



Regular Meeting Minutes

**Board of County Commissioners
Hyde County**

Monday, May 1, 2017

Chairman Earl Pugh, Jr. called the Regular Meeting of the Hyde County Board of Commissioners to order at 7:00pm on Monday, May 1, 2017, in the Hyde County Government Center, Multi-Use Room.

The following members were present from the mainland: Commissioners Benjamin Simmons, Tom Pahl and Vice Chairman Barry Swindell; Commissioner Ben Simmons; Attorney Fred Holscher; County Manager Bill Rich; Assistant County Manager Kris Noble; Deputy Clerk to the Board Rosemary Johnson, and members of the public. Commissioners present on Ocracoke was Dick Tunnell. Commissioners not present for the vote were Ben Simmons and Dick Tunnell.

Due to technical difficulties with the telecommunication equipment at the meeting location on Ocracoke, board members and the general public on Ocracoke were not able to attend the meeting here on the mainland. After some discussion of the circumstances, Chairman Pugh made a recommendation that the regular board meeting be rescheduled for next Monday, May 8 at 6 pm following the Board of Equalization meeting. The regular commissioner's meeting will be held in conjunction with the commissioner's budget workshop already scheduled for that date.

Chairman Pugh made a motion that the commissioners meeting be rescheduled for Monday, May 8 at 6 pm. Commissioner Tom Pahl seconded the motion and the motion carried. Commissioner Pahl then made a motion that the May 1 Board of Commissioners meeting be adjourned. Vice Chairman Barry Swindell seconded the motion; motion carried.

Chairman of the Board of Commissioners

ATTEST:

Deputy Clerk to the Board

**Hyde County Board of Commissioners
AGENDA ITEM SUMMARY SHEET**

Meeting Date: May 8, 2017
Presenter: Tammy Blake
Attachment: Yes

ITEM TITLE: EMPLOYEE BENEFITS 2017

SUMMARY: The attached employee newsletter highlights expected employee benefits for the 2017-18 fiscal year. Staff has been working diligently over the last several months to shop the best and most affordable health insurance coverage for our employees. The rising cost of health care and insurance is a top concern for us as a local government. Through our research we have been reassured that our employees have one of the best benefit packages in the state.

RECOMMEND: APPROVE.

Motion Made By: Earl Pugh, Jr.
 Barry Swindell
 Dick Tunnell
 Ben Simmons
 Tom Pahl

Motion Seconded By: Earl Pugh, Jr.
 Barry Swindell
 Dick Tunnell
 Ben Simmons
 Tom Pahl

Vote: Earl Pugh, Jr.
 Barry Swindell
 Dick Tunnell
 Ben Simmons
 Tom Pahl



Hyde County HR News

Keeping Hyde County Employees Informed

Open Enrollment Insurance Meetings

The County will **not** be changing health care providers on July 1, 2017. Our BCBSNC insurance provider will be in Hyde County on **May 23-25** to present the 2017-2018 plan information, to make any changes in enrollment (add/drop your child(ren)) and to discuss the new plan changes with employees. **All full-time employees are required to attend.** Please contact your supervisor to discuss meeting times.

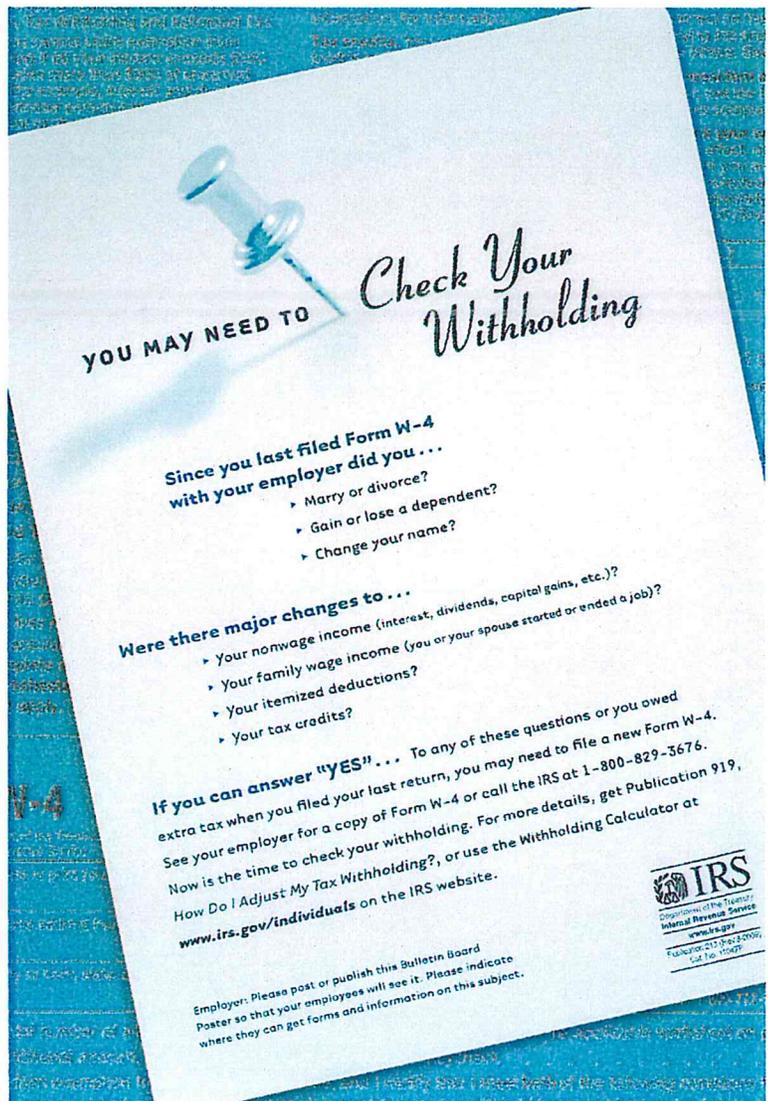
- Health Reimbursement Account (HRA) - up to \$1,500/year
- NC Retirement plan—fully vested after 5 years of employment

The County may not be able to give bonuses or cost of living allowances, but they do pay extra when it comes to increases in your medical insurance. When you think about how much you really make, typically you can add on almost \$10,000 annually in benefits. Wow! Bet you didn't know you were making so much.

County Employee Benefits

Did you know that you have several benefits just by being a full-time employee of the County? You receive these perks in addition to your regular pay. These include:

- Worker's compensation (in case you are injured while at work)
- Social Security taxes—6.2% of your salary
- Medicare taxes—1.45% of your salary
- Unemployment insurance—1% of your salary (max payment up to \$231/year)
- Paid vacation (8 hours/month + extra days accrued in January for 2 or more years of service)
- Paid sick leave (8 hours/month)
- Paid holiday pay (12 paid holidays/year for non-shift employees)
- Medical insurance- \$563.72/month
- Vision insurance—\$6.07/month
- \$25,000 Life insurance policy—\$6.50/month



Aflac & Colonial Insurance Meetings in May

Representatives with Aflac & Colonial will be visiting the County's departments during the month of May. Please make an effort to see them if you need to make any changes to your cancer policy, life insurance coverage, short and/or long-term disability policy, etc. Aflac's rep can be reached at 252.943.5061 and Colonial's rep can be reached at 252.353.7262.

Top Tips for Stretching Your Tax Refund

The IRS estimates the average tax refund each year exceeds more than \$3,000. But when it comes to managing your money, your best bet is to find ways to make what you get back go further. Here are some top tips for stretching your refund.

Treat yourself

Don't overdo it, but putting some of the refund toward something just for you should make for a nice treat. It may also help curb the desire to make a larger impulse buy.

Add to your IRA

Another way to help yourself is by adding some or all your refund to an Individual Retirement Account (IRA). This is a good way to add a boost to your retirement savings. If you haven't gotten started, this is an easy way to do so. With a Traditional IRA, contributions may be tax-deductible. You're only taxed on the deductible contributions you've made and earnings you've received over time when you make withdrawals. A Roth IRA allows you tax-free withdrawals if you meet certain IRS rules.

A Simplified Employee Pension (SEP) IRA is a unique option that you may have available to you if you are self-employed or work for a small business. With a SEP, your employer makes tax-deductible contributions to the account. You, as the employee, do not.

Establish a rainy day fund

Try to have at least three to six months of living expenses on hand for unexpected situations, like a health problem. Use your refund to get started or boost your savings. Consider a Money Market Account, which typically carries a higher dividend than basic savings account. Resist the temptation to spend by skipping the ATM card. Save the money for a true emergency.

Pay off credit cards

Paying off your mortgage sooner may not be as attractive as a new Super-LED TV. Yet, the unattractive options are sometimes the ones that make the most sense. Since this is likely the debt with the highest interest rate, start here. If you can knock down — or knock out — this debt with your refund. Think of all the money you'll save in interest alone.

Make an extra payment on your mortgage

Think about the interest you'd pay over the life of the mortgage. In some cases, it may be nearly as much as the principal. Use your refund to add an extra payment. You could reduce the interest you would likely pay.

Make your money work for you; put your tax refund to good use.

Article provided by Local Government Federal Credit Union.

The advice provided is for informational purposes only. Contact a financial advisor for additional guidance.



Volunteers are Needed: The Senior Center's *Meals on Wheels* needs volunteers to deliver meals to the shut-ins. Interested parties should contact Darlene Berry at 252.926.1956.

**Hyde County Board of Commissioners
AGENDA ITEM SUMMARY SHEET**

Meeting Date: May 8, 2017
Presenter: Kris Noble
Attachment: Yes

ITEM TITLE: RESOLUTION IN SUPPORT OF A NC DIVISION OF COASTAL
MANAGEMENT LOCAL PLANNING AND MANAGEMENT GRANT
PROGRAM GRANT APPLICATON 2017-2018

SUMMARY: The attached resolution and grant application must be approved by the local governing board. The resolution supports an application to NC Division of Coastal Management for the amount of \$15,000 to support the Mattamuskeet Watershed Restoration Plan process.

RECOMMEND: APPROVE.

Motion Made By: Earl Pugh, Jr.
 Barry Swindell
 Dick Tunnell
 Ben Simmons
 Tom Pahl

Motion Seconded By: Earl Pugh, Jr.
 Barry Swindell
 Dick Tunnell
 Ben Simmons
 Tom Pahl

Vote: Earl Pugh, Jr.
 Barry Swindell
 Dick Tunnell
 Ben Simmons
 Tom Pahl



**N.C. Division of Coastal Management
Local Planning and Management Grant Program
Grant Application 2017-2018**

Please complete a separate application for each proposed project and submit two (2) printed copies and one (1) CD or USB drive with digital files to your DCM District Planner.

This application is also available [online](#).

APPLICATION DUE: March 31, 2017

Project Name: <u>Mattamuskeet Watershed</u>	Project Administrator: <u>Kris Cahoon Noble</u>
Local Government: <u>Hyde</u>	Title: <u>Assistant County Manager</u>
Federal ID#: <u>56-6000308</u>	Address: <u>PO Box 188</u>
Lead Elected Official: <u>Earl Pugh Jr.</u>	<u>Swan Quarter, NC 27885</u>
Title: <u>Board Chair</u>	Phone: <u>2525420802</u>
Address: <u>PO Box 188</u>	Fax: <u>2529263701</u>
<u>Swan Quarter, NC 27885</u>	Email: <u>knoble@hydecountync.gov</u>

Budget Totals and Financial Assistance Requested: *Provide information from Summary Budget.*

DCM Grant	Local Match	Total Cost
Requested: <u>15000.</u>	Cash: _____ In-Kind: <u>5000. <i>KCN</i></u> Grant Assistance: <u>60000</u>	<u>\$80,000.00</u> <i>KCN</i>

Authorized Signature *Earl Pugh Jr.* **Title:** Chairman

Name (print) Earl Pugh, Jr. **Date:** 3/31/2017

Provide the following narratives. If necessary, please use additional pages.

A. Does the project meet this year prioritized project topics of Natural Hazards and Storm Recovery? YES NO If so, indicate how the project meets the topic.

