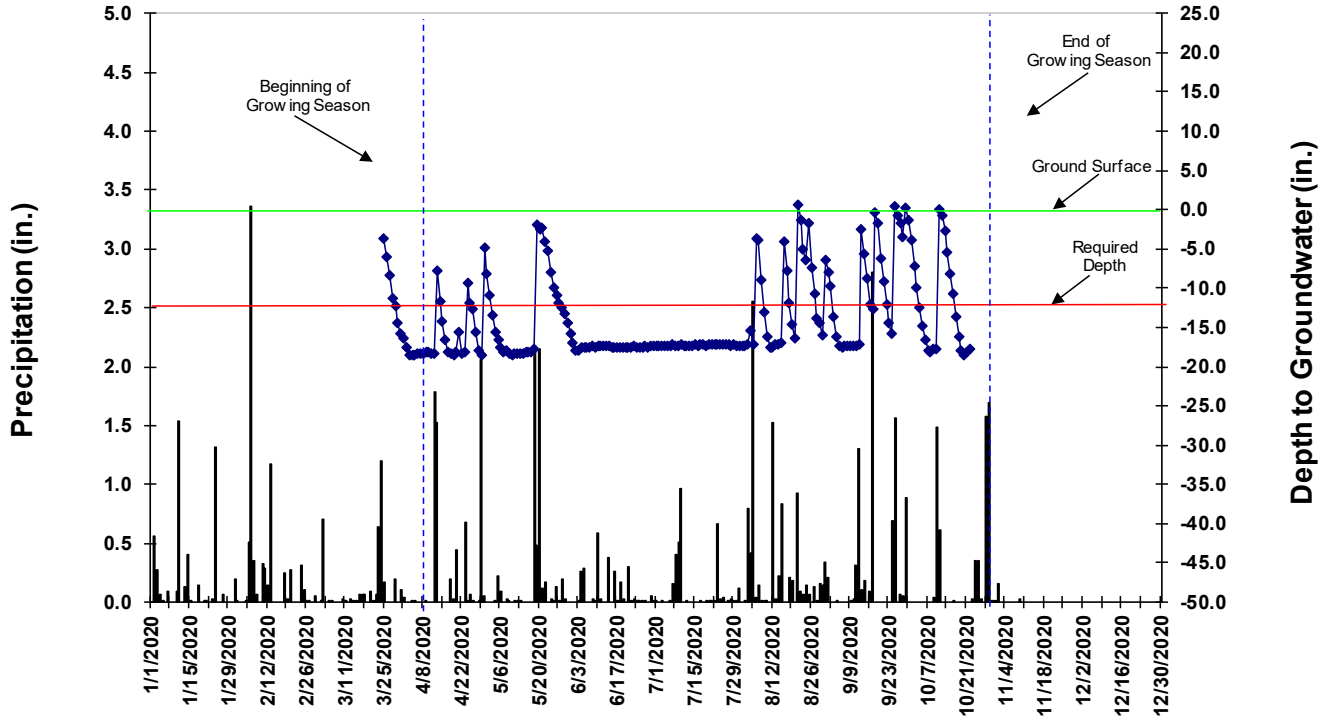
Percentage of Growing Season Water Table within 12 inches of Soil Surface: **6%**



Gauge ID: **MW6**

Total Number of Consecutive Days Water Table within 12 inches of Soil Surface: **9**

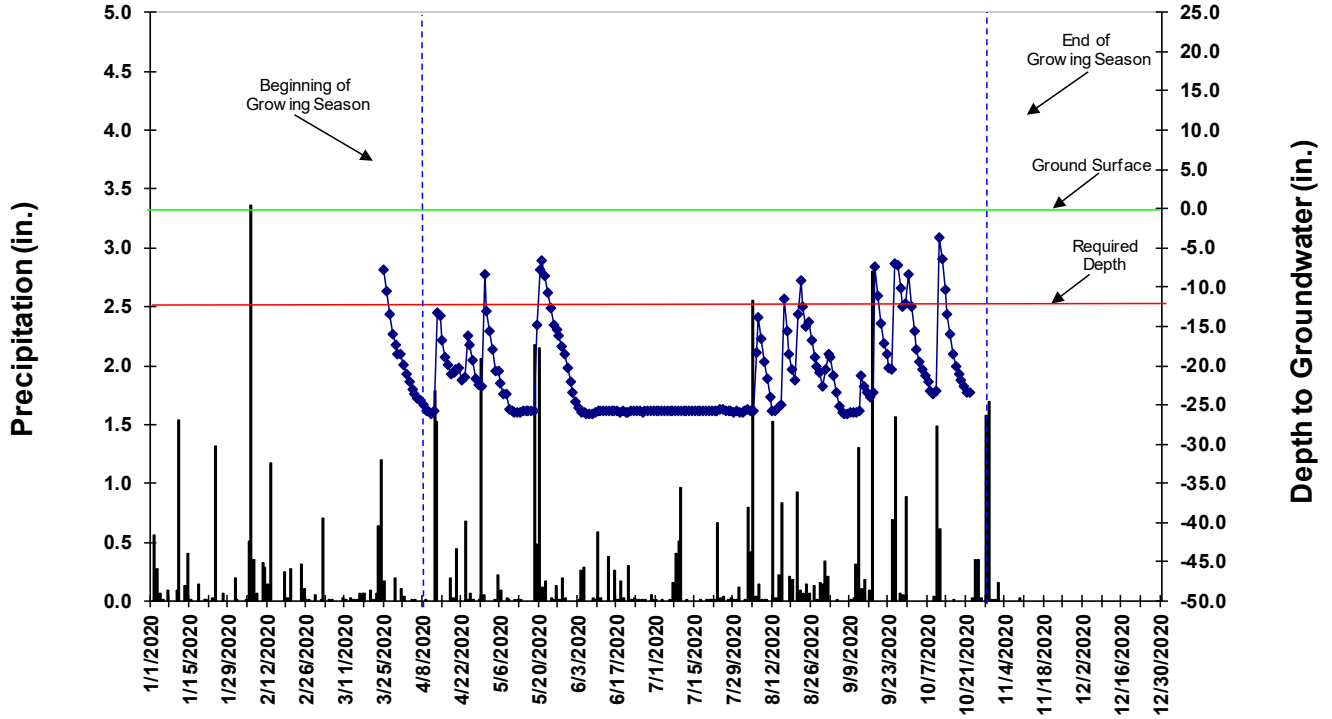
Percentage of Growing Season Water Table within 12 inches of Soil Surface: **4%**



