

ROY COOPER

Governor

ELIZABETH S. BISER

Secretary

MARC RECKTENWALD

Director



NORTH CAROLINA
Environmental Quality

August 23, 2022

Scott Frederick
Eco Terra
117 Centrewest Court
Cary, NC 27513

Subject: Task 5 Draft As-Built Baseline Monitoring Report Comments – Kingfield Buffer Mitigation Project (DMS #100176)
Neuse River 03020204; Jones County, NC
Contract No. 0103-01

Dear Mr. Frederick:

On July 21, 2022, DMS received the Draft as-built baseline monitoring report for the Kingfield Buffer Mitigation Project from Eco Terra. DMS has completed our review of the draft report and has the following comments:

1. On page 1 of Section 1.0 – Please change the sentence from “The project will be implemented along a Class C, Sw ...” to “The project has been implemented along a Class C, Sw...” in the middle of the first paragraph.
2. On Table 4 – Please include columns for planted and total stems.

Please make the requested revisions and provide one (1) pdf copy and one hard copy of the revised baseline monitoring report. If you have any questions, please contact me at any time. I can be reached at (919) 219-8476 or email me at lin.xu@ncdenr.gov.

Sincerely,

Lin Xu

Lin Xu
Project Manager
NCDEQ Division of Mitigation Services

Attachment

cc: file



North Carolina Department of Environmental Quality | Division of Mitigation Services
217 West Jones Street | 1652 Mail Service Center | Raleigh, North Carolina 27699-1652
919.707.8976

Baseline Monitoring Report

KINGFIELD BUFFER MITIGATION SITE

Jones County, NC

NCDEQ Contract No. 0103-01

DMS ID No. 100176

DWR Project No. 2021-0020v2

RFP No. 16-20200103

Prepared for:



Mitigation Services
ENVIRONMENTAL QUALITY

NC Department of Environmental Quality

Division of Mitigation Services

1652 Mail Service Center, Raleigh, NC 27699-1652

May 2022



BASELINE MONITORING REPORT
KINGFIELD BUFFER MITIGATION SITE

Jones County, NC
NCDEQ Contract No. 0103-01
DMS ID No. 100176

Neuse River Basin
HUC 03020204

Prepared For:



NC Department of Environmental Quality
Division of Mitigation Services
1652 Mail Service Center, Raleigh, NC 27699-1652

Prepared By:



1328 DeKalb Ave NE
Atlanta, GA 30307
404.840.2697

This Baseline Monitoring Plan has been written in conformance with the requirements of the following:

- 15A NCAC 02B.0295 Mitigation Program Requirements for Protection and Maintenance of Riparian Buffers
- 15A NCAC 02B.0703 Nutrient Offset Credit Trading

These documents govern DMS operations and procedures for the delivery of compensatory mitigation.

Contributing Staff

Michael Beinenson, Eco Terra
Principal-in-Charge

Scott Frederick, Eco Terra/SWE
Project Manager

Norton Webster, Eco Terra
Construction Oversight

Robert Bentley, Eco Terra
Quality Assurance

TABLE OF CONTENTS

1.0 Mitigation Project Summary 1
 1.1 Project Goals 1
 1.2 Existing Conditions and Parcel Viability 2
2.0 Determination of Credits 3
3.0 Baseline Summary 4
 3.1 Site Preparation 4
 3.2 Riparian Area Restoration Activities 4
4.0 Annual Monitoring and Performance Criteria 5
 4.1 Vegetation 5
 4.2 Photo Reference Stations 6
 4.3 Visual Assessments 6
 4.4 Annual Reporting Performance Criteria 6
 4.5 Maintenance and Contingency Plans 6
5.0 References 7

APPENDICES

Appendix 1 Tables and Figures

- Table 1: Project Planted Stems
- Table 2: Buffer Project Attributes
- Table 3: Buffer Project Components and Assets
- Figure 1: Vicinity Map
- Figure 2: Current Condition Plan View

Appendix 2 DWR Correspondence

- NCDWR On-Site Determination for Applicability to the Tar-Pamlico Buffer Rules (April 30, 2021)
- NCDWR Site Viability for Buffer Mitigation and Nutrient Offset (September 8, 2021)

Appendix 3 As-Built Survey

Appendix 4 Site Photographs

Appendix 5 Monitoring Plot Data

- Table 4: Monitoring Plot Planted and Total Stem Counts
Monitoring Plot Photographs



1.0 Mitigation Project Summary

The Kingfield Mitigation Site (Site, Project, or Project Site) is a buffer restoration project located approximately 3.4 miles northeast of Trenton in Jones County, NC (Appendix 1: Figure 1). The Project is located within the Neuse River basin, hydrologic unit code (HUC) 03020204010071. The Site comprises approximately 8.59 acres along an unnamed tributary (UT) to Musselshell Creek in the Crooked Creek targeted watershed (HUC 03020204010070) that drains into the Neuse River. Located within North Carolina Division of Mitigation Services (NCDMS) identified Hydrology and Water Quality Targeted Resource Areas (TRA), the Project has been implemented along a Class C, Sw, NSW, 303(d)-listed water impaired for aquatic life and ecological and biological integrity, according to the NC Department of Environmental Quality (NCDEQ) 303(d) Final List (2018). According to the as-built survey and DWR Buffer Mitigation Calculation Tool v3 (updated August 2020), the Site is expected to generate 315,430.000 buffer mitigation units (BMU) (Appendix 1: Table 3).

The Kingfield Mitigation Site will reduce future sediment and nutrient loading into Crooked Creek watershed and the Neuse River downstream. It will also improve terrestrial habitats along this stream by establishing a riparian corridor and allowing the land to convert to forested communities. The surrounding area is primarily agricultural fields. The project restored forested riparian buffers and adjacent riparian areas to a maximum of approximately 100 feet from the top of bank of the streams and removed rotating crops and fertilizer inputs. The restored Neuse riparian buffer and adjacent riparian areas will filter runoff from the surrounding farm fields and provide shading to improve stream temperatures and aquatic habitat. Invasive vegetation will be treated as needed within the project area to promote native vegetation.



UT1 at Project origin (September 2020)

1.1 Project Goals

The project goals and objectives described below are consistent with those of the NCDMS, and the specific goals outlined in the 2018 Neuse RBRP. As proposed, the Kingfield Buffer Mitigation Project will further help NCDMS to meet these goals. The major goals of the proposed buffer restoration project are to address agricultural runoff, including nutrients and sediment, protect the project site in perpetuity, and restore terrestrial habitat.

1.2 Existing Site Conditions

The Project Site is located within three parcels (~135 acres) currently used for row crop agriculture rotations and animal pasture. Adjacent land use is in pasture and row crop agriculture, and little vegetated buffer exists along the length of the UT to Musselshell Creek within the Project Site. Periodic erosion and sediment-laden runoff is entering the channels from these areas from actively eroding banks and crop rotations. Historical aerials denote that land uses at the Site have been in agriculture since at least 1956. Musselshell Creek and UT1 are mapped as stream channels on the Natural Resources Conservation Service's (NRCS) 1981 Jones County Soil Survey and the 2013 US Geological Survey's (USGS) Trenton Quadrangle; thus, both channels meet the definition of perennial per the NCDWR On-Site Determination for Applicability to the Neuse Buffer Rules Letter (Buffer Letter), and are deemed suitable for riparian buffer credits per the NCDWR Site Viability for Buffer Mitigation Letters (Appendix A).

2.0 Determination of Credits

Riparian buffer and adjacent riparian area restoration was accomplished in accordance with the Consolidated Buffer Mitigation Rule (15A NCAC 02B .0295) and the Nutrient Offset Credit Trading Rule (15A NCAC 02B .0703). All areas within 100+ linear feet of the top of bank of subject streams as measure from the top of bank landward were planted and devoted to generating riparian buffer mitigation credits. Areas designated for future nutrient offset conversion were planted similarly at a minimum 50 linear feet of the top of bank. Mitigation credits generated are listed in Table 3 of Appendix 1 and are based upon the as-built survey (Appendix 3) and DWR Buffer Mitigation Calculation Tool v3 (October 2020) (Appendix 1). Small differences in credits were determined during the as-built survey resulting in a slight increase in riparian buffer credits (Proposed=315,087 ft² vs. As-Built=315,430 ft²). This was due to initial mapping inconsistencies and a more accurate recorded as-built survey.