B. Project Description

C. List Project Objectives

D. Expected Project Product(s)

E. Pre-Project Tasks: Identify tasks that must be completed prior to starting the project.

F. Local Government Approval:

Each grant application must be reviewed and approved by the local governing board at a duly advertised public hearing or meeting. Provide a memorandum resolution, or a copy of the meeting minutes indicating the board's action on the application.

G. Is all or a portion of this project under consideration by other programs for funding?

YES NO If so, indicate which program(s) and which fiscal year(s). Does the funding requested from another program duplicate or compliment the funding requested from the Planning and Management Grant? How viable is the project if complementary funding from another program is not secured?

H. Certified Land Use Plan (Title and Initial State Certification Date):

I. Date of last Land Use Plan Implementation Status Report:

An implementation status report is required to be submitted every two (2) years after the initial state certification date. In order to be eligible for this grant, the community must be up to date on their implementation reporting. An implementation status report will be required as an attachment to this grant application if an up to date report is not on file with DCM. See 15A NCAC 07B.0804 for report requirements.

J. Is this project identified as a high local priority in your certified Land Use Plan?

YES NO If so, attach a brief description of the plan and a statement of the extent to which the project implements the policies of this plan.

K. Is this project reflected in any other policy documents or ordinances?

YES NO If so, attach a brief description of the document or ordinance and a statement of the extent to which the project implements goals of the documents or ordinance.

L. Will the project require local adoption by the elected officials in order to be implemented?

YES NO

M. Proposed Local Match and Cost Assumptions:

Provide narrative indicating the source of cash match and availability of funds. Provide narrative explaining the relevance of proposed in-kind match to the project. If other state and/or federal funds are to be used as local match, indicate the amount, the funding source, when the funding will be awarded/available, and the specific project elements that will qualify for joint funding.

N. Proposed Summary Budget

	Grant Assistance Requested	Local Cash Contribution	Local In-Kind Contribution	TOTAL
Subcontract Costs:				
NC DCM	15000			15000
NC WRC, USFWS	60000			60000
Subtotal	75000	0	0	75000
Salaries:				
Manager, Assistant Manager, Water and Flood Control Coordinator	5000. kcn			0
Subtotal	0	0	0	0
Printing:				
				0
Subtotal	0	0	0	0
Materials:				
				0
Subtotal	0	0	0	0
Equipment:				
				0
Subtotal	0	0	0	0
TOTAL BUDGET	75000 \$80,000. (1000)	0	0	75000- 75000 \$80,000.00, (kcn)

Please See Attachment: Breakdown of Costs

- O. **Proposed Budget:** If available, attach a detailed breakdown of the cost assumptions upon which the Summary Budget is based. Proposals that include this information increase their likelihood of funding.

- P. **Project Timeline:** The purpose of the timeline is to establish benchmarks during the project period to ensure timely completion. Progress monitoring is to occur at the 6 month interval for the duration of the 12 month contract. We recognize that unexpected events may require adjustments to the timeline. The schedule is meant to be an aid for measuring the progress of the project and a guide to making adequate contract adjustments when necessary.

Month \ Task	1	2	3	4	5	6	7	8	9	10	11	12
Return Contract			✓									
Post RFP	✓											
Select Subcontractor		✓										
Begin Project			✓									
End Project										✓		
Closeout											✓	

Please see Attachment G: Project Schedule and Activities

**Planning and Management Grant Program Final Application
Hyde County
Mattamuskeet Watershed Restoration Planning – Draft Plan**

A. Does the project meet this year prioritized project topics of Natural Hazards and Storm Recovery?

Yes. Hurricane Matthew passed by the coast of North Carolina on October 2, 2016. During the passing of Hurricane Matthew, USGS monitoring stations on the lake showed that lake levels rose from 1.1 to 1.7 ft above the NAVD88 datum. These are the highest water levels that have been observed since water level monitoring began in October 2013. This suggests that the water levels in the lake now represent extreme conditions, but moving forward climate experts suggest planning for extremes rather than the norm. Appendix A: Report from USFWS contains more data on these levels from pages 27-32.

These extreme water levels pushed the water from Lake Mattamuskeet far out of its normal boundaries, flooding homes and yards along North Lake Road and the Saint Lydia area especially but additionally along the shoreline of Lake Mattamuskeet as well. Residents have been demanding a reduction of water levels in the lake as the waters are quickly encroaching their properties. In addition, damage to roadways including Hwy 94 and North Lake Road are occurring.

B. Project Description

Lake Mattamuskeet is experiencing declining water quality and is currently considered to have water quality impairments that violate state and federal water quality classifications and standards.

The existing Mattamuskeet Technical Working Group is a collaborative that works to identify, prioritize and conduct monitoring and research at Mattamuskeet National Wildlife Refuge. It has identified the need to develop a watershed restoration plan that will identify achievable and realistic goals for improving water quality in the lake, and then outline practical steps that can be implemented to achieve those goals. Key to the development of the plan is engagement of stakeholders with interests in the lake in an open process. These stakeholders are needed to identify and quantify the problems that need to be addressed and forge solutions and management actions.

Hyde County, the North Carolina Wildlife Resources Commission and United States Fish and Wildlife Service will work with the North Carolina Coastal Federation to assist the stakeholders in facilitating the development of a Mattamuskeet Watershed Restoration Plan using a proven methodology that has been used for the Mattamuskeet Drainage District and other North Carolina coastal communities. This plan, once approved, will meet federal and state requirements that will position the stakeholders to apply for grants that fund the implementation of watershed management strategies outlined in the plan. Please see Appendix B: Memorandum of Agreement to Write a Watershed Restoration Plan for Lake Mattamuskeet.

Please note that this grant application supports the completion of a draft Mattamuskeet Watershed Restoration Plan. A final plan will be completed by October 2018 and will be submitted to the Division of Coastal Management.

**Planning and Management Grant Program Final Application
Hyde County
Mattamuskeet Watershed Restoration Planning – Draft Plan**

C. Project Objectives

Develop a Draft Plan that leads to a final plan which includes the following objectives:

- Develop solutions for addressing and improving water quality in Lake Mattamuskeet;
- Develop solutions for addressing and managing water levels in Lake Mattamuskeet;
- Utilize an inclusive group of stakeholders including local experts and elected and agency officials;
- Analyze historic and current lake hydrology through a GIS study;
- Capture oral and written history of changes to or improvements in hydrology around; Lake Mattamuskeet analyzing historic pre-water quality impairment.

D. Expected Project Product:

The product will be a draft watershed restoration plan which will lead to a final Mattamuskeet Watershed Restoration Plan which is a voluntary plan that can be used to provide the framework to restore an impaired waterbody and can provide guidance for future protection of that waterbody. The plan will contain the 9 key elements which must be present to qualify for 319 Grant funding of the Clean Water Act. This will allow the EPA to provide money for projects that address nonpoint source pollution and can be used for the implementation of approved watershed restoration plans.

E. Pre-project Tasks:

Hyde County, USFWS and NC WRC have already joined cooperatively with the NC Coastal Federation to convene an inclusive group of stakeholders including the aforementioned in addition to the Hyde County Soil & Water Board and other local stakeholders. Various stakeholder meetings have already occurred and are scheduled to continue in the month of April and throughout the summer of 2017.

F. Local Government Approval:

Hyde County adopted the Attached Appendix C: RESOLUTION EXPRESSING SUPPORT FOR THE US FISH AND WILDLIFE SERVICE'S (FWS) PROPOSED PLAN TO COOPERATIVELY ADDRESS LAKE MATTAMUSKEET WATER ISSUES and Appendix D: HYDE COUNTY BOARD OF COMMISSIONERS RESOLUTION IN SUPPORT OF A NC DIVISION OF COASTAL MANAGEMENT LOCAL PLANNING AND MANGEMENT GRANT PROGRAM GRANT APPLICATION 201-2017.

G. Is all or a portion of this project under consideration by other programs for funding?

This project comes at a cost of \$80,000. \$30,000 has been committed by the North Carolina Wildlife Resources Commission and \$30,000 from the United States Fish and Wildlife Service. The remaining

**Planning and Management Grant Program Final Application
Hyde County
Mattamuskeet Watershed Restoration Planning – Draft Plan**

\$20,000 is the share of Hyde County. Hyde County hopes to utilize these grant funds to provide the \$15,000 and support the project with \$5,000 in kind support in the form of staff time. Staff supporting the project include the Hyde County Manager, Assistant Manager, Water and Flood Control Coordinator and Hyde County Soil and Water Technician.

H. Certified Land Use Plan

Hyde County CAMA Core Land Use Plan adopted January 7, 2008.

I. Date of last Land Use Plan Implementation Status Report:

June 2016

J. Is this project identified as a high local priority in your certified Land Use Plan? Yes

The Hyde County CAMA Core Land Use Plan states the following goals in regard to water quality:

a. Management Goal

Hyde County will protect its surficial and surface water quality including enhancing water quality in all coastal wetlands, rivers, streams, and estuaries.

b. Planning Objective

On a case-by-case basis, Hyde County will adopt policies to help ensure that water quality is maintained if not impaired, and improved if impaired.

c. Land Use Plan Requirements

The following provides Hyde County's policies/implementing actions on water quality. All policies are continuing activities.

Hyde County CAMA Land Use Plan Executive Summary Page 48.

K. Is this project reflected in any other policy documents or ordinances?

Please see attached Appendix C: RESOLUTION EXPRESSING SUPPORT FOR THE US FISH AND WILDLIFE SERVICE'S (FWS) PROPOSED PLAN TO COOPERATIVELY ADDRESS LAKE MATTAMUSKEET WATER ISSUES.

L. Will the project require local adoption by the elected officials in order to be implemented?

NO. Hyde County intends to adopt the Mattamuskeet Watershed Plan but this is not required to implement individual action steps identified in the plan.

**Planning and Management Grant Program Final Application
Hyde County
Mattamuskeet Watershed Restoration Planning – Draft Plan**

M. Proposed Local Match and Cost Assumptions:

This project comes at a cost of \$80,000 in the form of a contract with the NC Coastal Federation to complete all work and Hyde County staff time on the project. \$30,000 has been committed by the North Carolina Wildlife Resources Commission and \$30,000 from the United States Fish and Wildlife Service. The remaining \$20,000 is the share of Hyde County. Hyde County hopes to utilize these grant funds to provide that match and provide \$5,000 in kind support in the form of staff time.

N. Proposed Summary Budget – Attached

O. Proposed Budget:

This project will cost \$80,000 and will include federation staff time and expenses to conduct stakeholder meetings and engagement as well as technical analysis and plan writing. The federation's budget covers travel, hiring a GIS contractor for the watershed analysis; and the design and printing of outreach materials and will be at a total contract price of \$75,000. Please see Appendix F: Breakdown of Costs. The remaining \$5,000 will come in the form of in kind support from Hyde County in the form of staff time.

P. Project Timeline:

The project will begin in June 2017. All project activities to complete the draft plan will be met by June 2018. A further breakdown of the project timeline can be found in Appendix G: Project Schedule and Activities.

Please note: The final plan will be complete in October 2018 and will be sent to NC DCM.

Q. Project Reporting Periods – Attached

Appendix A:

Report from USFWS

Hydrologic information from Hurricane Matthew, 10/25/2016, M. Moorman, Draft

****Provisional data only. All estimates are calculated from data that was collected during Hurricane Matthew or as part of other monitoring programs. All calculations may have significant error associated with them, but do have value in providing an idea of the order of magnitude associated with various components of the water budget.*

Introduction

Lake Mattamuskeet is the largest natural lake in North Carolina. Located in Hyde County on the Albemarle-Pamlico peninsula, this lake is part of the Mattamuskeet National Wildlife Refuge and is managed by the U.S. Fish and Wildlife Service to attract and provide habitat for migratory waterfowl utilizing the Atlantic Flyway. The average depth of Lake Mattamuskeet is three feet and the lake bottom is below sea level. Water inflow is dominated by precipitation and outflow is dominated by evaporation. Additional inflows into the lake include agricultural drainage ditches connected to the lake. Additional outputs from the lake include four outflow canals. One canal (Rose Bay Canal) is located on the western side of the lake and three are located on the eastern side (Outfall Canal, Lake Landing Canal and Waupoppin Canal, Figure 1). Throughout the history of the Refuge, the Refuge has preferred lower lake levels during the summer. This provides two benefits, 1) it promotes growth of submerged and emergent vegetation, primary waterfowl foods, in Lake Mattamuskeet, and 2) it provides more capacity for incoming runoff during storm events that drop large amounts of rainfall.