Gauge ID: **MW7**

Total Number of Consecutive Days Water Table within 12 inches of Soil Surface: **4**

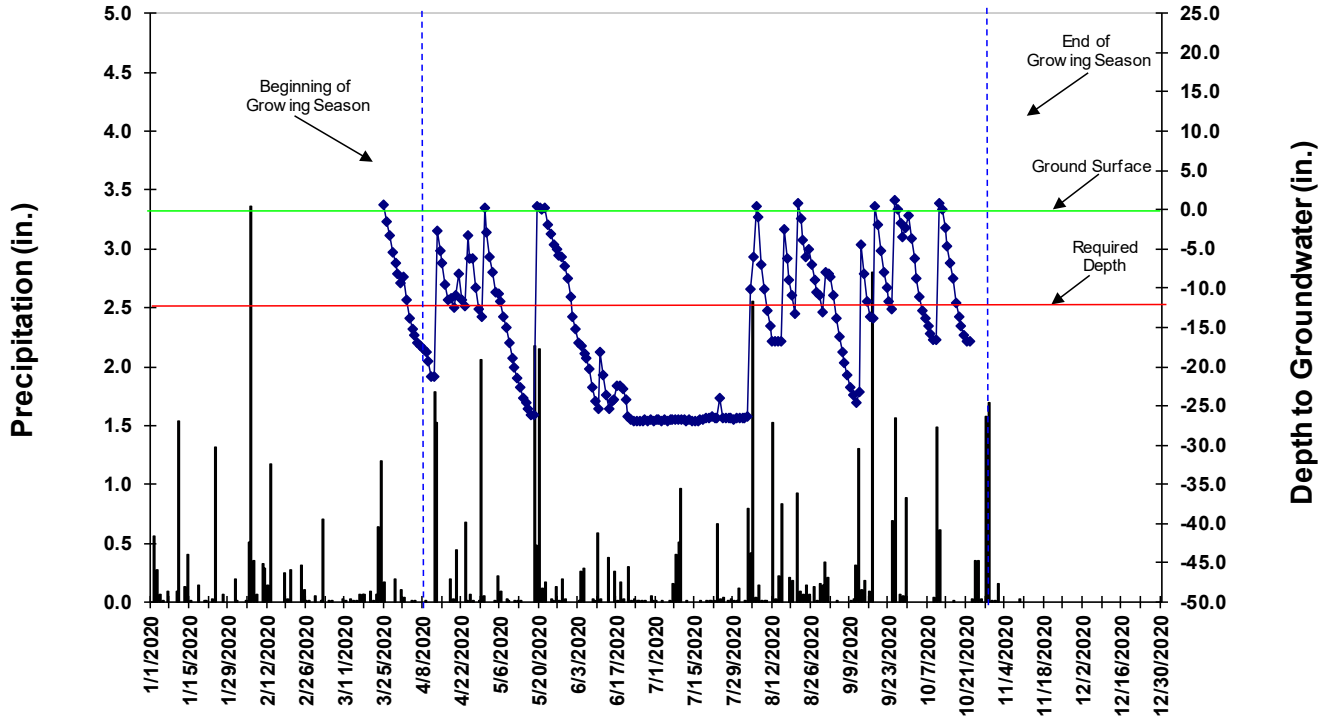
Percentage of Growing Season Water Table within 12 inches of Soil Surface: **2%**



Gauge ID: **MW8**

Total Number of Consecutive Days Water Table within 12 inches of Soil Surface: **13**

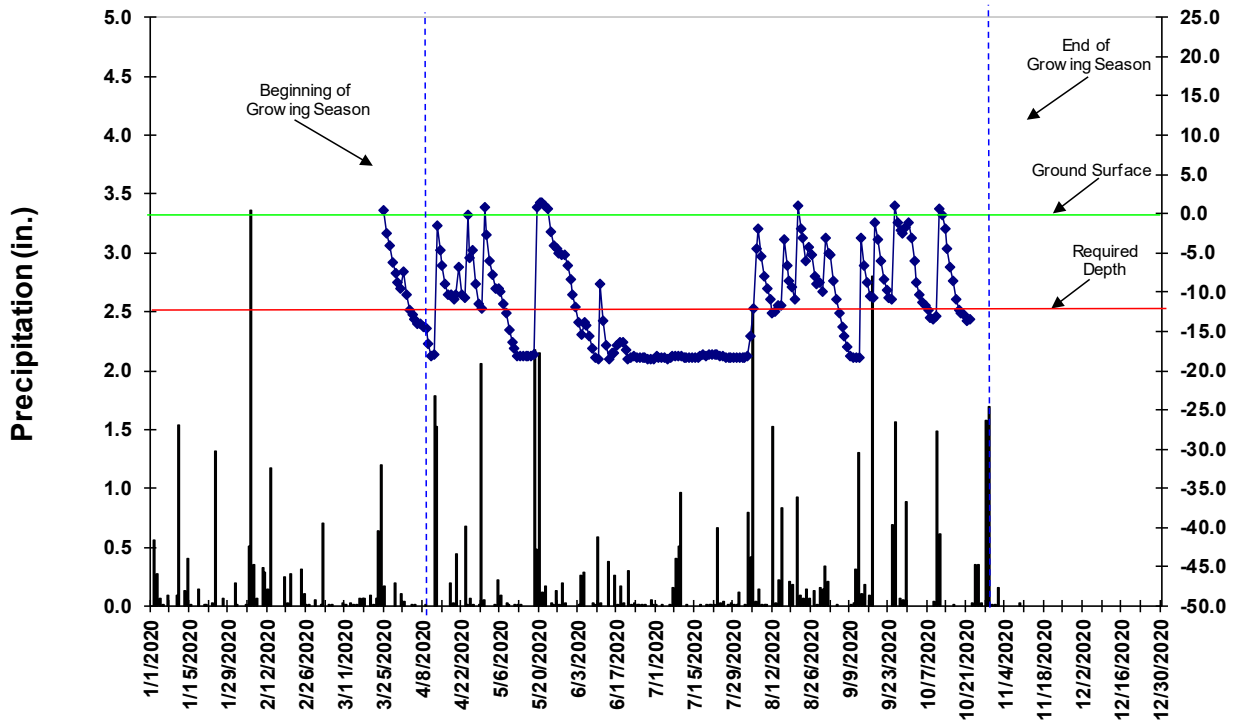
Percentage of Growing Season Water Table within 12 inches of Soil Surface: **6%**