3.0 Baseline Summary

The Project construction was completed in February 2022, following mitigation plan approval. Eco Terra and supporting team members successfully planted and restored the proposed areas dedicated for riparian buffer and adjacent riparian area restoration with high quality native trees, shrubs, and herbaceous vegetation.



3.1 Site Preparation

All requests to prepare the site per the NCDWR Site Viability for Buffer Mitigation and Nutrient Offset Letter (September 8, 2021) were addressed. In addition, minor grading of spoil and rill erosion was completed along UT1 and stabilized with vegetation. Temporary and permanent seed mix was installed in any disturbed soil areas following disturbance and planted with native trees to secure sediment from entering surface waters. No invasive species were noted for herbicide treatment prior to construction. No disking or tilling was necessary to prepare the site or remove any historic plow pan in the soil. Minor disking was accomplished in some areas to incorporate temporary and permanent seed.

3.2 Riparian Area Restoration Activities

In accordance with the Mitigation Plan, restoration of the riparian areas involved planting bare root one- and two-year old trees in planting zones specific to soil and site conditions. A combination of machine and manual planting techniques were used depending on site conditions. Approximately 6,900 stems (803 stems/acre) were planted within the riparian areas designated for restoration. Differences in stem density and quantities occurred relative to the proposed planting list in the Mitigation Plan due to plant availability at the time. Planted tree species quantities and densities are found in Appendix 1: Table 1. Some minor bank stability work was accomplished as indicated in the Site Viability letter. All disturbed areas were protected with temporary and permanent seed.

In accordance with 15A NCAC 02B .0295, a sufficient density of stems was planted to achieve 260 trees/ac at the end of a minimum five-year project monitoring period whereby no one tree species planted was greater than 50% of the planted stems, and a minimum of four native tree species were planted. In total, 10 tree species were selected and planted specific to soil type, landscape position, soil wetness, community type, and reference forest stands nearby. Initial vegetation management post-planting included specific preemergent herbicide band application over planted trees for herbaceous competition that may compete with planted stems, conducted by a North Carolina licensed applicator. In accordance with the Mitigation Plan, temporary and permanent seed was planted within the easement to help establish herbaceous cover, protect the soil, and sequester nutrients in the newly established riparian buffer and other riparian areas. Temporary and permanent seed mixtures planted included Foxtail millet (*Setaria italica*) and Indiangrass (*Sorghastrum nutans*), switchgrass (*Panicum virgatum*), and big bluestem (*Andropogon gerardi*), respectively.

4.0 Annual Monitoring and Performance Criteria

The Mitigation Program Requirements for Protection and Maintenance of Riparian Buffers (15A NCAC 02B .0295) and RFP 16-20200208 set forth specific performance criteria for the successful development and close-out of the Kingfield Buffer Mitigation Site. Performance criteria monitoring includes standardized vegetation plot establishment and annual monitoring for planted stems including individual plot photo documentation, overall site photo documentation, biannual visual assessments for project status and easement integrity including herbaceous and/or invasive species competition, stem mortality, stand health, incidental damage from agricultural equipment, and stem loss or damage from natural causes such as fire, disease, or animal predation. Figure 3 (Appendix 1) illustrates the location of project easement, permanent vegetation plots/photo points, as well as overall site photo points.

4.1 Vegetation

Seven permanent vegetation plots were established according to the most recent Carolina Vegetation Survey (CVS) protocol within the restored buffer area. Representative vegetation plots were established at a minimum density of 2% of the planted area. Specifically, vegetation monitoring was obtained for all plots according to the CVS-EEP Level I Protocol for Recording Vegetation, v4.2 (2008). Monitoring year zero (MY0), or baseline, vegetation stem data is included in Appendix 5: Table 4.

4.2 Photo Reference Stations

Individual plot photos taken at the approximate southwest corner (origin) of each plot are included in this baseline monitoring report. Additional Site reference photos were taken at designated points along the conservation easement boundary providing an overall view of the project success (Appendix 1: Figure 3). All photo points were located by survey and georeferenced for map production to provide a consistent means for photo replication annually and in the event a plot or photo location must be reestablished during the monitoring period. Photo orientation (direction and bearing) were recorded as well as approximate vertical position for consistency in photo logging.

4.3 Visual Assessments

Additional observations were made of site conditions and vegetation conditions outside of monitoring plots. Overall, the implementation and planting of the project resulted in a full stocking of native tree species. A biannual visual assessment will be made in order to appropriately monitor changing site conditions and address any issues to ensure Site success and performance criteria are met in subsequent monitoring years. Any Site problems will be noted and discussed in the annual reports, addressed in a remedial action

plan if necessary, and monitored biannually to ensure performance criteria are met following any remedial action.

4.4 Annual Reporting Performance Criteria

All monitoring reports, including this baseline report, will be compiled and submitted to DMS annually in accordance with the Riparian Buffer and Nutrient Offset Buffer Baseline and Annual Monitoring Report Template Ver. 2.0 (May 2017). Annual monitoring will occur for a minum of five years or until performance criteria are met.

4.5 Maintenance and Contingency Plans

Any Site observations identified through vegetation plots or visual assessments, whereby the performance criteria is not met, will be noted and discussed in the annual reports and addressed with a contingency plan as necessary. DMS/NCDWR will be notified, and if necessary, collaborate with Eco Terra to develop a contingency plan with remedial action steps to correct the performance criteria deficiency. Any contingency plan and remedial actions will occur within an agreed timeframe and monitoring adjusted accordingly, if necessary. Site problem areas will be monitored biannually to ensure performance criteria are met following any remedial action.

5.0 References

- 15 NCAC 02B .0295 Mitigation Program Requirements for Protection and Maintenance of Riparian Buffers. 2015.
- 15A NCAC 02B .0703 Nutrient Offset Trading. 2020.
- N.C. Department of Water Quality Methodology for Determining Nutrient Reductions Associated with Riparian Buffer Establishment. 1998.
- N.C. Department of Water Quality Buffer Interpretation/Clarification #2008-019 Memorandum. August 19, 2008.
- N.C. Department of Environmental Quality. Division of Water Resources. Clarified Procedures for Calculating Buffer Mitigation Credits & Nutrient Offset Credits for Riparian Projects Regulated under 15A NCAC 02B .0295 and 15A NCAC 02B .0240. November 21, 2019.
- Lee, Michael T. Peet, Robert K., Steven D. Wentworth, Thomas R. 2008. CVS-EEP Protocol for Recording Vegetation Version 4.2. <http://cvs.bio.unc.edu/protocol/cvs-EEP-protocol-v4.2-lev1-2.pdf>
- North Carolina Department of Environmental Quality. Division of Mitigation Services (NCDMS). 2017. Riparian Buffer and Nutrient Offset Buffer Baseline and Annual Monitoring Report Template Version 2.0.
- North Carolina Department of Environmental Quality. Division of Mitigation Services (NCDMS). 2018. Tar-Pamlico River Basin Restoration Priorities.
- U.S. Department of Agriculture. Natural Resources Conservation Service. 2021. Web Soil Survey. <https://websoilsurvey.nrcs.usda.gov/app/>. Accessed April 2021.
- U.S. Geological Survey. 2013. Trenton. 1:24,000. North Carolina Topographic Quadrangle (7.5-minute series). Reston, VA: U.S. Department of the Interior, USGS, 2013.