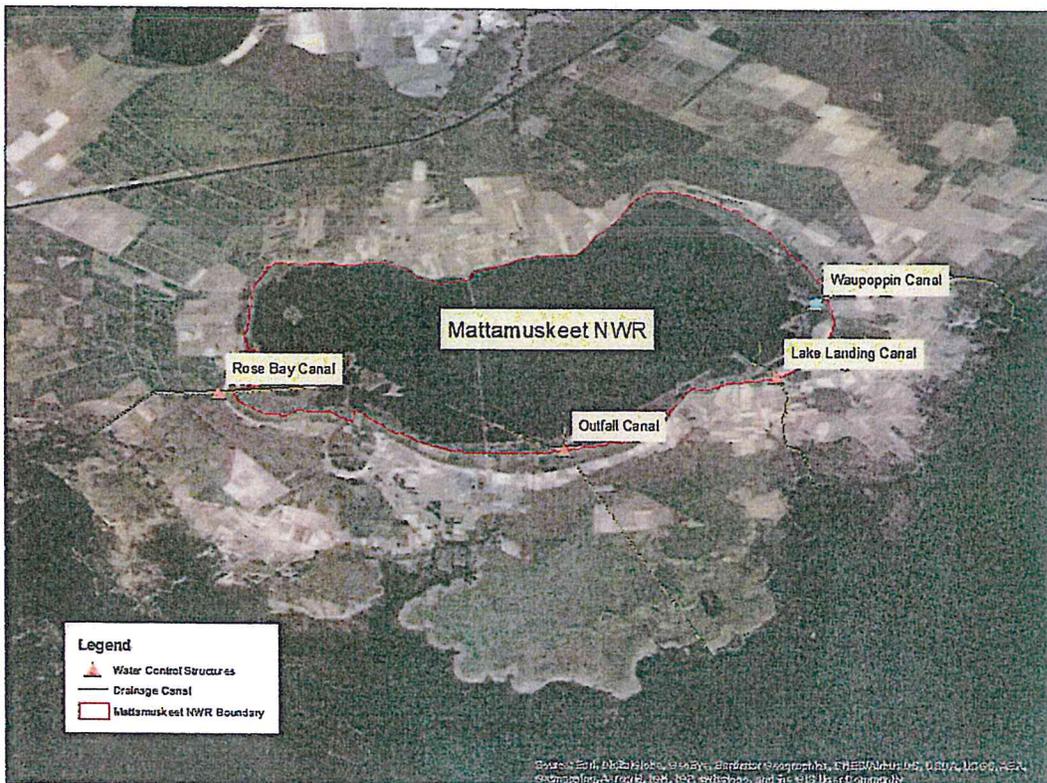


Figure 1. Map of Mattamuskeet NWR and adjacent lands, including the location of the outfall canals that connect the lake to the Pamlico Sound and flap gates managed by Mattamuskeet NWR.

Flap gates were installed by the U.S. Fish and Wildlife Service at the four outfall canals connecting Lake Mattamuskeet to the Pamlico Sound. The structures are designed so they open automatically as a result of positive pressure when water levels are higher in the lake than the Pamlico Sound. The lake bed is below Mean Sea Level which means that water in the canals would be bi-directional if no flap gates existed. This would result in higher water levels and salinities in the lake if no flap gates were present. The Refuge has been closely monitoring water levels and salinity in the lake and at the flap gates since 2013, but historic data does exist for the Refuge. Since improvements were made to leaky gates in 2013 (East Side) and 2014 (Rose Bay), minimal leakage has been observed at the water-control structures and salinities in the lake and canals have decreased. During storm events, wind tides can cause especially high water levels in the Pamlico Sound. When water levels in the Pamlico Sound increase above ~1.4 ft and canal water levels are above 1.3 ft on the North American Vertical Datum of 1988 (NAVD88 datum), water will come over the flap gates at Rose Bay and Lake Landing canals, but the amount of water is minimal compared to the volume of water in the lake.

Hydrology during Hurricane Matthew

Hurricane Matthew passed by the coast of North Carolina on October 2, 2016. During this period, the USGS rain gage on Highway 94 recorded over 8 inches of rain (Fig. 2). The weather station at Fairfield recorded 8.73 inches during that same period. These large amounts of rain come following one of the wettest years on record with over 70 inches of rain falling since last October. . During the passing of Hurricane Matthew, USGS monitoring stations on the lake showed that lake levels rose from 1.1 to 1.7 ft above the NAVD88 datum (Fig. 3). These are the highest water levels that we have observed since we began monitoring water levels continuously since October of 2013. Additionally, these are some of the highest water levels observed in the lake based on a review of recorded lake water levels from Refuge archives. This suggests that the water levels in the lake now represent extreme conditions, but moving forward climate experts suggest we plan for the extremes rather than the norm. Appendix A provides hydrographs for Swanquater from Hurricanes Matthew and Irene.

This seven-inch increase in lake level added an estimated 24,000 acre feet of water to the lake as a result of Hurricane Matthew rainfall bringing the total volume of the lake to 194,000 acre feet. Salinities remained relatively constant during this period (0.6 parts per a thousand). Some concern was expressed about the water coming in over the flap gates at Rose Bay and Lake Landing. This occurs when water levels are high enough in the Sound that the water flows over the flap gates (at ~1.3 ft). Our discharge estimates suggest that approximately 25 acre-feet a day was flowing from the Sound back to the lake at Rose Bay and 16 acre-feet a day was flowing from the Sound back toward the lake at Lake Landing during the period of Oct. 9 to October 14 when water levels in the Pamlico Sound were above 1.4 feet. This represents a total of 705 acre-feet of water. This is 0.03% of the total volume of water that fell into Lake Mattamuskeet during the storm. On October 14, 2016, water levels in the Pamlico Sound dropped low enough to create a positive pressure from the lake to the Sound and the flap gates opened at Lake Landing, Waupoppin, and Outfall Canal and water began to flow from the lake towards

the Sound. On October 14, no noticeable discharge was flowing toward the lake from Rose Bay and on October 17, the flap gates at Rose Bay also opened and water was draining from the lake to the Sound at Rose Bay (Table 1). Discharge from the lake to the Sound varies based on the difference between the lake levels between the lake and the sound and winds, but our best estimate of the maximum discharge that the canals can convey is approximately 700 acre feet per day. At that rate, it may take as long as 34 days for lake levels to drop to pre-Hurricane Matthew levels. This number does not account for the water draining to the lake from upstream properties, any additional rainfall or evapotranspiration.

Table 1. Estimates of Lake volumes, estimates of water flowing in through flap gates during high wind tides, lake water volume increases from rainfall during Hurricane Matthew, and estimates of the max daily discharge leaving through the canals.

Total Lake Volume following Matthew (Acre Feet)	Estimate of water flowing from Lake Landing to lake, Oct.9-14 (ac-ft).	Estimate of water flowing from Rose Bay to lake, Oct. 9-14 (ac-ft).	Estimate of volume of rainfall from Hurricane Matthew (ac-ft)	Estimated max discharge out canals (ac-ft a day)
194,000	80	125	24000	700

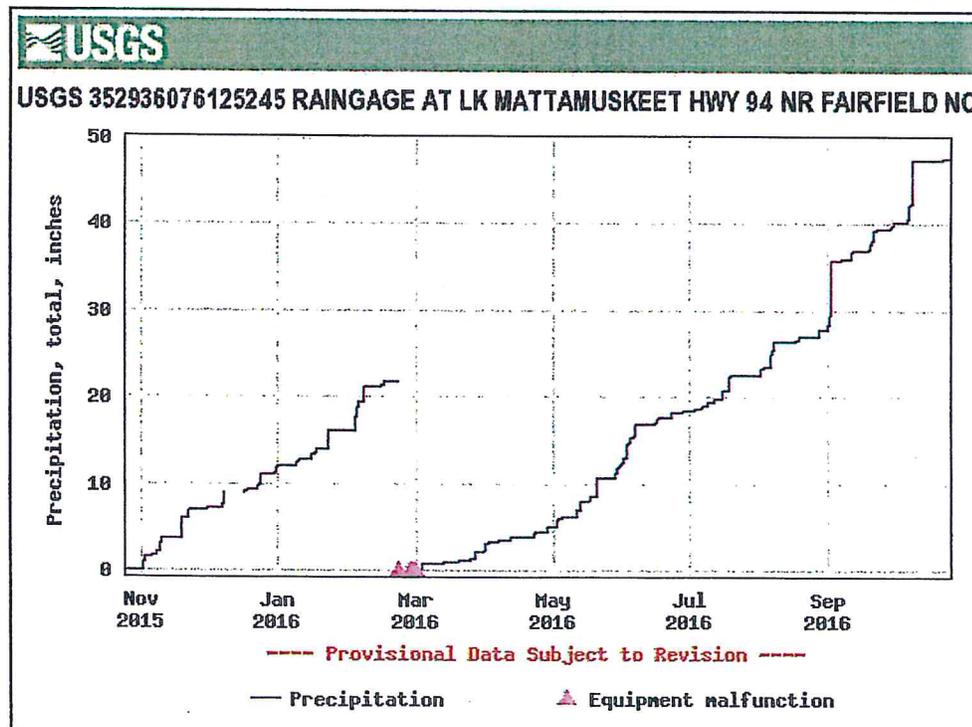


Figure 2. Rainfall totals at USGS raingage between October 25, 2015 and October 25, 2016. 8 inches fell during Hurricane Matthew, this was in addition to the 70+ inches that has fallen since last October.

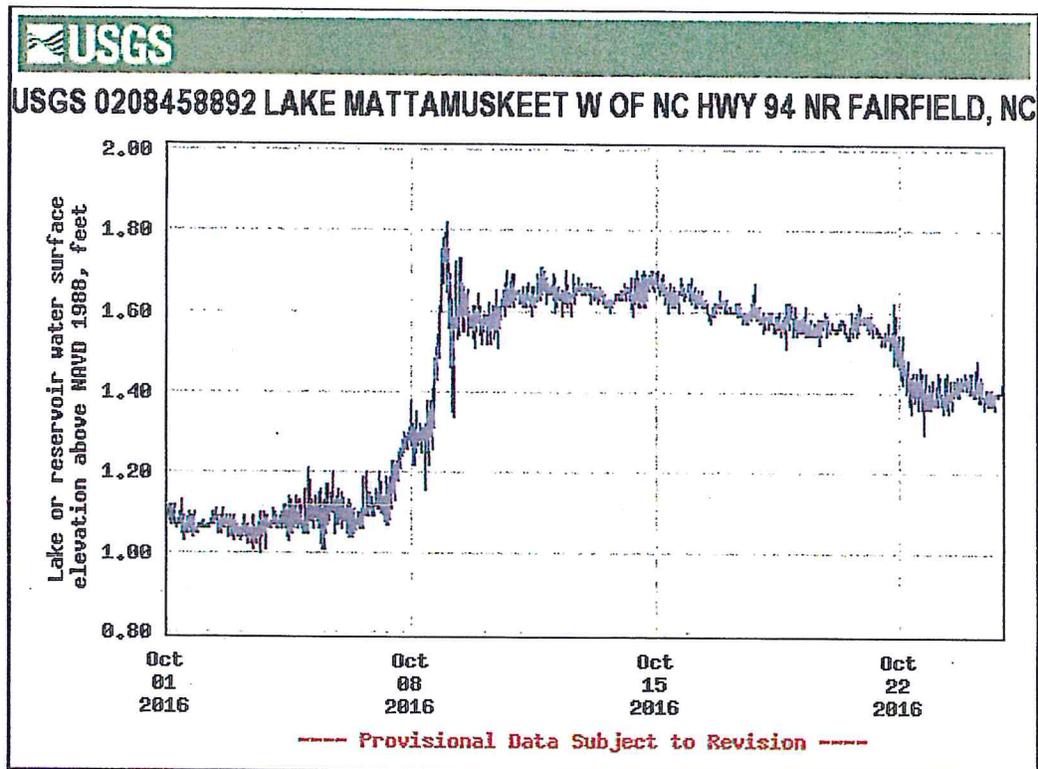


Figure 3. Lake Water Levels during Hurricane Matthew. Water levels peaked at 1.8 ft. during

RATIO STUDY SHEET

COUNTY: _____

TOWNSHIP NUMBER: _____

DEED BOOK & PAGE NUMBER: _____ / _____

GRANTOR: _____

GRANTEE: _____

PROPERTY DESCRIPTION: _____



PARCEL I.D. NUMBER: _____

SALE PRICE: _____

STAMPS: _____

SALE PRICE VERIFIED BY CONFIRMATION LETTER: YES _____ NO _____

SALE DATE: _____

ASSESSED VALUE: _____

CHECK ONE OF THE FOLLOWING:
SPLIT _____
STRAIGHT TRANSFER _____

PROPERTY TYPE

	VACANT	IMPROVED
RESIDENTIAL	_____	_____
AGRICULTURAL	_____	_____
COMMERCIAL	_____	_____
INDUSTRIAL	_____	_____

REJECTION CODE

Enter the appropriate code if this deed was rejected pursuant to the information obtained from the property record card.