Gauge ID: **MW9**

Total Number of Consecutive Days Water Table within 12 inches of Soil Surface: **24**

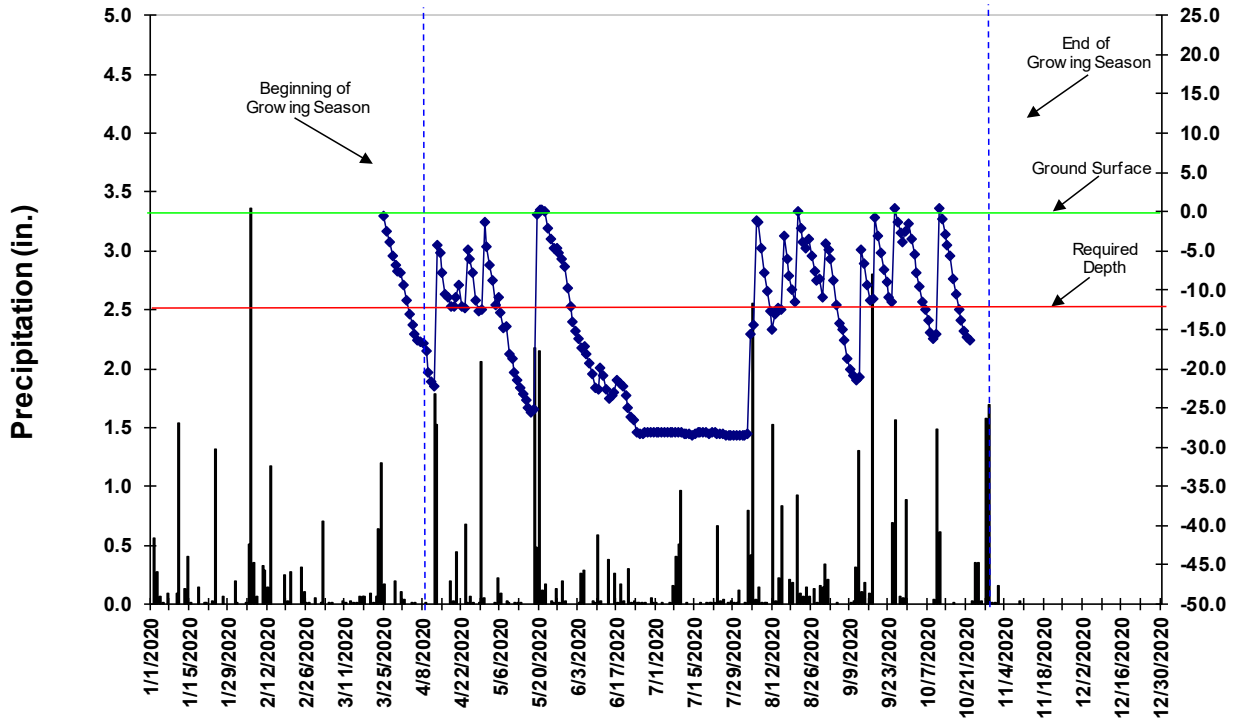
Percentage of Growing Season Water Table within 12 inches of Soil Surface: **12%**



Gauge ID: **MW10**

Total Number of Consecutive Days Water Table within 12 inches of Soil Surface: **23**