APPENDIX 1

FIGURES AND TABLES

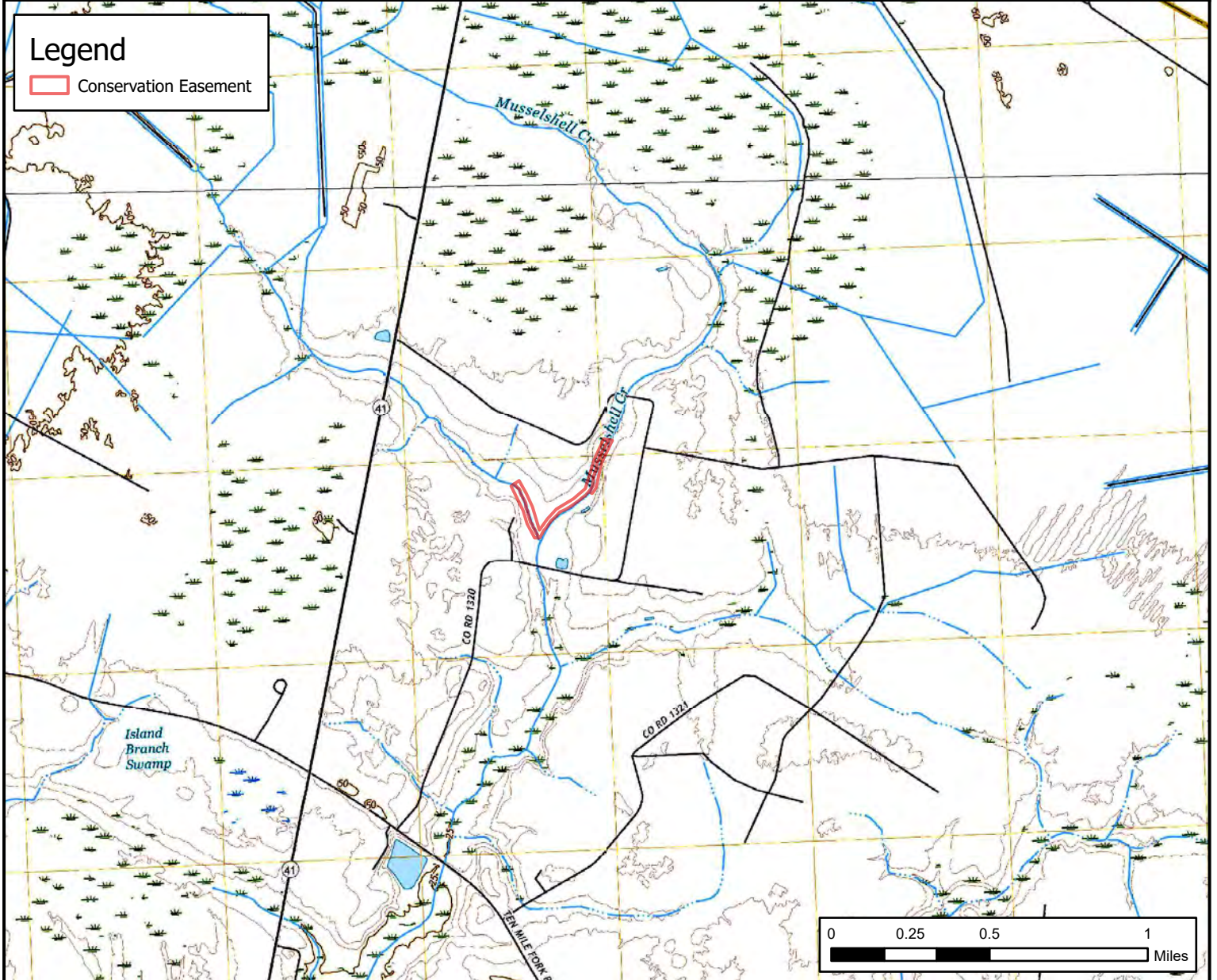
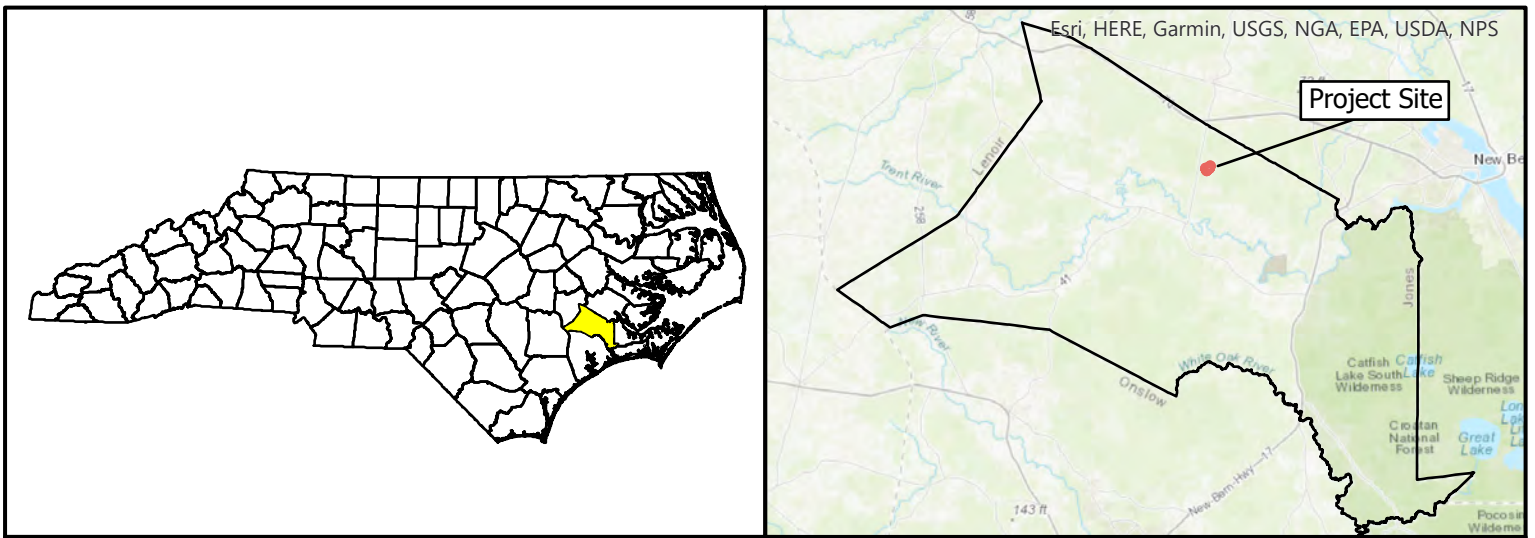
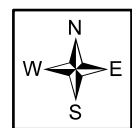
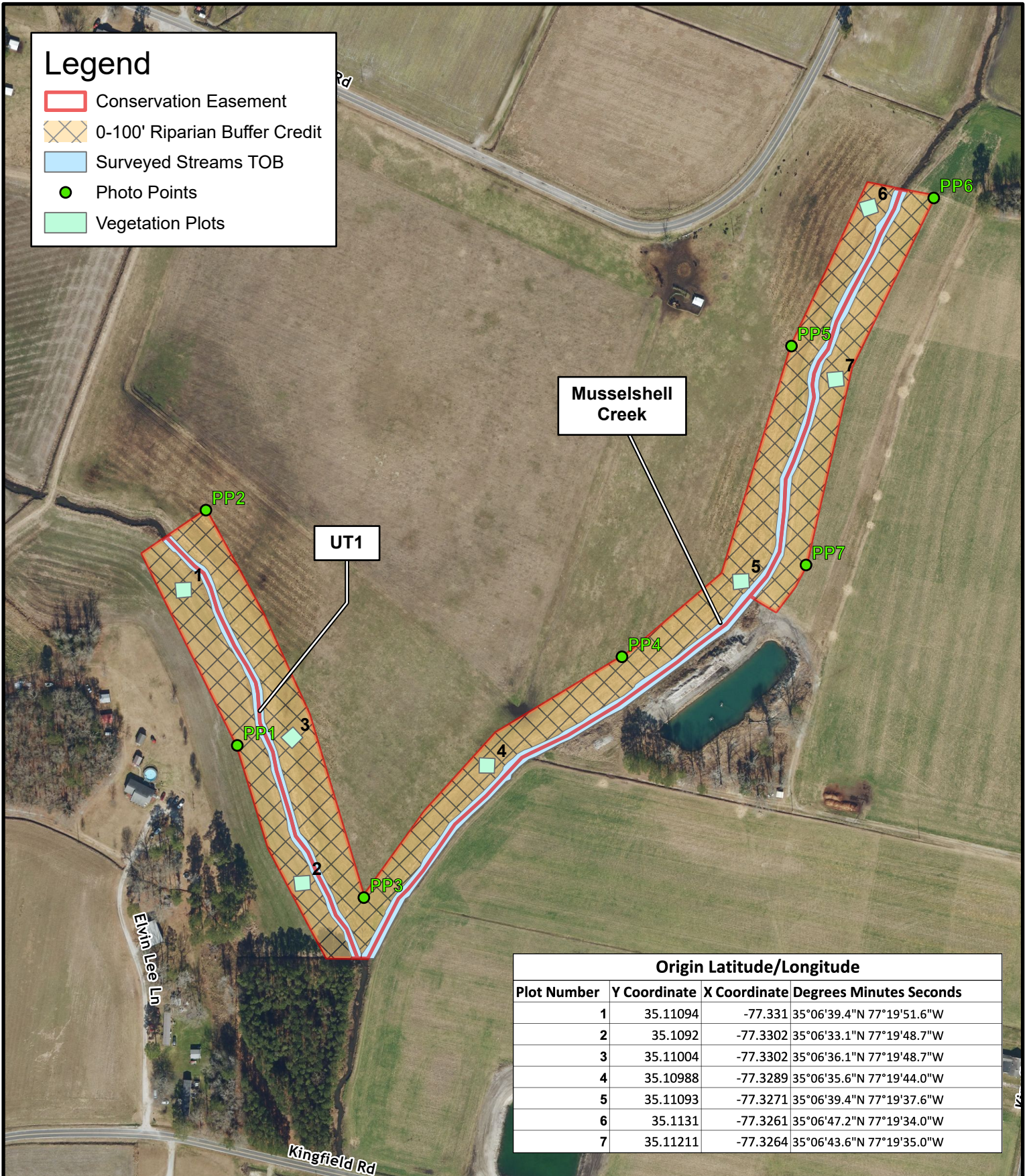