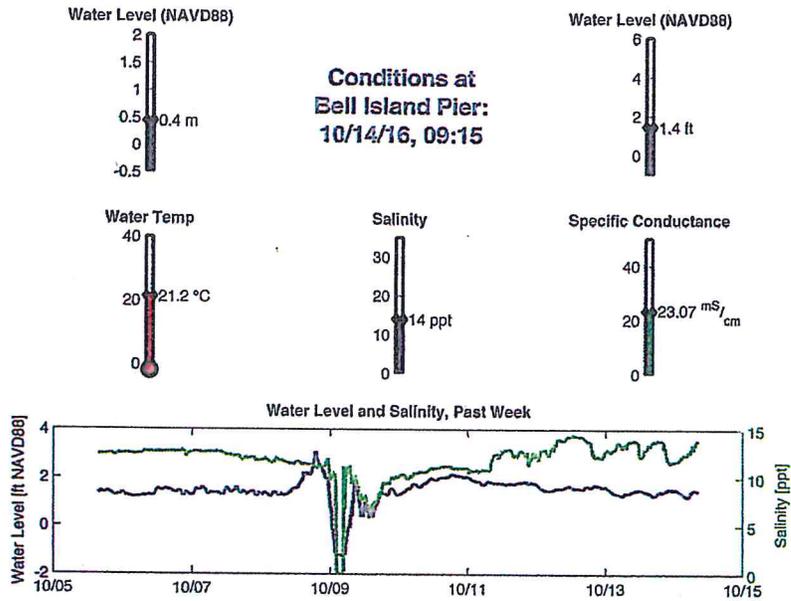
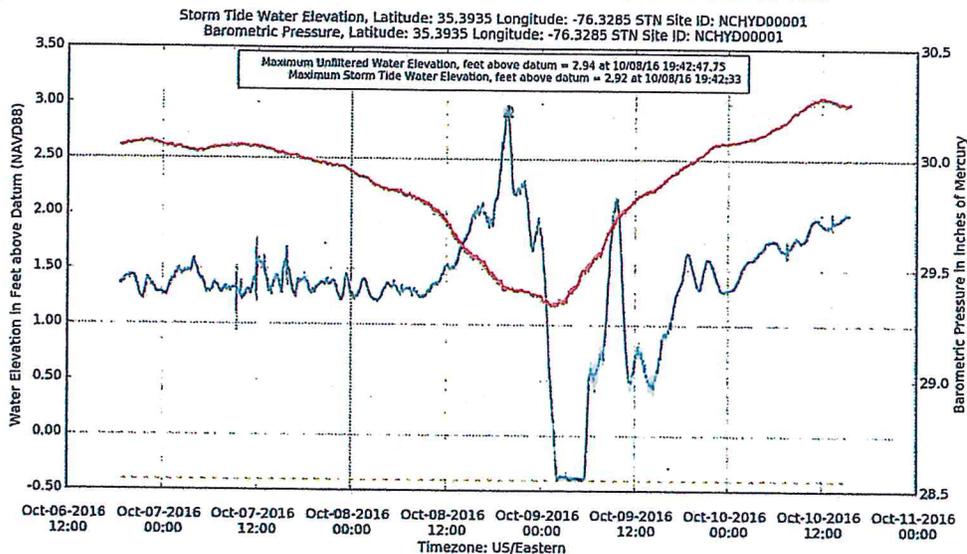


Figure 4. Water levels at Bell Island Pier during and Following Hurricane Matthew.

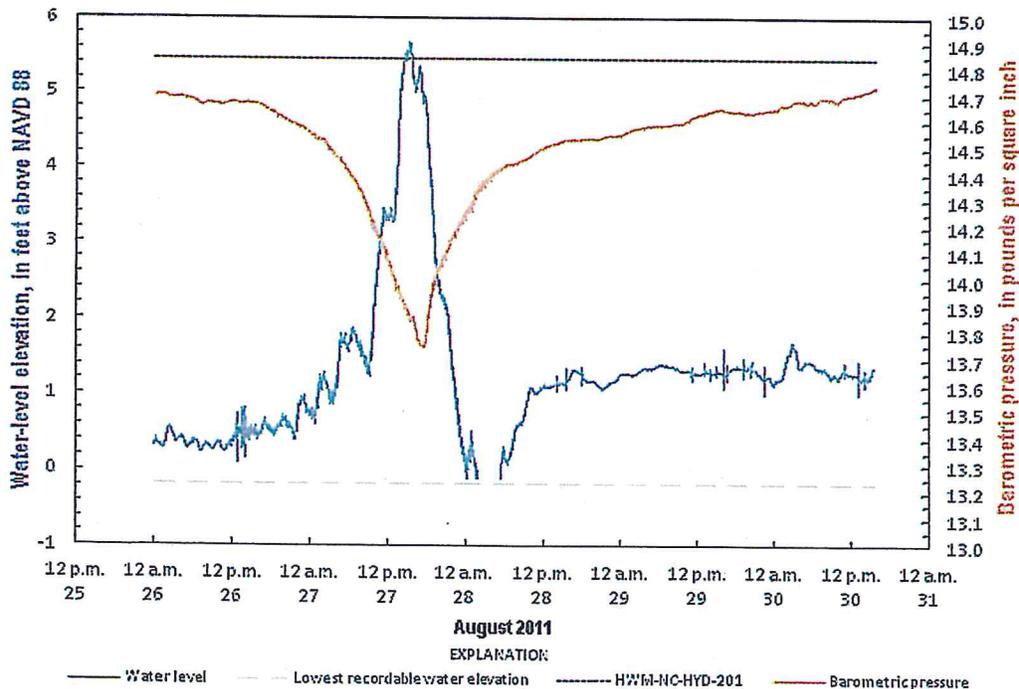
Appendix A. Water levels recorded by the USGS in the Pamlico Sound at the ferry terminal during hurricane Matthew and Hurricane Irene. Peak water levels reached 2.92 and ~5.5 ft (NAVD 88), respectively.



- EXPLANATION**
- Unfiltered Water Elevation
 - Storm Tide (Lowpass Filtered) Water Elevation
 - - - Minimum Recordable Water Elevation
 - Barometric Pressure
 - Maximum Unfiltered Water Elevation
 - ▲ Maximum Storm Tide Water Elevation



SSS-NC-HYD-001WL



Appendix B:

Memorandum of Agreement

Agreement to Write a Watershed Restoration Plan for Lake Mattamuskeet

MEMORANDUM OF AGREEMENT

AGREEMENT TO WRITE A WATERSHED RESTORATION PLAN FOR LAKE MATTAMUSKEET

This agreement is made and entered into this the ___ day of May, 2017, by and between the **NORTH CAROLINA COASTAL FEDERATION**, hereinafter referred to as the **FEDERATION**, the **UNITED STATES FISH AND WILDLIFE SERVICE**, hereinafter referred to as **USFWS**, the **NORTH CAROLINA WILDLIFE RESOURCES COMMISSION**, hereinafter referred to as **NCWRC**, and the **COUNTY OF HYDE, NORTH CAROLINA**, hereinafter referred to as the **COUNTY**.

I. PURPOSE OF THE AGREEMENT

It is mutually agreed that the **FEDERATION** will cooperate with the **USFWS**, the **NCWRC**, and the **COUNTY** to produce a watershed restoration plan for Lake Mattamuskeet, located in Hyde County, North Carolina.

II. RESPONSIBILITIES

a. The **FEDERATION** agrees to:

- i. Work cooperatively with the **USFWS**, the **NCWRC** and the **COUNTY** to produce a voluntary watershed restoration plan (hereinafter referred to as the "Plan") for Lake Mattamuskeet (hereinafter referred to as "the Lake"). This nine-element plan will follow guidelines approved by the U.S. Environmental Protection Agency (hereinafter referred to as "EPA"), and will include the following components:
 1. *Identification of impairment, pollutant, causes and sources of pollution that need to be controlled. Pollution sources that need control measures should include estimates of their presence in the watershed.*
 2. *Identification and detail of reduction load and the measures necessary to meet water quality standards/goals.*
 3. *Details of management activities and the expected outcome.*
 4. *Identification of technical and financial assistance needed to implement outlined management activities. Additional details of long-term operation and maintenance measures are required.*
 5. *Education and information plan for the Lake watershed.*
 6. *Implementation schedule for actions listed in plan.*
 7. *Outline of measurable milestones to ensure plan benchmarks are met.*
 8. *Indicators that measure progress toward meeting watershed goals (including bacterial count, or indirect measurements).*
 9. *Monitoring component to evaluate the effectiveness of the plan.*
- ii. Help convene an inclusive group of **core stakeholder** members and **technical advisory** members as identified by Hyde Soil and Water, the **COUNTY**, **USFWS** and **NCWRC**. The **FEDERATION** will organize these quarterly stakeholder group meetings, presentations and materials. The **FEDERATION** will additionally organize quarterly public meetings in cooperation with the **USFWS**, the **NCWRC**, and the **COUNTY** to communicate the progress of the watershed restoration plan.

- iii. Compile and summarize past and current accounts and research related to water quality and quantity issues at the Lake. This includes historical and colloquial descriptions of land use changes over time, as well as technical and management assessment of water quality and quantity issues at the Lake conducted by university or other researchers.
 - iv. Research and develop possible solutions for addressing water quality and quantity concerns in the Lake. The FEDERATION will incorporate input from both core stakeholders and technical advisors.
 - v. Analyze impact of proposed solutions to address water quality and quantity concerns in the Lake, as well as future hydrologic conditions of various proposals that are implemented. The FEDERATION will facilitate ranking the importance and priority of possible solutions using input from technical advisors and the public. Final ranking and implementation decisions being made by the core stakeholder group.
 - vi. Design and distribute outreach materials to announce the following: a) Date, time and location of quarterly public meetings to explain progress on the Plan; b) Summary document explaining process, solutions, stakeholder process, and future plans.
- b. The USFWS agrees to:
- i. Through Notice of Cooperative Agreement Award No _____, fund 40% of the total cost of the Plan, not to exceed \$30,000.00. Invoices shall be paid within 30 days of receipt.
 - ii. Identify a point of contact for plan development and project administration.
 - iii. Assist in advertising public meetings notices.
 - iv. Assist in identifying and synthesizing all known research about the Lake and provide a briefing to FEDERATION staff on any ongoing Lake research as well as current status and trends.
 - v. Communicate in a timely and effective manner throughout the duration of the plan development.
- c. The NCWRC agrees to:
- i. Fund 40% of the total cost of the Plan, not to exceed \$30,000.00. Invoices shall be paid within 30 days of receipt.
 - ii. Identify a point of contact for plan development and project administration.
 - iii. Communicate in a timely and effective manner throughout the duration of the plan development.
- d. The COUNTY agrees to:
- i. Fund 20% of the total cost of the Plan, not to exceed \$15,000.00. Invoices shall be paid within 30 days of receipt.
 - ii. Identify a point of contact for plan development and project administration.
 - iii. Communicate in a timely and effective manner throughout the duration of the plan development.