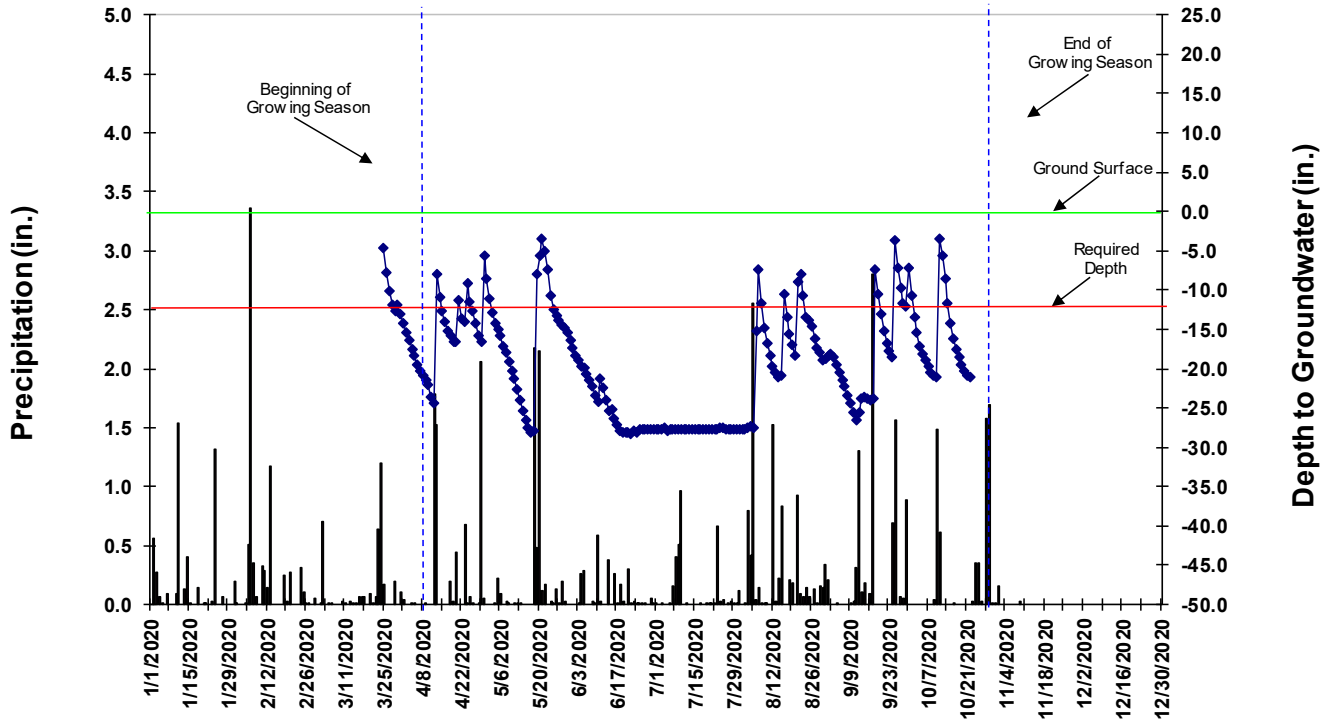
Percentage of Growing Season Water Table within 12 inches of Soil Surface: **11%**