Figure 1: Vicinity Map
Kingfield Buffer Mitigation Site
Neuse 03020204
Jones County, North Carolina
April 2022





Legend

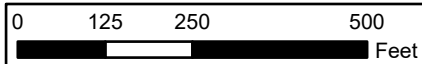
- Conservation Easement
- 0-100' Riparian Buffer Credit
- Surveyed Streams TOB
- Photo Points
- Vegetation Plots

**Musselshell
Creek**

UT1

Origin Latitude/Longitude			
Plot Number	Y Coordinate	X Coordinate	Degrees Minutes Seconds
1	35.11094	-77.331	35°06'39.4"N 77°19'51.6"W
2	35.1092	-77.3302	35°06'33.1"N 77°19'48.7"W
3	35.11004	-77.3302	35°06'36.1"N 77°19'48.7"W
4	35.10988	-77.3289	35°06'35.6"N 77°19'44.0"W
5	35.11093	-77.3271	35°06'39.4"N 77°19'37.6"W
6	35.1131	-77.3261	35°06'47.2"N 77°19'34.0"W
7	35.11211	-77.3264	35°06'43.6"N 77°19'35.0"W

Figure 2: Current Condition Plan View
Kingfield Buffer Mitigation Site
 Neuse 03020204
 Jones County, North Carolina
 April 2022



NC Onemap 2021 Aerial Imagery

Table 1: Project Planted Stems

Kingfield Buffer Mitigation Site

DMS ID No. 100176

DWR Project No. 2021-0020v2

Monitoring Year 0 – 2022

Scientific Name	Common Name	Quantity	% Overall
<i>Betula nigra</i>	River birch	1000	14%
<i>Diospyros virginiana</i>	Persimmon	500	7%
<i>Fraxinus pennsylvanica</i>	Green ash	200	3%
<i>Liriodendron tulipifera</i>	Yellow Poplar	200	3%
<i>Quercus michauxii</i>	Swamp chestnut oak	1000	14%
<i>Quercus nigra</i>	Water oak	1000	14%
<i>Quercus phellos</i>	Willow oak	1000	14%
<i>Quercus shumardii</i>	Shumard oak	500	7%
<i>Quercus lyrata</i>	Laurel oak	1000	14%
<i>Taxodium distichum</i>	Bald cypress	500	7%
		6900	100%

Table 2: Buffer Project Attributes

Kingfield Buffer Mitigation Site

DMS ID No. 100176

DWR Project No. 2021-0020v2

Monitoring Year 0 – 2022

Project Name	Kingfield Buffer Mitigation Site
Hydrologic Unit Code	03020204
River Basin	Neuse
Geographic Location (decimal degrees)	35.110000, -77.330000
Site Protection Instrument (BK, PG)	422/637-688
Types of Credits	Riparian Buffer (315,430.000)
Mitigation Plan Date	December 2021
Initial Planting Date	February 2022
Baseline Report Date	June 2022
MY1 Report Date	November 2022
MY2 Report Date	November 2023
MY3 Report Date	November 2024
MY4 Report Date	November 2025
MY5 Report Date	November 2026
Close out Report Date/Visit	May 2027

Table 3: Buffer Project Components and Assets

Kingfield Buffer Mitigation Site
 DMS ID No. 100176
 DWR Project No. 2021-0020v2
 Monitoring Year 0 – 2022

Table 3. Kingfield Buffer Mitigation Site, DMS No: 100176, Project Credits: 315,430.000 BMU																
Neuse 03020204				Project Area												
19.16394				N Credit Conversion Ratio (ft ² /pound)												
N/A				P Credit Conversion Ratio (ft ² /pound)												
Credit Type	Location	Subject? (enter NO if ephemeral or ditch ¹)	Feature Type	Mitigation Activity	Min-Max Buffer Width (ft)	Feature Name	Total Area (ft ²)	Total (Creditable) Area of Buffer Mitigation (ft ²)	Initial Credit Ratio (x:1)	% Full Credit	Final Credit Ratio (x:1)	Convertible to Riparian Buffer?	Riparian Buffer Credits	Convertible to Nutrient Offset?	Delivered Nutrient Offset: N (lbs)	Delivered Nutrient Offset: P (lbs)
Buffer	Rural	Yes	I / P	Restoration	0-100	UT1	133,008	133,008	1	100%	1.00000	Yes	133,008.000	Yes	6,940.535	—
Buffer	Rural	Yes	I / P	Restoration	0-100	Musselshell Creek	182,422	182,422	1	100%	1.00000	Yes	182,422.000	Yes	9,519.024	—
						Totals (ft2):	315,430	315,430					315,430.000		16,459.559	0.000
						Total Buffer (ft2):	315,430	315,430								
						Total Nutrient Offset (ft2):	0	N/A								
						Total Ephemeral Area (ft ²) for Credit:	0	0								
						Total Eligible Ephemeral Area (ft ²):	78,858	0.0%								
						Total Eligible for Preservation (ft ²):	105,143	0.0%								
Enter Preservation Credits Below																
Credit Type	Location	Subject?	Feature Type	Mitigation Activity	Min-Max Buffer Width (ft)	Feature Name	Total Area (sf)	Total (Creditable) Area for Buffer Mitigation (ft ²)	Initial Credit Ratio (x:1)	% Full Credit	Final Credit Ratio (x:1)	Riparian Buffer Credits				
	Rural	Yes	I / P		0-100				10	100%		—				
	Rural	Yes	Ephemeral		0-100				10	100%		—				
												—				
												—				
												—				
						Preservation Area Subtotals (ft ²):	0	0				—				
TOTAL AREA OF BUFFER MITIGATION (TABM)																
Mitigation Totals	Square Feet	Credits														
Restoration:	315,430	315,430.000														
Enhancement:	0	0.000														
Preservation:	0	0.000														
Total Riparian Buffer:	315,430	315,430.000														
TOTAL NUTRIENT OFFSET MITIGATION																
Mitigation Totals	Square Feet	Credits														
Nitrogen:	0	0.000														
Phosphorus:	0	0.000														

Credit conversions must be calculated using the guidance provided in the Clarified Procedures for Calculating Buffer Mitigation Credits and Nutrient Offset Credits letter issued by the DWR in November 2019 and located at: <https://files.nc.gov/ncdeq/Water%20Quality/Surface%20Water%20Protection/401/Mitigation/Issues---Resolutions-Ver-1.0-buffer-mitigation-nutrient-offset.pdf>

APPENDIX 2

DWR CORRESPONDENCE



NORTH CAROLINA
Environmental Quality

ROY COOPER
Governor
DIONNE DELLI-GATTI
Secretary
S. DANIEL SMITH
Director

April 30, 2021

Elvin James Lee Jr.
1359 Kingfield Road
Trenton, NC 28585
(404) 840-2697

2021 0020 v1
Jones County

Subject: **On-Site Determination** for Applicability to Neuse Riparian Buffer Rules (15A NCAC 02B .0714)

Subject Property/ Project Name: Kingsfield Buffer Mitigation Site

Address/Location: 1359 Kingfield Road, Trenton, NC 28585

Jones County

Stream(s) Evaluated: (2) – Musselshell Creek, Unnamed Tributary to Musselshell Creek (UT1)