III. TERMINATION

This agreement may be terminated by mutual written agreement or with written consent by all parties at least 120 days in advance of the date on which termination is to become effective.

IV. TERM OF AGREEMENT

This agreement shall become effective upon full execution and shall remain effective for a period of eighteen (18) months. This agreement will have an option for renewal for a period of eighteen (18) months, upon expiration, upon written agreement of all parties.

V. BUDGET and PAYMENT

The total budget for Lake Mattamuskeet Watershed Restoration Plan shall not exceed \$75,000. The total cost will be shared between the USFWS, the NCWRC, and the COUNTY, as indicated in section II.

Salary & benefits	\$53,000.00
Coastal Advocate/Contractor	1200 hrs
Executive Director	240 hrs
Coastal Scientist	120 hrs
Communications Specialist	80 hrs
Finance Manager	20 hrs
Finance and Operations Director	30 hrs
Travel	\$3,800
Mileage (bimonthly round trip travel and quarterly meetings)	\$3,100
Lodging/Per Diem (quarterly mtgs)	\$700
Supplies	\$4,700
Meeting Supplies	\$1,000
Design/Layout/Printing of Publications	\$2,500
Outreach/interview supplies (audio recorder, other)	\$1,200
Contract	\$13,500.00
Consultant for Watershed Analysis/BMP design	
TOTAL	\$75,000.00

The FEDERATION shall submit quarterly invoices for payment to the three funding partners. Invoices shall include expenses per the approved budget line items and be sent to:

U.S. Fish and Wildlife Services 85 Mattamuskeet Rd	N.C. Wildlife Resources Commission 132 Marine Drive	Hyde County 30 Oyster Creek PO Box 188
Swan Quarter, NC 27885 Pete_campbell@fws.gov Attn: Pete Campbell	Edenton, NC 27932 Doug.howell@ncwildlife.org Attn: Doug Howell	Swan Quarter, NC 27885 brich@hydecourtync.gov Attn: Bill Rich

VI. COMMUNICATIONS PLAN

The FEDERATION will work with the other funding partners to form a core project team. It will organize and hold quarterly meetings of the core project team to plan project activities, review progress made and to assist in community outreach. The core team will be responsible for reviewing and editing drafts of the plan, identifying data sources, helping to ensure that the plan is accurate and assisting with community outreach. In addition to the work of the core project team, the FEDERATION will:

- 1) Develop and use three email lists:
 - i) one of the core project team
 - ii) one for technical advisors and
 - iii) one for interested community stakeholders
- 2) Develop and distribute two press releases after being reviewed and approved by the project partners (COUNTY, USFWS and NCWRC). One will explain the project and promote the first public meeting for the plan development and one to present the draft plan for feedback.
- 3) Develop and maintain a web page about the project and the plan, to be hosted and maintained by the FEDERATION and linked to the COUNTY, NCWRC and USFWS websites.
- 4) Public meetings will be advertised via press release and circulated to maintained email lists at least two weeks prior to scheduled meeting.
- 5) Meeting agenda, notes and presentations will be posted to website no more than two weeks after meeting is held.
- 6) Draft the watershed restoration plan. The plan will be designed/laid-out by the FEDERATION and made available in an electronic form to the public and in printed form for core project members and anyone from the public that requests a printed copy.
- 7) Develop and distribute 1,000 copies of a flyer summarizing the plan and where the full plan can be viewed.
- 8) Recognize all partners in all communications materials.
- 9) Illustrate the plan with maps, graphic and photos as needed.

VII. TIMELINE

The plan development will take approximately 18 months and will follow this general project timeline.

May 1, 2017	Project Commences, Press Release Announcing Plan Development
June/July 2017	Quarterly Public Meeting
August 15, 2017	Quarterly Invoice (Invoice-May 1-July 31, 2017)
September/October 2017	Quarterly Public Meeting
By November 15, 2017	Quarterly Invoice (Aug 1- Oct 31, 2017), Semi annual report (May 1- Oct 31, 2017)
December/January 2018	Quarterly Public Meeting
February 15, 2018	Quarterly Invoice (Nov 1, 2017- Jan 31, 2018)
March/April 2018	Quarterly Public Meeting
By May 15, 2018	Quarterly Invoice (Feb 1- Apr 30, 2018) Semi annual report (Nov 1, 2017-Apr 30, 2018)
June/July 2018	Quarterly Public Meeting, Draft Plan and Implementation Discussed
August 15, 2018	Quarterly Invoice (May 1- July 31, 2018)
September 2018	Quarterly Public Meeting- Final Plan and Prioritized Implementation Presented, Draft Plan Outreach materials
October 2018	Final Written Plan and Outreach materials, Final Press Release
By November 15, 2018	Final Invoice (Aug-Oct 31, 2018) and Final Report (May 1-October 31, 2018)

Ownership of Documents/Data

Any reports, studies, photographs (and negatives), computer programs and data, drawings, writings or other similar works or documents along with all supporting data and material, produced under this contract are the joint property of the FEDERATION and the COUNTY and are to be delivered to all parties at the end of the contract. These materials and data become public information once they are sent to government agencies.

Confidentiality

Project materials that are working drafts being researched and developed by the FEDERATION are confidential. Once materials are provided to the COUNTY, USFWS or NCWRC for their review and consideration they become public information. Data collected from human subjects under procedures approved by the ECU Institutional Review Board (IRB) are exempted. Storage and dissemination of these data will be governed by the guidelines defined by the IRB; these data will remain confidential and under the control of the originating researcher.

Notices

Any notice required by this agreement shall be sent Certified Mail, return receipt requested, to the parties listed below.

Binding Effect/Amendments

This agreement shall become binding when signed by the parties. This agreement contains the entire agreement of the parties and no amendment shall be effective except in writing signed by all parties.

Equal Opportunity

1. The non-discrimination clause contained in Section 202 (federal) Executive Order 11246, as amended by Executive Order 11375, relative to Equal Employment Opportunity for all persons without regard to race, color, religion, sex or national origin, and the implementing rules and regulations prescribed by the Secretary of Labor, are incorporated herein.
2. The FEDERATION, USFWS, NCWRC, and the COUNTY agree not to discriminate against any employee or applicant for employment because of physical or mental handicap in regard to any position for which the employees or applicant is qualified. All named parties agree to take affirmative action to employ, advance in employment and otherwise treat qualified handicapped individuals without discrimination based upon their physical or mental handicap in all employment practice.

Terms and Conditions

1. **ACCESS TO PERSONS AND RECORDS:** During and after the term hereof, the State Auditor and any using agency's internal auditors shall have access to persons and records related to this Contract to verify accounts and data affecting fees or performance under the Contract.
2. **AVAILABILITY OF FUNDS:** Any and all payments to the FEDERATION are dependent upon and subject to the availability of funds to the USFWS, NCWRC, and the COUNTY for the purpose set forth in this agreement.
3. **COMPLIANCE WITH LAWS:** the FEDERATION, USFWS, NCWRC, and the COUNTY will comply with all laws, ordinances, codes, rules, regulations, and licensing requirements that are applicable to the conduct of its business and performance in accordance with this contract, including those of federal, state, and local agencies having jurisdiction and/or authority.

Certifications: the FEDERATION, USFWS, NCWRC, and the COUNTY certifies to each of the following:

1. That none of its officers, directors, or controlling owners has been convicted of any violations of state or federal securities act violations in the last ten years;
2. That it has not refused to collect Use tax on sales delivered to North Carolina, and it is not incorporated in a tax haven county;
3. That no employee or agent of the FEDERATION, USFWS, NCWRC, and the COUNTY, has offered, and no State employee has accepted, any gift or gratuity in connection with this contract; and
4. That the FEDERATION, USFWS, NCWRC, and the COUNTY having more than 25 employees in North Carolina, verifies the work authorization of such employees through the federal E-Verify System;
5. That the FEDERATION, USFWS, NCWRC, and the COUNTY is not identified on the Final Divestment List of entities that the North Carolina State Treasurer has determined engages in investment activities in Iran. This list is available at: <https://www.nctreasurer.com/inside-the-department/OpenGovernment/Pages/Iran-Divestment-Act-Resources.aspx>.

Governing Laws

This Contract is made under and shall be governed, construed, and enforced in accordance with the laws of the State of North Carolina, without regard to conflict of laws rules, and within such State shall all matters, whether sounding in Contract or tort or otherwise, relating to its validity, construction, interpretation and enforcement be determined.

IN TESTIMONY WHEREOF, this Memorandum of Agreement has been executed by the parties hereto, in duplicate originals, as of the date first above written.

The signatures below indicate approval of this agreement.

Todd Miller, Executive Director
North Carolina Coastal Federation

Date: _____

David Viker, Chief of Refuges
United States Fish & Wildlife Service

Date: _____

Gordon Myers, Executive Director
North Carolina Wildlife Resources Commission

Date: _____

Bill Rich, County Manager
Hyde County, North Carolina

Date: _____

Earl Pugh, Jr., Chairman
Hyde County Board of Commissioners

Date: _____

Appendix C:

RESOLUTION EXPRESSING SUPPORT FOR THE US FISH AND WILDLIFE SERVICE'S PROPOSED PLAN TO COOPERATIVELY ADDRESS LAKE MATTAMUSKEET WATER ISSUES



**BOARD OF COMMISSIONERS
OF THE COUNTY OF HYDE
NORTH CAROLINA**

RESOLUTION

**RESOLUTION EXPRESSING SUPPORT FOR THE US FISH AND WILDLIFE SERVICE'S (FWS)
PROPOSED PLAN TO COOPERATIVELY ADDRESS LAKE MATTAMUSKEET WATER ISSUES**

WHEREAS, the Hyde County Board of Commissioners acknowledge that the Mattamuskeet National Wildlife Refuge, including Lake Mattamuskeet, is one of the premier waterfowl wintering areas in the Eastern Flyway and an important natural, cultural and economic asset for the County and its residents; and,

WHEREAS, the Hyde County Board of Commissioners acknowledge that the natural resources of Mattamuskeet National Wildlife Refuge and Lake Mattamuskeet attract thousands of people from North Carolina and surrounding states each year to enjoy outdoor recreational activities such as hunting, fishing, crabbing and waterfowl observation; and,

WHEREAS, the Hyde County Board of Commissioners acknowledge that over time the water quality in Lake Mattamuskeet has been significantly degraded causing a significant loss of vegetation which is the foundation of the aquatic community supporting both waterfowl and the lake's recreational fisheries; and,

WHEREAS, the Hyde County Board of Commissioners acknowledge that if the water quality in Lake Mattamuskeet continues to degrade it will result in additional losses of the remaining aquatic vegetation sufficient in scope to cause waterfowl to seek other wintering grounds and the recreational fisheries to further decline resulting in a negative impact to the economy of the County and the recreational enjoyment of its residents; and,

WHEREAS, the FWS has met with representatives from the Hyde County Board of Commissioners and the North Carolina Wildlife Resources Commission to discuss a cooperative undertaking that seeks to identify the causes of the lake's degraded water quality, which is impacting the extent of both waterfowl and fishery habitat in the lake, and to develop adaptive management strategies, based on sound science, to improve water quality and water management in the lake in concert with the mission of the Refuge for the benefit of the resource and the general public,

NOW THEREFORE, BE IT RESOLVED THAT the Hyde County Board of Commissioners endorse the FWS proposal to partner with Hyde County, appropriate federal and state agencies and other contributing entities in a cooperative venture to improve conditions in Lake Mattamuskeet and further agrees to support, through appropriate avocation, the FWS in securing the necessary resources required to fund appropriate scientific investigations and the development and implementation of a Comprehensive Water Management Plan designed to restore the health and integrity of Lake Mattamuskeet over time.