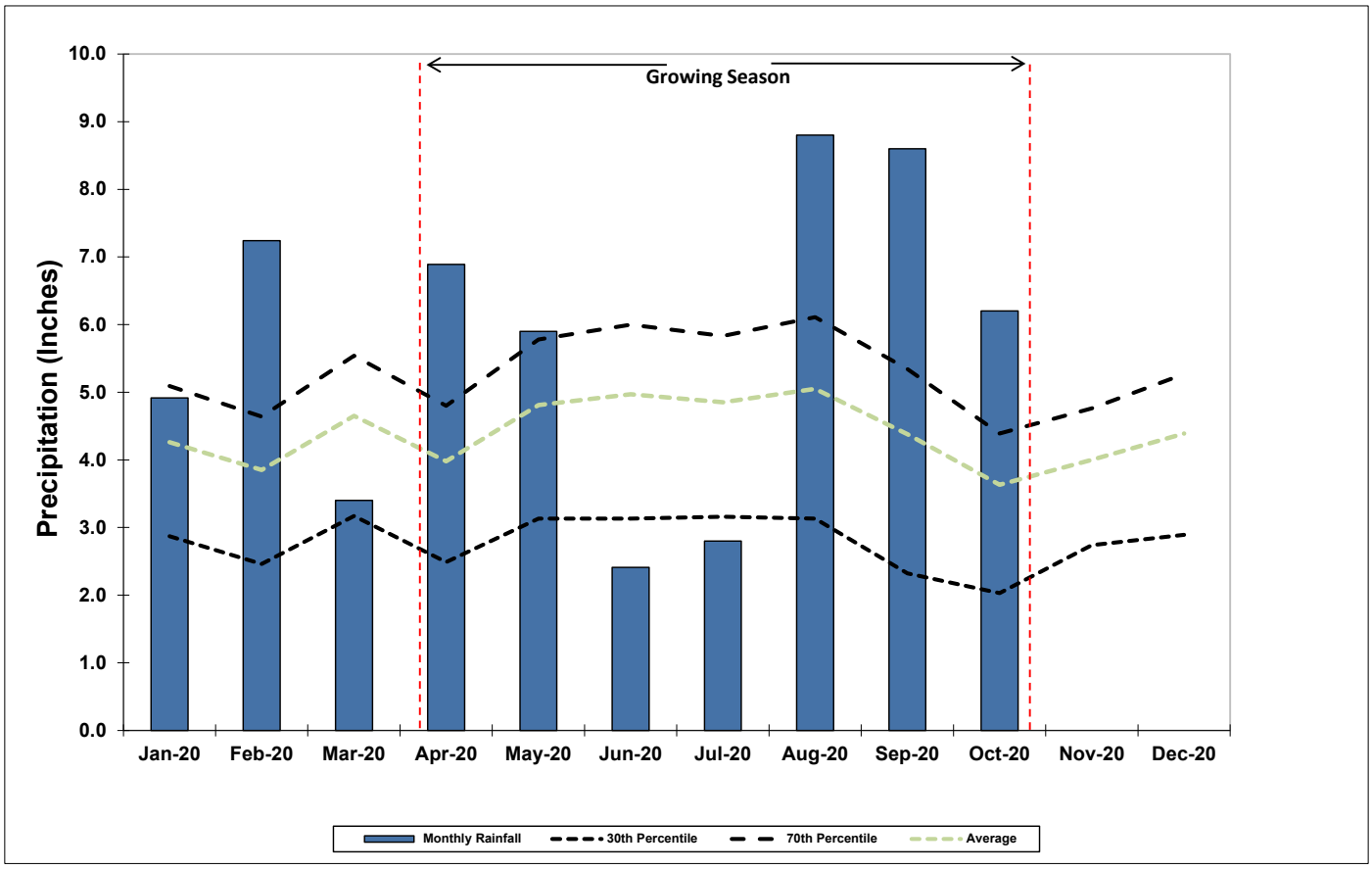


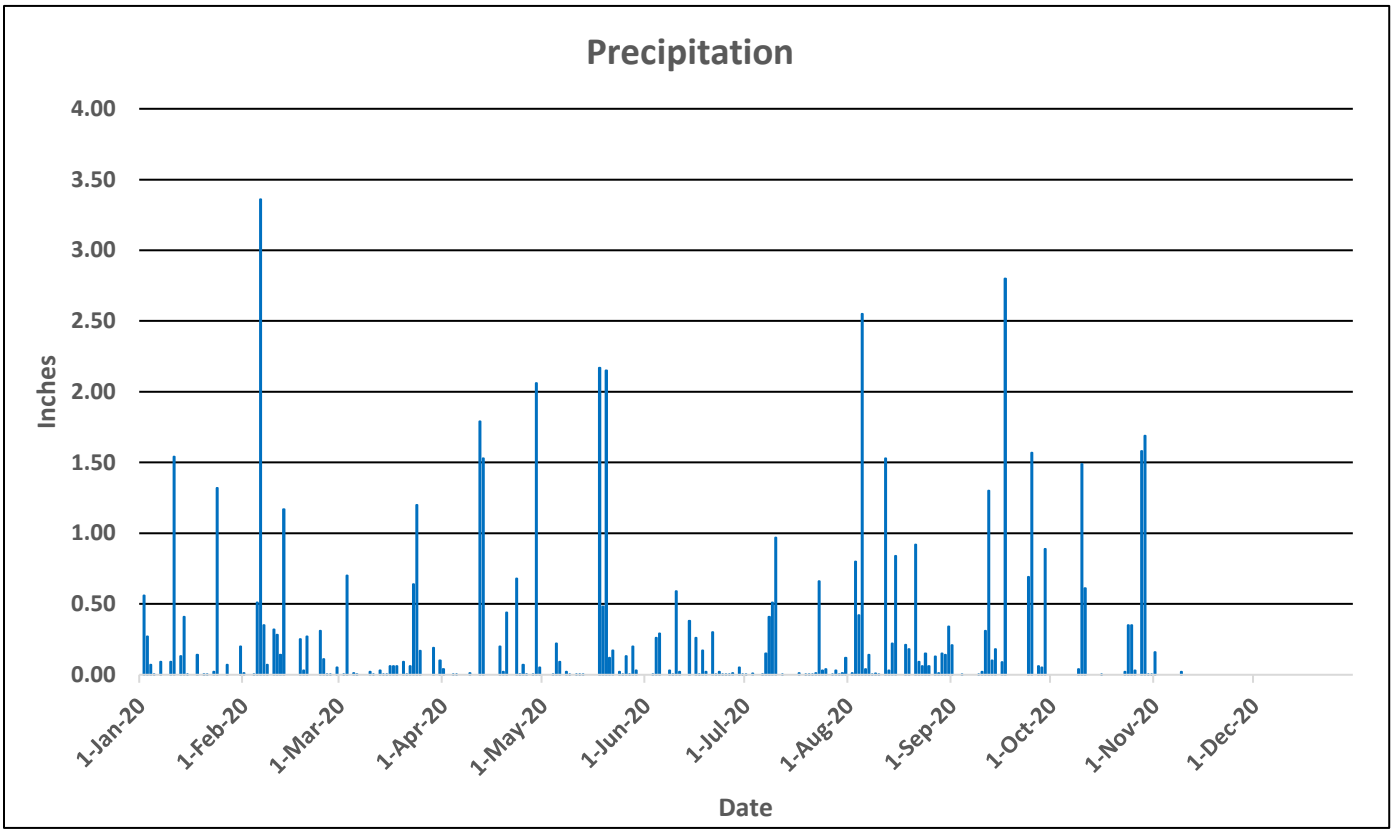
Gauge ID: **MW11**

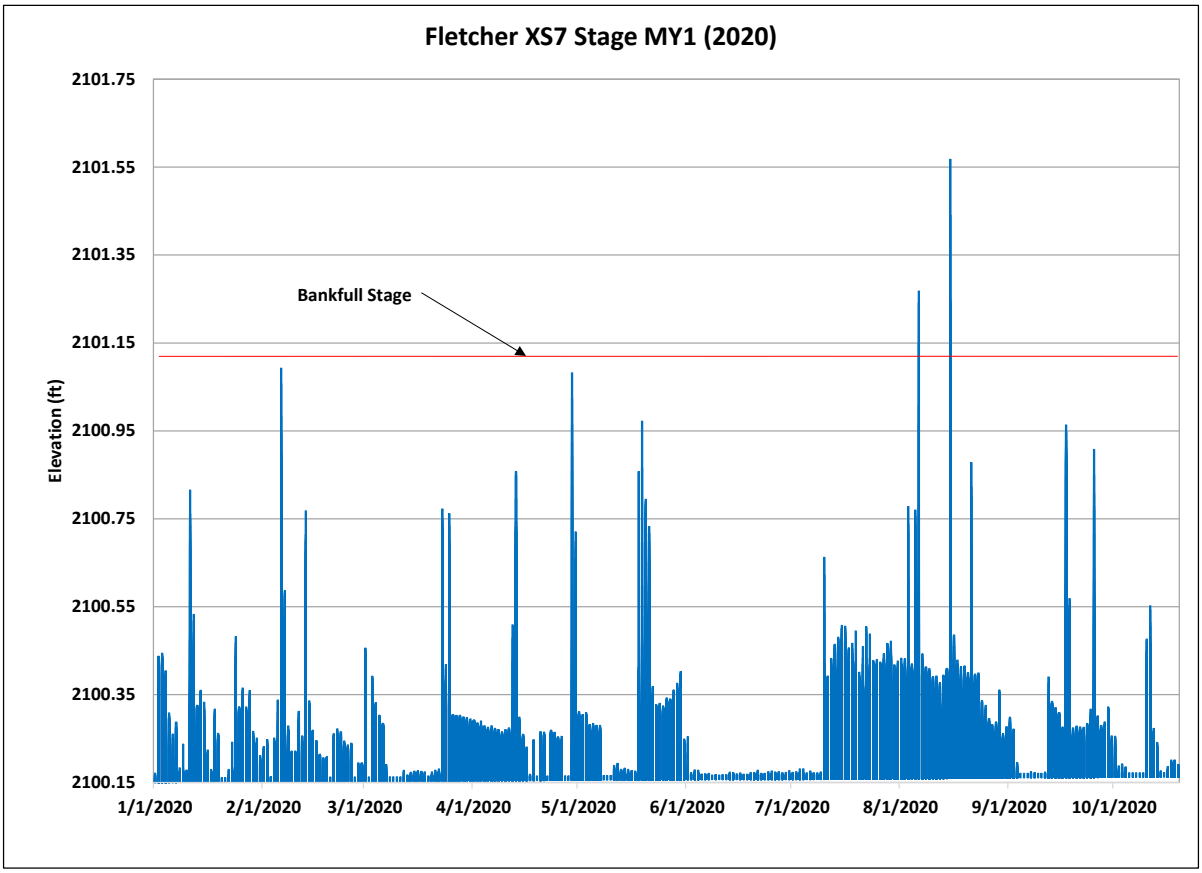
Total Number of Consecutive Days Water Table within 12 inches of Soil Surface: **6**