Determination Date: February 22, 2021

Staff: Allen Stewart

Determination Type:	
Buffer:	Stream:
X - Neuse (15A NCAC 02B .0714) - Tar-Pamlico (15A NCAC 02B .0734) - Catawba (15A NCAC 02B .0614) - Jordan (15A NCAC 02B .0267) (governmental and/or interjurisdictional projects) - Randleman (15A NCAC 02B .0724) - Goose Creek (15A NCAC 02B .0605-.0608)	X - Intermittent/Perennial Determination

Stream	E/I/P*	Not Subject	Subject	Start@	Stop@	Soil Survey	USGS Topo
Musselshell Creek	P		X	35.113643, -77.325478	35.108759, -77.329753	X	X
UT1	P		X	35.111283, -77.331121	35.108759, -77.329753	X	X

*Ephemeral / Intermittent / Perennial

Mr. Lee,

The Division of Water Resources has determined that the stream listed above and included on the attached map has been located on the most recent published (1981) NRCS Soil Survey of Jones County, North Carolina and/or the most recent copy of the 2019 Trenton USGS Topographic map at a 1:24,000 scale and evaluated for applicability to the Neuse Riparian Buffer Rule. For each stream that is checked "Not Subject" it has been determined to not be at least intermittent or not present on the property. Streams that are checked "Subject" have been mapped on (1981) NRCS Soil Survey and/or USGS Topographic map 1:24,000, located on the property and possess characteristics that qualify them to be at least intermittent streams. There may be other streams or features located on the property that do not appear on the maps referenced above but may be considered jurisdictional according to the US Army Corps of Engineers and subject to the Clean Water Act.

This on-site determination shall expire five (5) years from the date of this letter. Landowners or affected parties that dispute a determination made by the DWR may request a determination by the Director. An appeal request must be made within sixty (60) calendar days of date of this letter to the Director in writing.

If sending via US Postal Service:
c/o Paul Wojoski
DWR – 401 & Buffer Permitting Unit
1617 Mail Service Center
Raleigh, NC 27699-1617

If sending via delivery service (UPS, FedEx, etc.):
c/o Paul Wojoski
DWR – 401 & Buffer Permitting Unit
512 N. Salisbury Street
Raleigh, NC 27604



This determination is final and binding as detailed above unless an appeal is requested within sixty (60) days.

This determination only addresses the applicability to the buffer rules and does not approve any activity within the buffers or waters. The project may require a Section 404/401 Permit for the proposed activity. Any inquiries regarding applicability to the Clean Water Act should be directed to the US Army Corps of Engineers Raleigh Regulatory Field Office at (919)-554-4884 Ext. 22.

If you have questions regarding this determination, please feel free to contact Allen Stewart at (252) 946-6481.

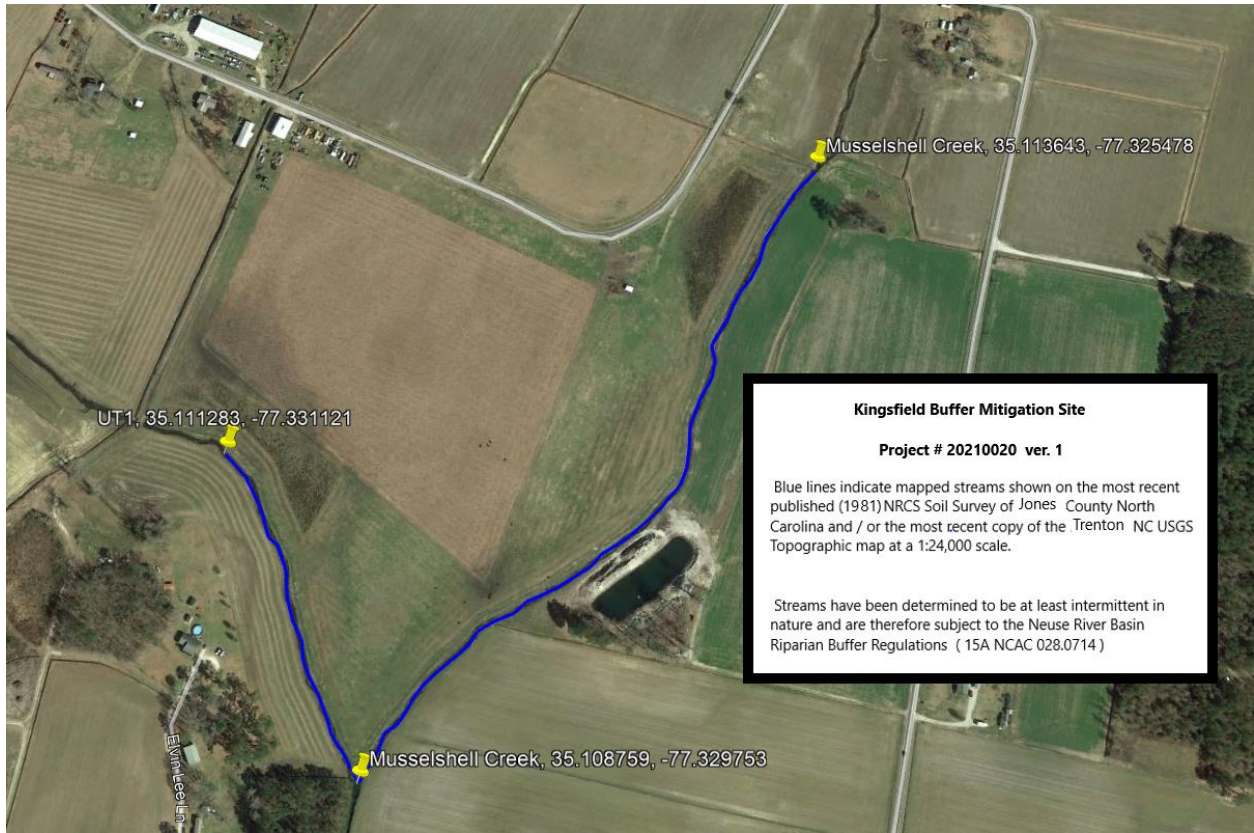
Sincerely,

Robert Tankard

Robert Tankard, Assistant Regional Supervisor
Water Quality Regional Operations Section
Division of Water Resources, NCDEQ

cc: WaRO DWR File Copy/LASERFICHE
Raymond Holz, Restoration Systems LLC, rholz@restorationsystems.com
Katie Merritt, NCDWR 401 & Buffer Permitting Branch, Katie.Merritt@ncdenr.gov
Samantha Dailey, US Army Corps of Engineers Raleigh Regulatory Field Office, samantha.j.dailey@usace.army.mil





Kingsfield Buffer Mitigation Site

Project # 20210020 ver. 1

Blue lines indicate mapped streams shown on the most recent published (1981) NRCS Soil Survey of Jones County North Carolina and / or the most recent copy of the Trenton NC USGS Topographic map at a 1:24,000 scale.

Streams have been determined to be at least intermittent in nature and are therefore subject to the Neuse River Basin Riparian Buffer Regulations (15A NCAC 028.0714)





ROY COOPER
Governor

ELIZABETH S. BISER
Secretary

S. DANIEL SMITH
Director

September 8, 2021

revises original letter issued July 13, 2021

Jamey O' Shaughnessey
Eco Terra Partners, LLC
(via electronic mail: jamey@ecoterra.com)

Re: Site Viability for Buffer Mitigation & Nutrient Offset – Kingfield Site
Trenton, NC (near 35.11154, -77.33190)
Neuse 03020204
Jones County

Dear Mr. O' Shaughnessey,

On July 13, 2021, the Division of Water Resources (DWR) issued a site viability letter for the above referenced site. Since the issuance of the letter, DWR received additional information on August 31, 2021 that affects the mitigation determination associated with an area adjacent to Musselshell Creek where fill material from the excavation of an irrigation pond was placed in Zone 1 and Zone 2 of the riparian buffer. Correspondence from DWR is included as an attachment to this letter. This letter replaces the letter issued on July 13, 2021.

On May 20, 2021, Katie Merritt, with the Division of Water Resources (DWR), received a request from you on behalf of Eco Terra Partners, LLC (Eco Terra) for a site visit near the above-referenced site in the Neuse River Basin within the 8-digit Hydrologic Unit Code 03020204. The site visit was to determine the potential for riparian buffer mitigation and nutrient offset within a proposed conservation easement boundary, which is more accurately depicted in the attached map labeled "Figure 2: Existing Conditions" (Figure 2) prepared by Eco Terra. The proposed easement boundary in Figure 2, includes all riparian areas intended to be proposed as part of a mitigation site. On April 27, 2021, Ms. Merritt performed a site assessment of the subject site. Staff with Eco Terra were also present.