Duly adopted this the 3rd day of September, 2013. Attested by:

Barry Swindell, Chairman
Hyde County Board of Commissioners

Averil Simmons, Deputy Clerk to the Board
Hyde County Board of Commissioners

Appendix D:

**HYDE COUNTY BOARD OF
COMMISSIONERS RESOLUTION IN
SUPPORT OF A N.C. DIVISION OF COASTAL
MANAGEMENT LOCAL PLANNING AND
MANAGEMENT GRANT PROGRAM GRANT
APPLICATION 2017-2018**

COUNTY OF HYDE

Board of Commissioners

Earl Pugh, Jr., Chair
Barry Swindell, Vice-Chair
Benjamin Simmons, III
Tom Pahl
Dick Tunnell

30 Oyster Creek Road
PO Box 188
SWAN QUARTER, NORTH CAROLINA 27885
252-926-4400
252-926-3701 Fax

Bill Rich
County Manager

Fred Holscher
County Attorney

Lois Stotesberry, CMC, NCCCC
Clerk to the Board



HYDE COUNTY BOARD OF COMMISSIONERS RESOLUTION IN SUPPORT OF A N.C. DIVISION OF COASTAL MANAGEMENT LOCAL PLANNING AND MANAGEMENT GRANT PROGRAM GRANT APPLICATION 2017-2018

WHEREAS, the Hyde County Board of Commissioners acknowledge that over time the water quality in Lake Mattamuskeet has been significantly degraded causing a significant loss of vegetation which is the foundation of the aquatic community supporting both waterfowl and the lake's recreational fisheries; and,

WHEREAS, the FWS has met with representatives from the Hyde County Board of Commissioners and the North Carolina Wildlife Resources Commission to discuss a cooperative undertaking that seeks to identify the causes of the lake's degraded water quality, which is impacting the extent of both waterfowl and fishery habitat in the lake, and to develop adaptive management strategies, based on sound science, to improve water quality and water management in the lake in concert with the mission of the Refuge for the benefit of the resource and the general public; and

WHEREAS, the Hyde County Board of Commissioners has endorsed the FWS proposal to partner with Hyde County, appropriate federal and state agencies and other contributing entities in a cooperative venture to improve conditions in Lake Mattamuskeet and further has agreed to support, through appropriate avocation, the FWS in securing the necessary resources required to fund appropriate scientific investigations and the development and implementation of a Comprehensive Water Management Plan designed to restore the health and integrity of Lake Mattamuskeet over time; and,

WHEREAS, the North Carolina Division of Coastal Management offers a Local Planning and Management Grant Program for the 2017-2018 funding cycle to fund

local planning and management projects for the 20 coastal counties including Hyde County; and,

NOW THEREFORE, BE IT RESOLVED THAT, the Hyde County Board of Commissioners supports the NC Division of Coastal Management Local Planning and Management Grant Application 2017-2018 entitled “Mattamuskeet Watershed Planning”.

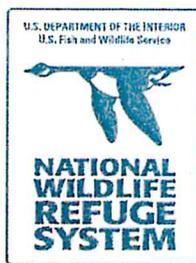
Adopted this the 1st day of May, 2017.

Earl Pugh, Jr., Chairman
Hyde County Board of Commissioners

Lois Stotesberry,
Clerk to the Board

Appendix E:

Public Meeting to Discuss Lake Mattamuskeet Watershed



Media contact: Pete Campbell
Michelle Moorman
U.S. Fish and Wildlife Service
252-926-4021

FOR IMMEDIATE RELEASE

Public Meeting to Discuss Lake Mattamuskeet Watershed

SWAN QUARTER, N.C. (Jan. 6, 2017) — The U.S. Fish and Wildlife Service, N.C. Wildlife Resources Commission, Hyde County Soil and Water Board and Hyde County commissioners will host a public meeting on Jan. 31, 2017 to discuss a stakeholder-driven planning process for the Lake Mattamuskeet watershed. The meeting will occur at 7 p.m. in the Mattamuskeet High School cafeteria located at 20392 U.S. 264 in Swan Quarter.

This meeting will update local stakeholders on the status of the Lake Mattamuskeet watershed planning process. Dr. Randall Etheridge will present results from his watershed study and solicit feedback from participants. Representatives will be available to answer questions regarding upcoming research projects and programs and will seek input from attendees regarding planning for the watershed. Stakeholder input is an essential step in the planning process. Refreshments will be provided.

About the U.S. Fish and Wildlife Service

The U.S. Fish and Wildlife Service is the principal federal agency responsible for conserving, protecting and enhancing fish, wildlife and plants and their habitats for the continuing benefit of the American people. For more information on their work and the people who make it happen, visit www.fws.gov/southeast.

About the N.C. Wildlife Resources Commission

Since 1947, the N.C. Wildlife Resources Commission has been dedicated to the conservation and sustainability of the state's fish and wildlife resources through research, scientific management, wise use, and public input. The Commission is the state regulatory agency responsible for the

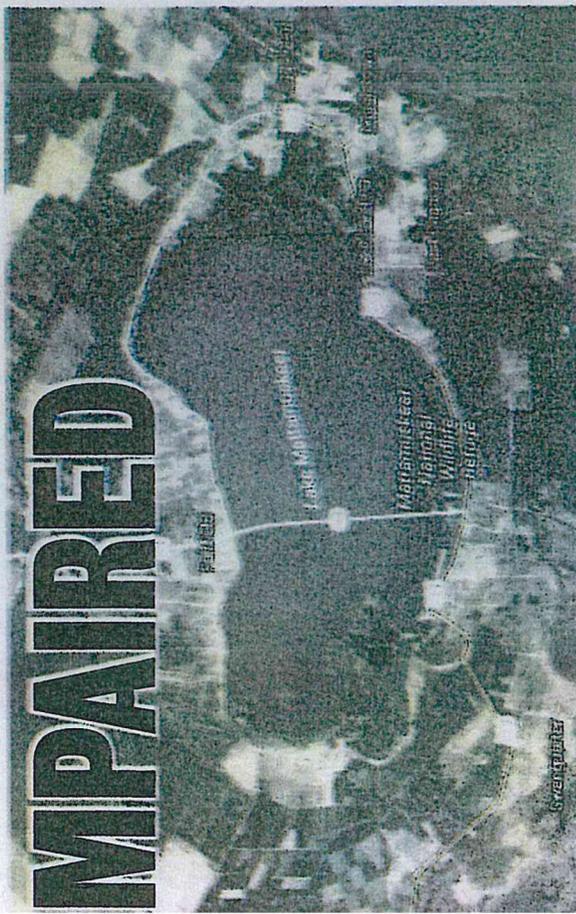
enforcement of fishing, hunting, trapping and boating laws and provides programs and opportunities for wildlife-related educational, recreational and sporting activities. To learn more, visit www.newildlife.org.



Appendix E:

Press

IMPAIRED



GREENSPRINTER

GOOGLE MAPS

Groups look to correct Mattamuskeet water quality

COLINE HUDSON
ton Daily News

E COUNTY — A watershed for Lake Mattamuskeet is its first steps in getting off the ground, according to Michelle Man, field biologist with the North Carolina Wildlife Service.

Man said she will be at a public meeting Tuesday at 7 p.m. at the Mattamuskeet National Wildlife Refuge. She said she will be speaking with USFWS and the North Carolina Wildlife Resources Commission about the watershed plan, which she said is the first step in a plan to promote water quality in Lake Mattamuskeet, she said.

The Environmental Protection Agency designated the lake as an "impaired water body," meaning it is too polluted for its intended use. Officials have noticed the significant decline in Mattamuskeet's submerged aquatic vegetation, brought on by an influx of phytoplankton and sediments, which reduce water clarity and bar sunlight from reaching the underwater grasses.

"Once the grass is gone, lake water quality continues to decline because the grasses are no longer there to anchor sediments to the bottom with their roots and to absorb the excess nutrients in the

lake," she said. Officials attribute this influx to a variety of factors, "including runoff from the surrounding farm fields and waterfowl impoundments draining to the lake, waterfowl feces and atmospheric deposition of nitrogen," according to the article.

The watershed plan is meant to correct this influx of harmful materials, according to Moorman, and prevent changes in water quality from harming other species in and around the lake.

"You can't address water quality without addressing hydrology," Moorman said. "It's a voluntary plan, but it's a response to this (im-

WATER:

Continued from 9

paired) listing."

Moorman said she thinks of the watershed plan process as similar to building a house. The process takes a long time, and tangible work can't begin until a blueprint, or plan, is put in place. A group of stakeholders was designated to represent landowners and researchers throughout the process, Moorman said.

She said N.C. Coastal Federation is also working to facilitate planning.

To cover the costs of bringing the plan to fruition, the organizations intend to rely on 319 funds, which are watershed restoration funds dispersed through the EPA and Clean Water Act, Moorman said.

Officials also hope to hold quarterly public meetings to keep residents informed about what is happening.

"It was kind of this joint concern that brought us all together," Moorman said.

WHERE HAS THE Grass Gone?

FACTORS IMPACTING SUBMERGED AQUATIC VEGETATION BRING TOGETHER PARTNERS AT MATTAMUSKEET NATIONAL WILDLIFE REFUGE

WRITTEN BY
DOUG LOWELL &
MICHELLE MOORMAN

THE GRASS HAS ALL BUT DISAPPEARED FROM LAKE MATTAMUSKEET, THE CENTERPIECE OF THE U.S. FISH AND WILDLIFE SERVICE'S (USFWS) MATTAMUSKEET NATIONAL WILDLIFE REFUGE (REFUGE). THE "GRASS," OFTEN REFERRED TO AS SUBMERGED AQUATIC VEGETATION (SAV), INCLUDES BEDS OF AQUATIC PLANTS LIKE WILD CELERY, REDHEAD GRASS, SAGO PONDWEED, SOUTHERN NAIAD, EURASIAN MILFOIL, MUSKGRASS AND NITELLA.

Located on the Albemarle-Pamlico Peninsula in eastern North Carolina, the Refuge was established to promote and maintain wetlands for migratory bird populations, specifically wintering waterfowl, as well as habitat for other wetland-dependent wildlife. Many of the Refuge wildlife and habitat conservation goals, outlined in its Comprehensive Conservation Plan, are supported by having grasses in the lake, as well as emergent vegetation around the lake shore. This vegetation provides key food resources for migratory birds, particularly waterfowl, as well as habitat for fish, crabs and other aquatic organisms.

Just how important is Lake Mattamuskeet and the Refuge to wintering waterfowl? Its strategic location along the Atlantic Flyway makes it a vitally important annual stopover site for hundreds of thousands of wintering ducks, geese and swans. Sportsmen and wildlife viewers alike, from all parts of the state and country, visit the Refuge and local area each year to hunt, fish, crab and observe

wildlife—activities that provide a vital economy to the region.

Why is the grass disappearing? The sudden decline of SAV on the east side of the lake, and the potential impact these declines could have, particularly to waterfowl, fish, and crabs, has alarmed natural resource managers from the USFWS and the North Carolina Wildlife Resources Commission (NCWRC).

"In 2014, a memorandum of understanding was signed by the USFWS and NCWRC to create the Mattamuskeet Collaboration Team for the purpose of co-managing more than a dozen projects aimed at addressing the health of Lake Mattamuskeet's ecosystem, identifying and prioritizing monitoring and research needs and opportunities for habitat restoration, as well as projects designed to increase the recreational value of the lake," said USFWS Southeast Region Director Cindy Dohner.

Since establishing the collaborative agreement, USFWS, NCWRC and other partner agencies and researchers have been studying

the ecology of Lake Mattamuskeet in order to better understand why SAV has declined.

"This collaborative agreement has allowed the two agencies to leverage more resources and accomplish much more than they could if they were addressing this difficult conservation challenge of restoring Lake Mattamuskeet alone," NCWRC Executive Director Gordon Myers said.