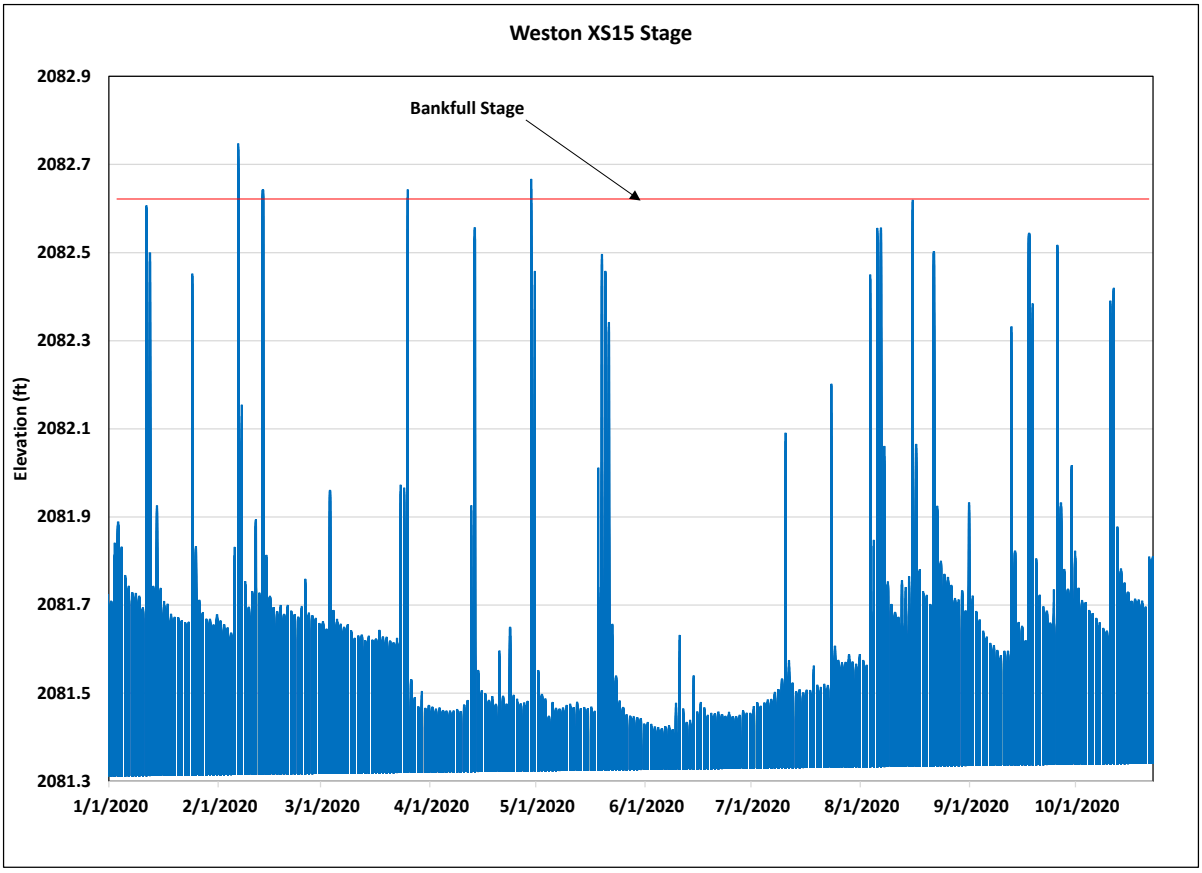
Percentage of Growing Season Water Table within 12 inches of Soil Surface: **3%**