Ms. Merritt's evaluation of the features onsite and their associated mitigation determination for the riparian areas are provided in the table below. This evaluation was made from Top of Bank (TOB) and landward 200' from each feature for buffer mitigation pursuant to 15A NCAC 02B .0295 (effective November 1, 2015) and for nutrient offset credits pursuant to 15A NCAC 02B .0703.



<u>Feature</u>	<u>Classification onsite</u>	<u>¹Subject to Buffer Rule</u>	<u>Riparian Land uses adjacent to Feature (0-200')</u>	<u>Buffer Credit Viable</u>	<u>³Nutrient Offset Viable</u>	<u>^{4,5}Mitigation Type Determination w/in riparian areas</u>
Musselshell Creek	Stream	Yes	Non-forested agricultural fields and pasture. An offline pond is present on left bank. Forested areas around the pond were present between 1993-2016+ (see map) and were located beyond 50' from top of bank. over 21,000 ft ² of fill material from an excavated pond is located in riparian areas including Zone 1 and Zone 2 of the riparian buffer (see attachments). Placement of fill in Zone 1 & Zone 2 was determined to not be a violation of the Neuse Buffer Protection Rule.	Yes	Yes (excluding previously forested areas around pond)	Non-forested fields (excluding fill footprint) - Restoration Site per 15A NCAC 02B .0295 (n) Footprint of fill material (berm)– Restoration Site per 15A NCAC 02B .0295 (n) if all fill material is graded level with top of bank, stabilized, seeded and planted. Footprint of areas previously in forest around pond– Restoration Site per 15A NCAC 02B .0295 (n) for buffer credit only
UT1	Stream	Yes	Non-forested agricultural fields and pasture Actively eroding banks were observed.	Yes	Yes (non-forested areas only)	Non-forested fields - Restoration Site per 15A NCAC 02B .0295 (n) <i>Minor bank stabilization efforts and grading needed where bank stability is compromised and where erosional rills, sink holes and gullies are observed</i>

¹Subjectivity calls for the features were determined by DWR in correspondence dated April 30, 2021 (DWR# 2021-0020) using the 1:24,000 scale quadrangle topographic map prepared by USGS and the most recent printed version of the soil survey map prepared by the NRCS .

²The area of preservation credit within a buffer mitigation site shall comprise of no more than 25 percent (25%) of the total area of buffer mitigation per 15A NCAC 0295 (o)(5) and 15A NCAC 0295 (o)(4). Site cannot be a Preservation Only site to comply with this rule.

³NC Division of Water Resources - Methodology and Calculations for determining Nutrient Reductions associated with Riparian Buffer Establishment

⁴Determinations made for this Site are determined based on the proposal provided in maps and figures submitted with the request.

⁵All features proposed for buffer mitigation or nutrient offset, must have a planted conservation easement established that includes the tops of channel banks when being measured perpendicular and landward from the banks, even if no credit is viable within that riparian area.

⁶The area of the mitigation site on ephemeral channels shall comprise no more than 25 percent (25%) of the total area of buffer mitigation per 15A NCAC 02B .0295 (o)(7).

Determinations provided in the table above were made using a proposed easement boundary showing proposed mitigation areas shown in Figure 2. The map representing the proposal for the site is attached to this letter and initialed by Ms. Merritt on June 10, 2021. Additional information regarding the site related to the fill material within the riparian areas is attached as Figure 1 and initialed by Ms. Merritt on June 10, 2021. Substantial changes to the proposed easement boundary as well as any site constraints identified in the table above, could affect the Site's potential to generate buffer mitigation and nutrient offset credits.

This letter does not constitute an approval of this Site to generate buffer and nutrient offset credits. Pursuant to 15A NCAC 02B .0295, a mitigation proposal and a mitigation plan shall be submitted to DWR for written approval **prior** to conducting any mitigation activities in riparian areas and/or surface waters for buffer mitigation credit. Pursuant to 15A NCAC 02B .0703, a proposal regarding a proposed nutrient load-reducing measure for nutrient offset credit shall be submitted to DWR for approval prior to any mitigation activities in riparian areas and/or surface waters.

All vegetative plantings, performance criteria and other mitigation requirements for riparian restoration, enhancement and preservation must follow the requirements in 15A NCAC 02B .0295 to be eligible for buffer and/or nutrient offset mitigation credits. For any areas depicted as not being viable for nutrient offset credit above, one could propose a different measure, along with supporting calculations and sufficient detail to support estimates of load reduction, for review by the DWR to determine viability for nutrient offset in accordance with 15A NCAC 02B .0703.

This viability assessment will expire on June 10, 2023 or upon approval of a mitigation plan by the DWR, whichever comes first. This letter should be provided in any nutrient offset, buffer, stream or wetland mitigation plan for this Site.

Please contact Katie Merritt at (919) 707-3637 if you have any questions regarding this correspondence.

Sincerely,

DocuSigned by:
Paul Wojoski
949D91BA53EF4E0...

Paul Wojoski, Supervisor
401 and Buffer Permitting Branch

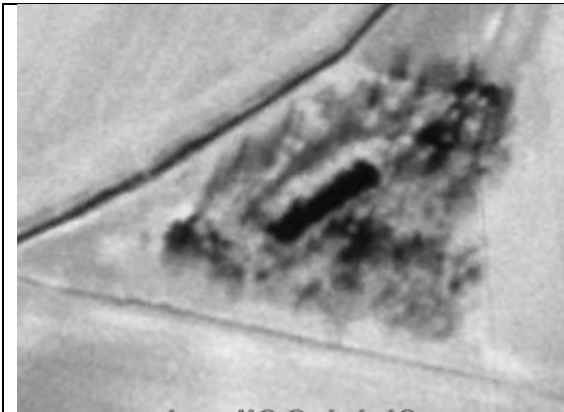
PW/kym

Attachments: Figure 1: Photos of fill material; Figure 2: Existing Conditions; DWR Email Correspondence

cc: File Copy (Katie Merritt)

Kynn 6/16/21

FIGURE 1: Photo documentation of land use changes since 1993



1999 Imagery showing pond riparian areas vegetated. Zone 1 & Zone 2 of riparian buffer in maintained ag



2014 imagery (fall) showing pond riparian areas vegetated & approximate measurements taken from top of bank along stream to edge of forest (not dripline). Zone 1 & Zone 2 of riparian buffer in maintained ag.



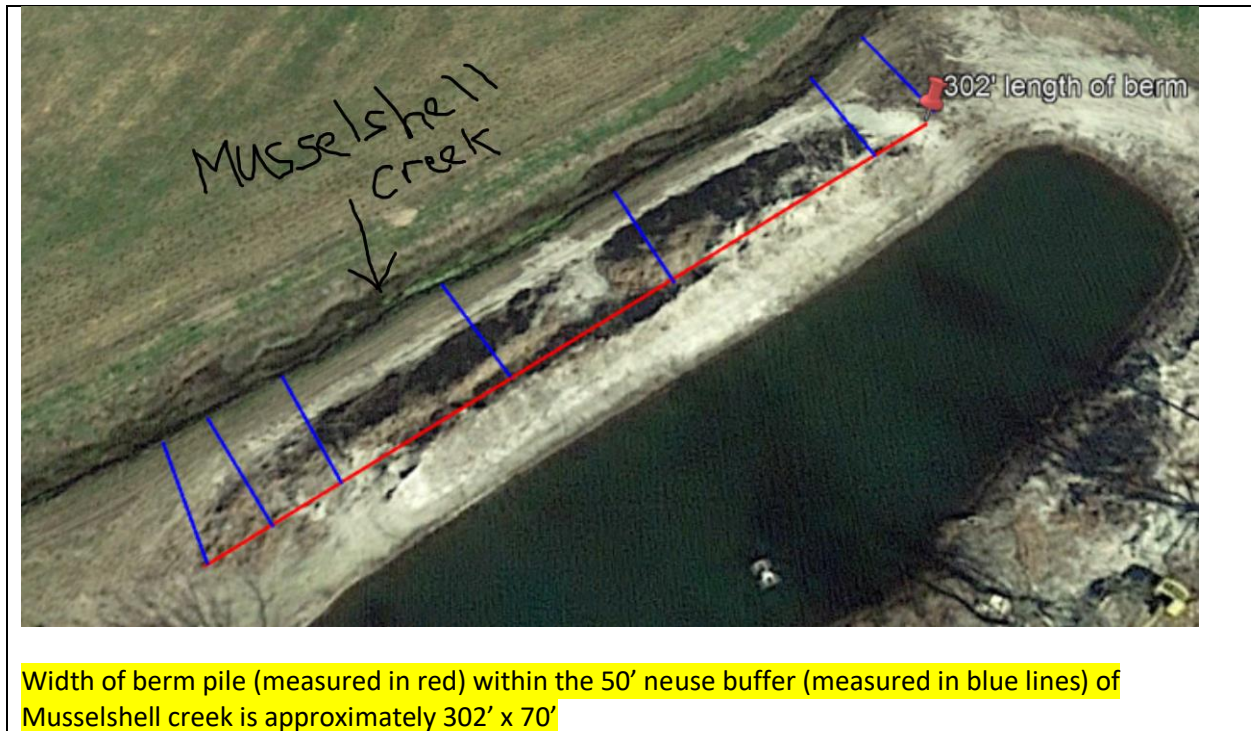
2016 Imagery showing pond riparian areas vegetated. Zone 1 & Zone 2 of riparian buffer in maintained ag