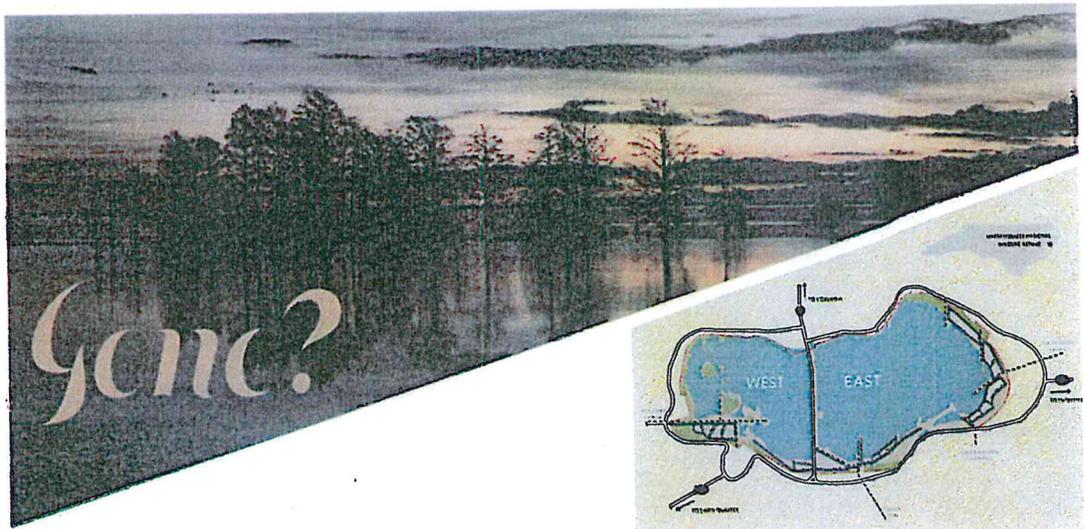
As part of the Mattamuskeet Collaboration Team, the Mattamuskeet Technical Working Group was formed and tasked with ensuring that the best available science is used for habitat restoration on the lake and surrounding watershed. The Mattamuskeet Technical Working Group is a multi-disciplinary team consisting of members from USFWS and NCWRC who have specific and extensive expertise in wildlife and fisheries management, water quality and environmental contaminants.

Based on results from an assessment of water-quality trends, we have concluded that

significant increases in nutrients and suspended sediments in the lake since the 1980s have caused an increase in harmful phytoplankton and a reduction in water clarity (eutrophication). As a result, the grass has declined from the deepest to the shallow areas of the lake. Many of the last beds of SAV are currently located in the calmer waters along the shallow, southern shores of Lake Mattamuskeet.

FIGHTING PHYTOPLANKTON

Lake Mattamuskeet is the largest naturally formed lake in North Carolina, with a surface area of approximately 40,000 acres. It is also very shallow with an average depth of just 2 feet. It is not the only shallow lake that has lost its grasses; other large, shallow lakes share similar histories. In theory, shallow lakes generally have two ecosystem states—one where phytoplankton is dominant or one where macrophytes dominate.



Phytoplankton are mostly microscopic, single-celled photosynthetic organisms that live suspended in the water, and include algae, diatoms and cyanobacteria. Macrophytes are aquatic plants (that include SAV) and grow in or near water and are either emergent, submerged or floating. Phytoplankton and macrophytes are considered primary producers because they use the process of photosynthesis to produce their own food while serving as food sources for animals further up the food chain.

Whether a lake is dominated by phytoplankton or SAV is important to resource managers because of the negative impacts that can occur. Dense communities of phytoplankton often result when there is too much sediment and too many nutrients like nitrogen and phosphorus in a water body. The combination of excess sediment and phytoplankton reduces water clarity, which reduces the amount of light in the water column available to SAV for photosynthesis. This causes the health and abundance of SAV to decline until the grass eventually disappears.

Once the grass is gone, lake water quality continues to decline because the grasses are no longer there to anchor sediments to the bottom with their roots and to absorb the excess nutrients in the water and sediment. Dense beds of SAV are desired at Lake Mattamuskeet because grasses maintain relatively clear water, can support fish and crab populations, and are attractive to waterfowl—many of which prefer to feed on aquatic vegetation or the aquatic invertebrates which live there. By contrast, a phytoplankton-dominated lake is not a preferred state because harmful algal blooms can occur and have adverse effects on fish and crab populations. This can also produce toxic cyanobacteria.

A HISTORY OF CHANGES

This isn't the first time in the history of the Refuge that SAV hasn't been present in Lake Mattamuskeet. The lake was refilled and established as Mattamuskeet National Wildlife Refuge in 1934 following a failed agricultural project that drained the lake three times in the early 1900s. At this time, no SAV was present and the lake had poor water

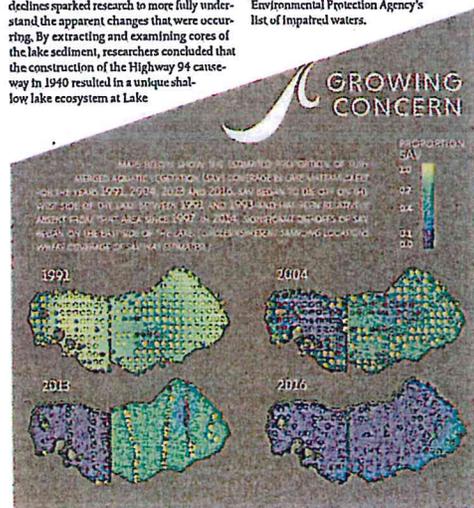
quality. Turbid water conditions prevailed in the lake until the 1950s, attributed to the large number of carp present, which tend to stir up bottom sediments.

It was presumed that the turbid water conditions prevented growth and survival of SAV. Refuge managers began transplanting SAV and removing carp at this time. Between 1945 and 1960, SAV restoration in Lake Mattamuskeet began to have success with the removal of 2.3 million pounds of carp, 250,000 pounds of catfish and 150,000 pounds of gar, bowfin, gizzard shad and mullet. As SAV began to take hold, water quality continued to improve, which further promoted the establishment, spread and survival of the grasses during this time. Since the 1960s, the lake grasses have been viewed as an important part of the Lake Mattamuskeet ecosystem.

The grass on the west side of Lake Mattamuskeet began to decline during the 1990s, while grass on the east side continued to flourish. In 2009, concerns over those declines sparked research to more fully understand the apparent changes that were occurring. By extracting and examining cores of the lake sediment, researchers concluded that the construction of the Highway 94 causeway in 1940 resulted in a unique shallow lake ecosystem at Lake

Mattamuskeet. Highway 94, which bisects the lake from north to south, effectively resulted in two distinct basins, which were only connected by five culverts underneath the causeway. The west basin of the lake was dominated by phytoplankton while the east basin of the lake had better water quality and supported dense beds of grasses. This unique two-state system maintained itself until recently when the state of the lake changed again.

Monitoring data collected since 2012 indicates that there is presently no difference in water quality between the east and west sides of the lake, and rapid declines in SAV have occurred since 2013. Additionally, increasing levels of harmful cyanobacteria in the lake are producing toxins that could potentially harm wildlife and recreational users if the concentration of toxins in the lake increases. An assessment of water-quality data by the N.C. Division of Water Resources has determined that Lake Mattamuskeet is currently not meeting state water-quality standards, and beginning in 2016, the lake will appear on the U.S. Environmental Protection Agency's List of Impaired Waters.



WORKING ON A SOLUTION

There are likely many sources of increased sediment and nutrients that have resulted in eutrophication in Lake Mattamuskeet, including runoff from the surrounding farm fields and waterfowl impoundments draining to the lake, waterfowl feces and atmospheric deposition of nitrogen. The Refuge currently affects the rate of water outflow from Lake Mattamuskeet to a very limited extent, through flap gates on each of the four canals leading to Pamlico Sound. The one-way flap gates only open and allow water to pass when water levels in the lake are higher than those in Pamlico Sound. When the flap gates are open, winds can accelerate the process of pushing lake water to Pamlico Sound, depending on the water level in the lake drops below that of the Sound, preventing salt water from entering the lake.

Current models suggest that water levels are increasing in the Pamlico Sound at a rate of 2 millimeters per year and that water levels in the Pamlico Sound have increased 9 inches since the early 1900s. This is important because it could impact the rate at which water leaves the lake, increasing the amount of time that it takes excess nutrients and sediments to be "flushed" from the system. Changes in water levels in the Pamlico Sound may play an important role in eutrophication of Lake Mattamuskeet, since even a small rise in sea level directly impacts the amount of time nutrients and sediments reside in the lake. As a result, climate change could increase nutrients and sediments in Lake Mattamuskeet and increase the likelihood that they are recycled and resuspended in the water column by wind and wave action, and grazing fish like carp.

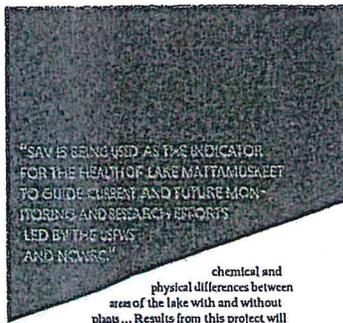
SAV is being used as the indicator for the health of Lake Mattamuskeet to guide current and future monitoring and research efforts led by the USFWS and NCWRC. These efforts will provide the baseline information needed for managers to begin targeting potential strategies that can reduce harmful algal blooms and promote the growth of SAV in

the lake, and to develop a long-term restoration plan to improve SAV coverage and overall health of the lake.

Since September 2012, USFWS has partnered with the U.S. Geological Survey (USGS) and the N.C. Division of Water Resources (NCDWR) to monitor lake water quality. Data collected as part of this project has informed our current understanding of why the grasses have declined at Lake Mattamuskeet. The USFWS, in partnership with Dr. Ryan Emmanuel at North Carolina State University (NCSU) and the National Oceanic and Atmospheric Administration (NOAA), have begun monitoring local water levels, salinity and temperatures in the Pamlico Sound from instruments placed at Bell Island Pier, located on Swanquarter National Wildlife Refuge. Real-time data from both the lake and the Pamlico Sound is publicly available. Additionally, USFWS, NCWRC and NCSU are collaborating to understand the abundance and movements of carp and the current impacts these fish have on the increased turbidity in Lake Mattamuskeet.

Several research projects designed to inform restoration strategies for Lake Mattamuskeet began in the summer of 2016. With funding provided through the Wildlife and Sport Fish Restoration Program—excise tax dollars on equipment, gear and motorboat fuel purchased by hunters, anglers and boaters—NCWRC has contracted with Dr. Mike Pichler of the University of North Carolina Institute of Marine Sciences and UNC Coastal Studies Institute to conduct a three-year project which will examine the in-lake factors that may influence the potential for restoration of grasses in the lake.

"This research is especially important since Lake Mattamuskeet has experienced such a fast and dramatic decline in plant coverage," Pichler said. "Two potential limitations on restoration of grasses in the lake are light availability and grazing [like waterfowl, turtles and carp]. We will map the amount of light available in the lake for SAV, conduct transplant experiments that include treatments that exclude grazers, and quantify



chemical and physical differences between areas of the lake with and without plants. Results from this project will provide answers to questions about where in the lake should be targeted for restoration and what approaches are most likely to lead to sustained restoration success."

Dr. Randall Etheridge, East Carolina University, will begin to assess the sediment and nutrient inputs coming into the lake from various sources. Dr. Daniel Obenour, NCSU, has begun a project that will use existing data for Lake Mattamuskeet to develop a lake hydrologic and water-quality model.

Collectively, these projects have been prioritized as top research needs by the Mattamuskeet Technical Working Group, and will help USFWS and NCWRC determine which restoration strategies may be most successful. From what has been learned from stable restoration efforts, recovering the grass on Lake Mattamuskeet will be complicated, and will also have to focus beyond the bounds of the Refuge itself by including stakeholders in the surrounding watershed, many of which may have direct impacts on lake water quality. An assessment of all the factors impacting SAV growth and survival needs to be completed first, so that any long-term restoration plans can have the greatest chance of success.

Bottom line, the factors which led to the current state of Lake Mattamuskeet did not happen overnight. It's going to take time, and require importantly, continued funding and partnerships to improve the water quality and bring back the grasses to Lake Mattamuskeet. ☺

Doug Howell is the waterfowl biologist for the N.C. Wildlife Resources Commission and co-chair of the Mattamuskeet Technical Working Group. Dr. Michelle Moorman is a biologist for the U.S. Fish and Wildlife Service and co-chair of the Mattamuskeet Technical Working Group.