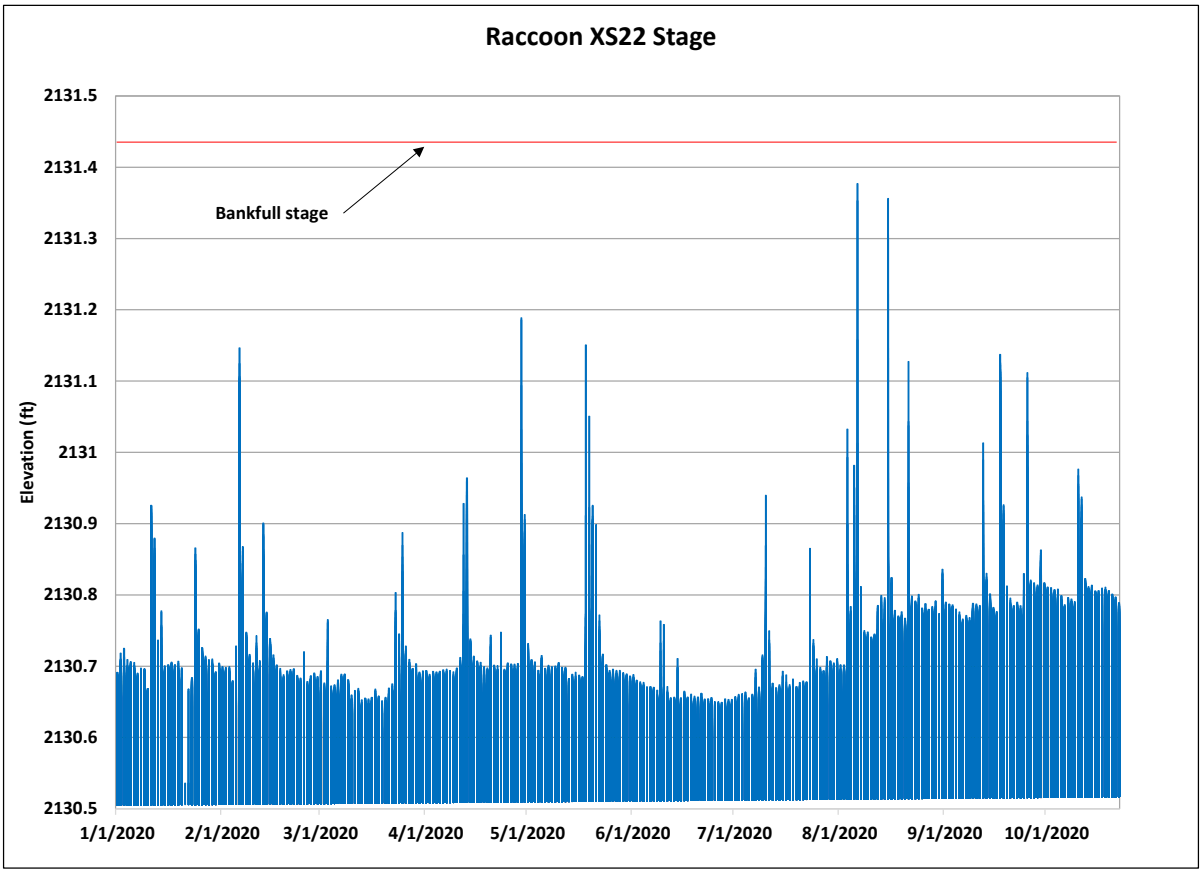



Growing Season
Precipitation (Inches)
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
Jan-20
Feb-20
Mar-20
Apr-20
May-20
Jun-20
Jul-20
Aug-20
Sep-20
Oct-20
Nov-20
Dec-20
Monthly Rainfall
30th Percentile
70th Percentile
Average


Precipitation
Inches
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
1-Jan-20
1-Feb-20
1-Mar-20
1-Apr-20
1-May-20
1-Jun-20
1-Jul-20
1-Aug-20
1-Sep-20
1-Oct-20
1-Nov-20
1-Dec-20
Date


Fletcher XS7 Stage MY1 (2020)
Elevation (ft)
2101.75
2101.55
2101.35
2101.15
2100.95
2100.75
2100.55
2100.35
2100.15
Bankfull Stage
1/1/2020
2/1/2020
3/1/2020
4/1/2020
5/1/2020
6/1/2020
7/1/2020
8/1/2020
9/1/2020
10/1/2020


Weston XS15 Stage
Elevation (ft)
2082.9
2082.7
2082.5
2082.3
2082.1
2081.9
2081.7
2081.5
2081.3
Bankfull Stage
1/1/2020
2/1/2020
3/1/2020
4/1/2020
5/1/2020
6/1/2020
7/1/2020
8/1/2020
9/1/2020
10/1/2020


Raccoon XS22 Stage
Bankfull stage
Elevation (ft)
2131.5
2131.4
2131.3
2131.2
2131.1
2131
2130.9
2130.8
2130.7
2130.6
2130.5
1/1/2020
2/1/2020
3/1/2020
4/1/2020
5/1/2020
6/1/2020
7/1/2020
8/1/2020
9/1/2020
10/1/2020