2019 imagery showing pond footprint, recent removal of trees, & excavated material/berm pile located in Zone 1 and some of Zone 2 of riparian buffer. Approximate measurements taken in feet from top of bank along stream to previous (before clearing) edge of forest (Red lines) & approximate measurements in feet taken from top of bank along stream to edge of berm pile (Blue lines).

Kym 6/10/21

FIGURE 1: Photo documentation of land use changes since 1993



Legend

Kym 6/10/21



Proposed Conservation Easement 8.13 acres

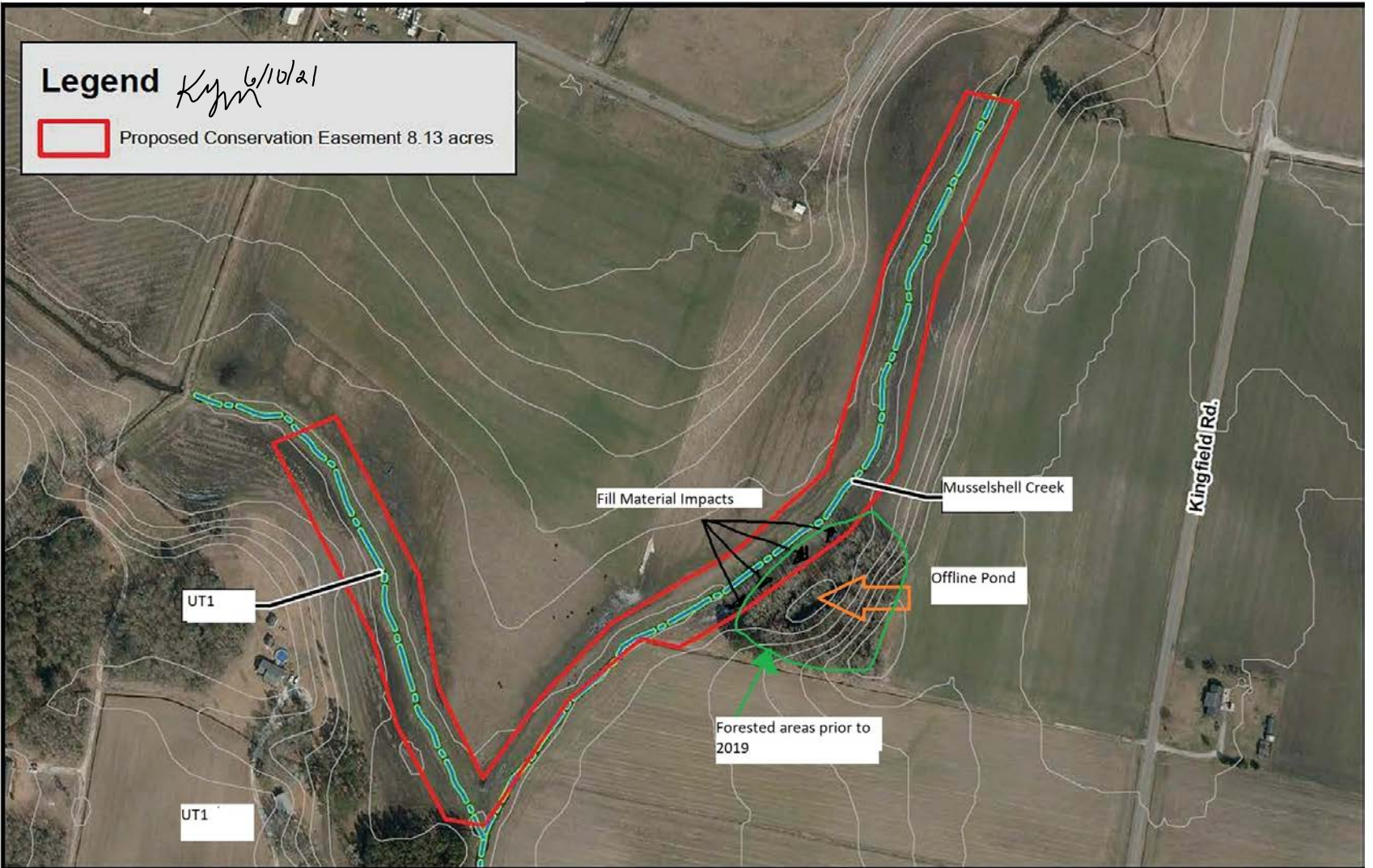
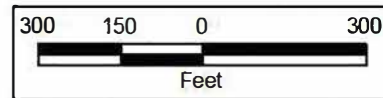


Figure 2: Existing Conditions
Kingfield Buffer Mitigation Site
Neuse 03020204
Jones County, North Carolina
September 2020



From: [Sullivan, Shelton](#)
To: [Merritt, Katie](#)
Cc: [Wojoski, Paul A](#); [Tankard, Robert](#); [Pullinger, Robert C](#); [Stewart, Glenn A](#)
Subject: RE: Potential Buffer Violation
Date: Tuesday, August 31, 2021 10:44:32 AM
Attachments: [image001.png](#)
[image002.png](#)
[image003.png](#)

Katie,

DWR Central and Regional staff discussed the Kingfield Site associated with DWR ID# 2021-0020. It was determined that the overall existing use of the property is still agriculture and that there is currently no clear buffer violation on the site.

Regards,

Shelton Sullivan
401 & Buffer Permitting Branch
Division of Water Resources
North Carolina Department of Environmental Quality

(919) 707-3636 office
(919) 239-0238 current cell
(919) 807-6494 fax

shelton.sullivan@ncdenr.gov

Location: 512 N. Salisbury Street, Archdale Bldg #942G, Raleigh, NC 27604
US Mail: 1617 Mail Service Center, Raleigh, NC 27699-1617



Email correspondence to and from this address is subject to the North Carolina Public Records Law and may be disclosed to third parties.

Location: 512 N. Salisbury Street, Archdale Bldg #942G, Raleigh, NC 27604
US Mail: 1617 Mail Service Center, Raleigh, NC 27699-1617



Email correspondence to and from this address is subject to the North Carolina Public Records Law and may be disclosed to third parties.

From: Merritt, Katie
Sent: Thursday, June 10, 2021 1:35 PM
To: Pullinger, Robert C <chris.pullinger@ncdenr.gov>
Cc: Stewart, Glenn A <Glenn.Stewart@ncdenr.gov>; Wojoski, Paul A <Paul.Wojoski@ncdenr.gov>; Tankard, Robert <robert.tankard@ncdenr.gov>
Subject: Potential Buffer Violation

Hey Chris,

DWR WaRO performed a stream call determination on a site in Trenton, NC back in April 2021. I recently went to this site in late May to perform a site viability assessment of the features and their respective riparian areas (out to 200' from top of banks) for purposes of generating buffer mitigation credits. While I was there, I noticed impacts to the riparian buffer along Musselshell creek. Those impacts are shown in the attached document with photos and consist of significant fill material within both Zone 1 & Zone 2 of the riparian buffer from the recent excavation of an off-line pond (pond has been there since before the 90's, but it appears the landowner decided to excavate it out and make it deeper and wider. The excavated material is within the buffer and was at least 10' in height for reference. Additionally, there were no sediment & erosion control efforts in place to prevent runoff impacts to the creek. The material has created a berm that measured approximately 302' x 70' plus or minus.