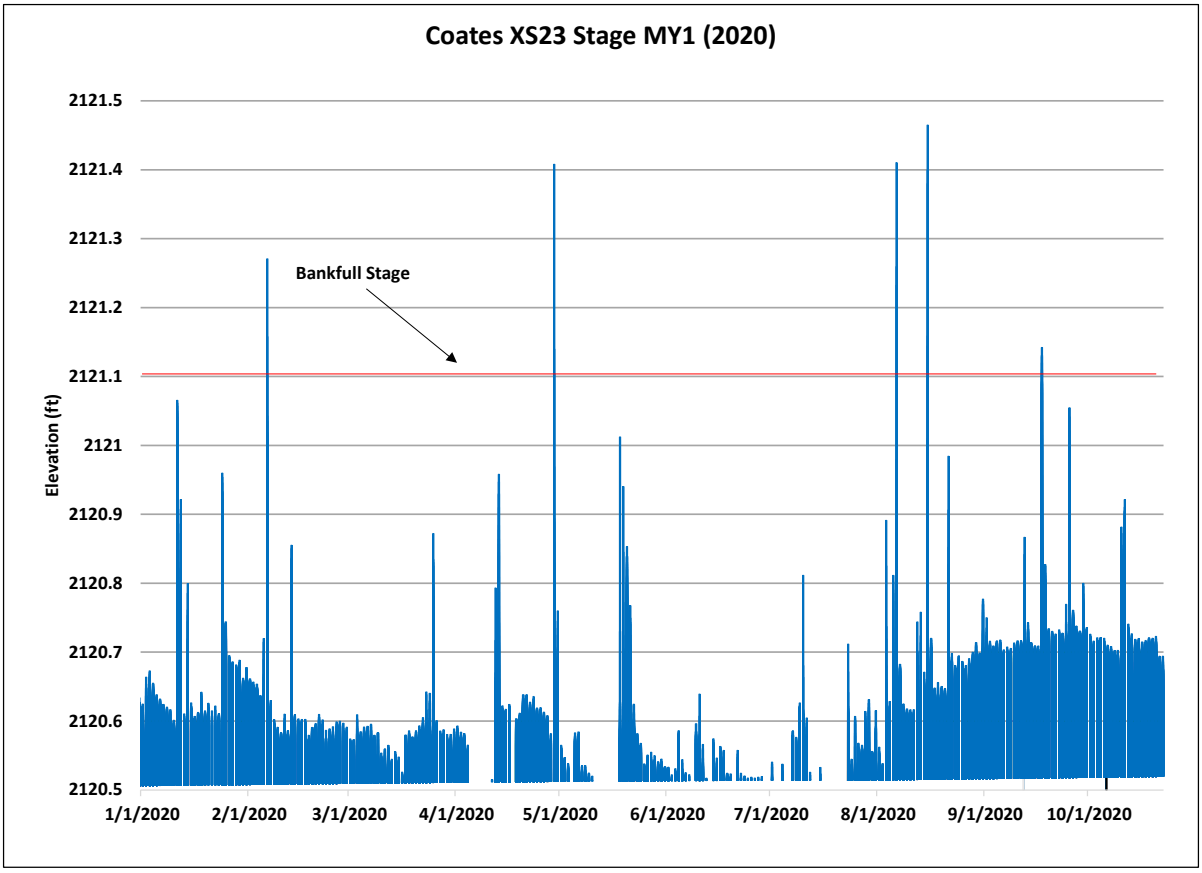

Coates XS23 Stage MY1 (2020)
Bankfull Stage
Elevation (ft)
2121.5
2121.4
2121.3
2121.2
2121.1
2121
2120.9
2120.8
2120.7
2120.6
2120.5
1/1/2020
2/1/2020
3/1/2020
4/1/2020
5/1/2020
6/1/2020
7/1/2020
8/1/2020
9/1/2020
10/1/2020

Table 10. Verification of Bankfull Events Fletcher Creek Mitigation Project				
Reach	**Date of Data Collection**	**Date of Occurrence**	**Method**	**Photo # (if available)**
Fletcher Reach 1	8/6/2020	8/6/2020	Stage Recorder	n/a
	8/15/2020	8/15/2020	Stage Recorder	n/a
Weston Creek Reach	No data collected during 2019 due to Adaptive Management			
	2/6/2020		Stage Recorder	n/a
Coates Branch	4/19/2019	4/19/2019	Stage Recorder	n/a
	2/6/2020	2/6/2020	Stage Recorder	n/a
	4/29/2020	4/29/2020	Stage Recorder	n/a
	8/6/2020	8/6/2020	Stage Recorder	n/a
	8/15/2020	8/15/2020	Stage Recorder	n/a

Appendix F
Other Data

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FLETCHER STREAM & WETLAND MITIGATION SITE #D100004 - HERBICIDE LOG, MY1 (2020)													
Date	**Start / End Time**	**Certified Applicators**	**Areas**	**Target Species**	**Type**	**Herbicide**	**Solution (%)**	**Volume Herbicide Concentrate Used* (oz)**	**Volume Mixture Used (gal)**	**Weather**	**Temp (°F)**	**Wind Speed (mph)**	**Notes**
6/25/2020	9:00-4:00pm	026-29539, 026-38261	Fletcher Creek/Coates Br merger; LDB Fletcher fenceline	ROMU, LISI, LOJA, ELUM	Foliar	Glyphosate 5.4 in water plus CideKick adjuvant, blue dye	4	180	40	overcast, dry	78	calm	Sprayed dense populations along the fenceline of middle Fletcher, RDB/LDB; outlying clumps of ROMU in the are between confluence, fringes; noted cattails need treatment in 2021;
7/14 - 7/16/20	10:00 - 4:00 (daily)		Coates Branch	LISI, ROMU, CEOR, LOJA	Cut stump	Triclopyr 4 (ester) in Alligare BasOil Blue (basal diluent, soybean derived)	30	150	3.5	sunny, mild	50		Cut stump treatment of large individual privet and incidental multiflora rose; heavy clearing of invasive vegetation;
7/28-7/29/20	10:00-4:00pm		Lower Fletcher Creek, Upper RDB Weston, upper areas near Jackson Rd.; Raccoon Branch (upper)	ROMU, LISI, LOJA, MISI, SONU	Foliar	Glyphosate 5.4 in water plus CideKick adjuvant, blue dye	4	148	30	sunny, cool	65	1-3 mph	Initial treatment of all species; grasses treated heavily, fringe between woodland edge and private trailer treated;
9/2/2020	1:00-4:00		Lower Weston Creek, RDB/LDB, fringe of CE area	PUMO	Foliar	Clopyralid 3 in water plus CideKick adjuvant, blue dye	0.07	4	4				Spray back creeping masses on LDB/RDB near confluence with Hooper's Creek; populatrions existing well outside of CE area; continued mgmt expected;
10/22/2020	2:00-4:00		Lower Weston Creek, RDB/LDB, fringe of CE area	PUMO	Foliar	Clopyralid 3 in water plus CideKick adjuvant, blue dye	0.07	3	3				Respray earlier treated clumps; LDB is reduced, RDB stimulated and some sprouts found in upper bench, rooting in sand; gun range source population has been mechanically removed;

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