I plan to put my Site Viability Assessment letter on hold until I receive input from WaRO on if this constitutes a buffer violation.

Thanks,
katie

Katie Merritt
Nutrient Offset & Buffer Banking Coordinator
401 & Buffer Permitting Unit
North Carolina Department of Environmental Quality
Office: 919-707-3637
Work Cell: 919-500-0683
Website: <http://portal.ncdenr.gov/web/wq/401bufferpermitting>

[512 N. Salisbury Street, Raleigh, NC 27620](http://www.ncdenr.gov)

APPENDIX 3

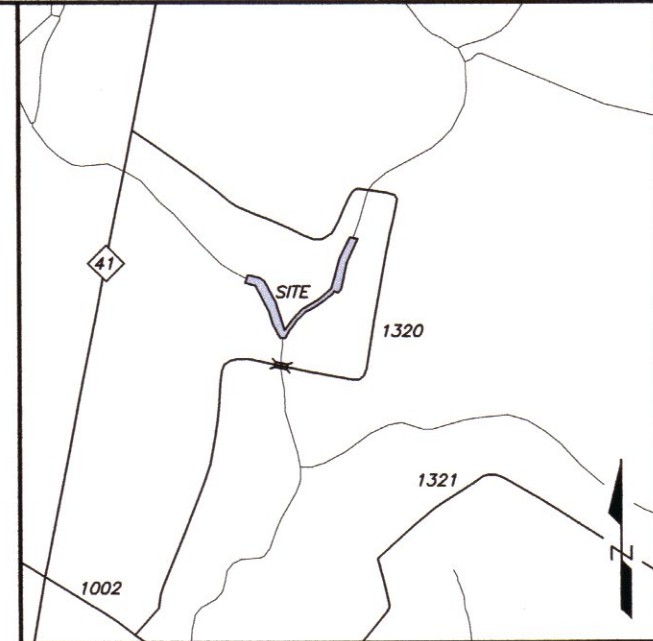
AS-BUILT SURVEY

THIS MAP IS NOT FOR RECORDATION, SALES, OR CONVEYANCES AND DOES NOT COMPLY WITH G.S. 47-30 MAPPING REQUIREMENTS.

NOTES:

1. ALL DISTANCES ARE HORIZONTAL GROUND MEASUREMENTS IN FEET & DECIMALS THEREOF, UNLESS OTHERWISE NOTED.
2. ACREAGE DATA IS BY COMPUTER COMPUTATION.
3. VEGETATION PLOTS & PHOTO POINT LOCATIONS ARE TAKEN FROM A SHAPEFILE PROVIDED BY ECO TERRA AND WERE NOT SURVEYED AT THIS TIME.
4. SEE EASEMENT DEEDS RECORDED IN DB 422, PG 637, DB 422, PG 661, & DB 422, PG 677.
5. SEE EASEMENT MAPS RECORDED IN PC C, SL 124, PG 1 THROUGH PG 4.

ARCHIE R. DAVIS
CAROLYN B. DAVIS
DB 153, PG 293
MB 8, PG 72



VICINITY MAP
(NOT TO SCALE)

REBECCA LYNN LEE MEADOWS
DENNIS JAMES LEE
SUSAN MARIE LEE
DB 206, PG 143
PC A, SL 157

ELVIN JAMES LEE, III
DB 399, PG 358
MB 7, PG 45

REBECCA LYNN LEE MEADOWS
DENNIS JAMES LEE
SUSAN MARIE LEE
DB 206, PG 143
PC A, SL 157

ELVIN J. LEE, JR.
DB 170, PG 112
MB 12, PG 90

ELVIN J. LEE, JR.
DB 225, PG 121
PC A, SL 132A

ELVIN J. LEE, JR.
DB 170, PG 112
MB 12, PG 90

ELVIN LEE, JR.
IDA JARMAN LEE
DB 400, PG 112
MB 1, PG 27

ELIZABETH JONES WATERS
DB 257, PG 860

LEGEND
VP = VEGETATION PLOT
[Hatched Box] = RIPARIAN BUFFER RESTORATION (0-100')

CREDIT AREA	SQ. FT.	ACRES
RIPARIAN BUFFER RESTORATION (0-100')	315,430	7.241

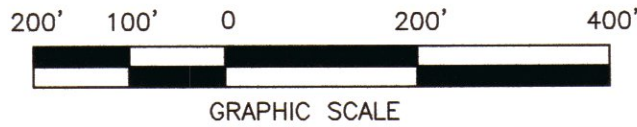


I, CHRISTOPHER K. PADERICK, AS A DULY REGISTERED PROFESSIONAL LAND SURVEYOR IN THE STATE OF NORTH CAROLINA, CERTIFY THAT THIS BUFFER MAP WAS DRAWN UNDER MY SUPERVISION, IS AN ACCURATE AND COMPLETE REPRESENTATION OF WHAT WAS CONSTRUCTED IN THE FIELD. THAT THE EASEMENT BOUNDARY IS BASED ON PLAT CABINET C, SLIDE 124, PAGES 1-4, RECORDED IN THE JONES COUNTY REGISTER OF DEEDS OFFICE, AND THAT THE BUFFER AREAS SHOWN ARE CALCULATED FROM AS-BUILT CONDITIONS EXCEPT WHERE OTHERWISE NOTED HEREON. WITNESS MY ORIGINAL SIGNATURE, REGISTRATION NUMBER AND SEAL THIS 25th DAY OF APRIL, 2022.

Christopher K. Paderick
L-4189

AS-BUILT
SURVEY FOR
**ECO TERRA
KINGFIELD BUFFER SITE**

CHINQUAPIN TOWNSHIP APRIL 25, 2022
JONES COUNTY, NC 1" = 200'



NAD 83(2011)

MATRIX EAST, PLLC
PROFESSIONAL LAND SURVEYORS
908 N. QUEEN ST., SUITE A KINSTON, NC 28501
TEL: 252-522-2500 FAX: 252-522-4747

FIRM LIC. # P-0221	EMAIL: surveyor@matrixeast.net
DRAWN BY: CKP/JRW	PROJECT NO.: 20210192
SURVEYED BY: CKP/CCK	DATE: 4/25/2022
SCALE: 1" = 200'	DRAWING NAME: 20210192

APPENDIX 4

SITE PHOTOGRAPHS

Photo-Points

Kingfield Buffer Mitigation Site

DMS ID No. 100176

DWR Project No. 2021-0020v2

Baseline 2022



Pp1



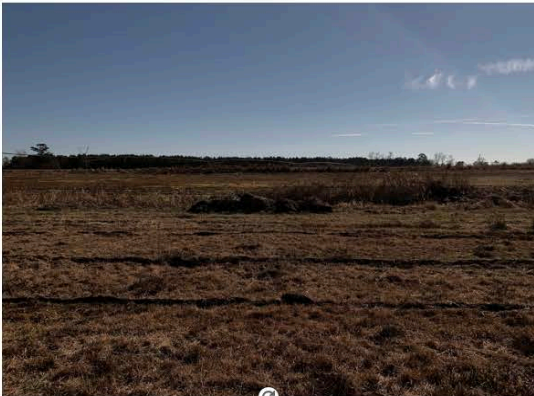
Pp2



Pp3



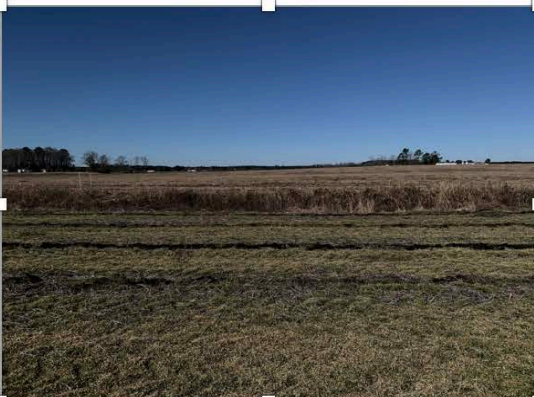
Pp4



Pp5



Pp6



Pp7

APPENDIX 5

MONITORING PLOT DATA
MONITORING PLOT PHOTOGRAPHS

Monitoring Plots

Kingfield Buffer Mitigation Site

DMS ID No. 100176

DWR Project No. 2021-0020v2

Baseline 2022



MP1



MP2



MP3



MP4



MP5



MP6



MP7

Site post construction (February 2022)