Appendix F:

Breakdown of Costs

Appendix G:
Project Schedule and
Activities

TIMELINE FOR HYDE COUNTY'S PARTICIPATION IN THE MATTAMUSKEET WATERSHED DRAFT PLAN

The draft plan development will take 12 months and will follow this general project timeline.

June/July 2017	Project Commences, Press Release Announcing Plan Development, Public Meeting
August 15, 2017	Quarterly Invoice (Invoice-May 1-July 31, 2017)
September/October 2017	Quarterly Public Meeting
By November 15, 2017	Quarterly Invoice (Aug 1- Oct 31, 2017), Semi annual report (May 1- Oct 31, 2017)
December/January 2018	Quarterly Public Meeting
February 15, 2018	Quarterly Invoice (Nov 1, 2017- Jan 31, 2018)
March/April 2018	Quarterly Public Meeting
By May 15, 2018	Final Invoice for Hyde County (Feb 1- Apr 30, 2018) Semi annual report (Nov 1, 2017-Apr 30, 2018)
June/July 2018	Quarterly Public Meeting, Draft Plan Completed and Implementation Discussed
October 2018	Final Written Plan and Outreach materials, Final Press Release

**Hyde County Board of Commissioners
AGENDA ITEM SUMMARY SHEET**

Meeting Date: May 8, 2017
Presenter: Bill Rich
Attachment: Yes

ITEM TITLE: MEMORANDUM OF AGREEMENT TO WRITE A WATERSHED
RESORATION PLAN FOR LAKE MATTAMUSKEET

SUMMARY: The attached Memorandum of Agreement will set out guidelines for how the Coastal Federation, USFWS, NCWRC and the COUNTY will produce a watershed restoration plan for Lake Mattamuskeet.

RECOMMEND: APPROVE.

Motion Made By: Earl Pugh, Jr.
 Barry Swindell
 Dick Tunnell
 Ben Simmons
 Tom Pahl

Motion Seconded By: Earl Pugh, Jr.
 Barry Swindell
 Dick Tunnell
 Ben Simmons
 Tom Pahl

Vote: Earl Pugh, Jr.
 Barry Swindell
 Dick Tunnell
 Ben Simmons
 Tom Pahl

MEMORANDUM OF AGREEMENT

AGREEMENT TO WRITE A WATERSHED RESTORATION PLAN FOR LAKE MATTAMUSKEET

This agreement is made and entered into this the ___ day of May, 2017, by and between the NORTH CAROLINA COASTAL FEDERATION, hereinafter referred to as the FEDERATION, the UNITED STATES FISH AND WILDLIFE SERVICE, hereinafter referred to as USFWS, the NORTH CAROLINA WILDLIFE RESOURCES COMMISSION, hereinafter referred to as NCWRC, and the COUNTY OF HYDE, NORTH CAROLINA, hereinafter referred to as the COUNTY.

I. PURPOSE OF THE AGREEMENT

It is mutually agreed that the FEDERATION will cooperate with the USFWS, the NCWRC, and the COUNTY to produce a watershed restoration plan for Lake Mattamuskeet, located in Hyde County, North Carolina.

II. RESPONSIBILITIES

a. The FEDERATION agrees to:

- i. Work cooperatively with the USFWS, the NCWRC and the COUNTY to produce a voluntary watershed restoration plan (hereinafter referred to as the "Plan") for Lake Mattamuskeet (hereinafter referred to as "the Lake"). This nine-element plan will follow guidelines approved by the U.S. Environmental Protection Agency (hereinafter referred to as "EPA"), and will include the following components:
 1. *Identification of impairment, pollutant, causes and sources of pollution that need to be controlled. Pollution sources that need control measures should include estimates of their presence in the watershed.*
 2. *Identification and detail of reduction load and the measures necessary to meet water quality standards/goals.*
 3. *Details of management activities and the expected outcome.*
 4. *Identification of technical and financial assistance needed to implement outlined management activities. Additional details of long-term operation and maintenance measures are required.*
 5. *Education and information plan for the Lake watershed.*
 6. *Implementation schedule for actions listed in plan.*
 7. *Outline of measurable milestones to ensure plan benchmarks are met.*
 8. *Indicators that measure progress toward meeting watershed goals (including bacterial count, or indirect measurements).*
 9. *Monitoring component to evaluate the effectiveness of the plan.*
- ii. Help convene an inclusive group of **core stakeholder** members and **technical advisory** members as identified by Hyde Soil and Water, the COUNTY, USFWS and NCWRC. The FEDERATION will organize these quarterly stakeholder group meetings, presentations and materials. The FEDERATION will additionally organize quarterly public meetings in cooperation with the USFWS, the NCWRC, and the COUNTY to communicate the progress of the watershed restoration plan.

- iii. Compile and summarize past and current accounts and research related to water quality and quantity issues at the Lake. This includes historical and colloquial descriptions of land use changes over time, as well as technical and management assessment of water quality and quantity issues at the Lake conducted by university or other researchers.
 - iv. Research and develop possible solutions for addressing water quality and quantity concerns in the Lake. The FEDERATION will incorporate input from both core stakeholders and technical advisors.
 - v. Analyze impact of proposed solutions to address water quality and quantity concerns in the Lake, as well as future hydrologic conditions of various proposals that are implemented. The FEDERATION will facilitate ranking the importance and priority of possible solutions using input from technical advisors and the public. Final ranking and implementation decisions being made by the core stakeholder group.
 - vi. Design and distribute outreach materials to announce the following: a) Date, time and location of quarterly public meetings to explain progress on the Plan; b) Summary document explaining process, solutions, stakeholder process, and future plans.
- b. The USFWS agrees to:
- i. Through Notice of Cooperative Agreement Award No _____, fund 40% of the total cost of the Plan, not to exceed \$30,000.00. Invoices shall be paid within 30 days of receipt.
 - ii. Identify a point of contact for plan development and project administration.
 - iii. Assist in advertising public meetings notices.
 - iv. Assist in identifying and synthesizing all known research about the Lake and provide a briefing to FEDERATION staff on any ongoing Lake research as well as current status and trends.
 - v. Communicate in a timely and effective manner throughout the duration of the plan development.
- c. The NCWRC agrees to:
- i. Fund 40% of the total cost of the Plan, not to exceed \$30,000.00. Invoices shall be paid within 30 days of receipt.
 - ii. Identify a point of contact for plan development and project administration.
 - iii. Communicate in a timely and effective manner throughout the duration of the plan development.
- d. The COUNTY agrees to:
- i. Fund 20% of the total cost of the Plan, not to exceed \$15,000.00. Invoices shall be paid within 30 days of receipt.
 - ii. Identify a point of contact for plan development and project administration.
 - iii. Communicate in a timely and effective manner throughout the duration of the plan development.

III. TERMINATION

This agreement may be terminated by mutual written agreement or with written consent by all parties at least 120 days in advance of the date on which termination is to become effective.

IV. TERM OF AGREEMENT

This agreement shall become effective upon full execution and shall remain effective for a period of eighteen (18) months. This agreement will have an option for renewal for a period of eighteen (18) months, upon expiration, upon written agreement of all parties.

V. BUDGET and PAYMENT

The total budget for Lake Mattamuskeet Watershed Restoration Plan shall not exceed \$75,000. The total cost will be shared between the USFWS, the NCWRC, and the COUNTY, as indicated in section II.

Salary & benefits	\$53,000.00
Coastal Advocate/Contractor	1200 hrs
Executive Director	240 hrs
Coastal Scientist	120 hrs
Communications Specialist	80 hrs
Finance Manager	20 hrs
Finance and Operations Director	30 hrs
Travel	\$3,800
Mileage (bimonthly round trip travel and quarterly meetings)	\$3,100
Lodging/Per Diem (quarterly mtgs)	\$700
Supplies	\$4,700
Meeting Supplies	\$1,000
Design/Layout/Printing of Publications	\$2,500
Outreach/interview supplies (audio recorder, other)	\$1,200
Contract	\$13,500.00
Consultant for Watershed Analysis/BMP design	
TOTAL	\$75,000.00

The FEDERATION shall submit quarterly invoices for payment to the three funding partners. Invoices shall include expenses per the approved budget line items and be sent to:

U.S. Fish and Wildlife Services 85 Mattamuskeet Rd	N.C. Wildlife Resources Commission 132 Marine Drive	Hyde County 30 Oyster Creek PO Box 188
Swan Quarter, NC 27885 Pete_campbell@fws.gov	Edenton, NC 27932 Doug.howell@ncwildlife.org	Swan Quarter, NC 27885 brich@hydecourtync.gov
Attn: Pete Campbell	Attn: Doug Howell	Attn: Bill Rich

VI. COMMUNICATIONS PLAN

The FEDERATION will work with the other funding partners to form a core project team. It will organize and hold quarterly meetings of the core project team to plan project activities, review progress made and to assist in community outreach. The core team will be responsible for reviewing and editing drafts of the plan, identifying data sources, helping to ensure that the plan is accurate and assisting with community outreach. In addition to the work of the core project team, the FEDERATION will:

- 1) Develop and use three email lists:
 - i) one of the core project team
 - ii) one for technical advisors and
 - iii) one for interested community stakeholders
- 2) Develop and distribute two press releases after being reviewed and approved by the project partners (COUNTY, USFWS and NCWRC). One will explain the project and promote the first public meeting for the plan development and one to present the draft plan for feedback.
- 3) Develop and maintain a web page about the project and the plan, to be hosted and maintained by the FEDERATION and linked to the COUNTY, NCWRC and USFWS websites.
- 4) Public meetings will be advertised via press release and circulated to maintained email lists at least two weeks prior to scheduled meeting.
- 5) Meeting agenda, notes and presentations will be posted to website no more than two weeks after meeting is held.
- 6) Draft the watershed restoration plan. The plan will be designed/laid-out by the FEDERATION and made available in an electronic form to the public and in printed form for core project members and anyone from the public that requests a printed copy.
- 7) Develop and distribute 1,000 copies of a flyer summarizing the plan and where the full plan can be viewed.
- 8) Recognize all partners in all communications materials.
- 9) Illustrate the plan with maps, graphic and photos as needed.

VII. TIMELINE

The plan development will take approximately 18 months and will follow this general project timeline.

May 1, 2017	Project Commences, Press Release Announcing Plan Development
June/July 2017	Quarterly Public Meeting
August 15, 2017	Quarterly Invoice (Invoice-May 1-July 31, 2017)
September/October 2017	Quarterly Public Meeting
By November 15, 2017	Quarterly Invoice (Aug 1- Oct 31, 2017), Semi annual report (May 1- Oct 31, 2017)
December/January 2018	Quarterly Public Meeting
February 15, 2018	Quarterly Invoice (Nov 1, 2017- Jan 31, 2018)
March/April 2018	Quarterly Public Meeting
By May 15, 2018	Quarterly Invoice (Feb 1- Apr 30, 2018) Semi annual report (Nov 1, 2017-Apr 30, 2018)
June/July 2018	Quarterly Public Meeting, Draft Plan and Implementation Discussed
August 15, 2018	Quarterly Invoice (May 1- July 31, 2018)
September 2018	Quarterly Public Meeting- Final Plan and Prioritized Implementation Presented, Draft Plan Outreach materials
October 2018	Final Written Plan and Outreach materials, Final Press Release
By November 15, 2018	Final Invoice (Aug-Oct 31, 2018) and Final Report (May 1-October 31, 2018)

Ownership of Documents/Data

Any reports, studies, photographs (and negatives), computer programs and data, drawings, writings or other similar works or documents along with all supporting data and material, produced under this contract are the joint property of the FEDERATION and the COUNTY and are to be delivered to all parties at the end of the contract. These materials and data become public information once they are sent to government agencies.

Confidentiality

Project materials that are working drafts being researched and developed by the FEDERATION are confidential. Once materials are provided to the COUNTY, USFWS or NCWRC for their review and consideration they become public information. Data collected from human subjects under procedures approved by the ECU Institutional Review Board (IRB) are exempted. Storage and dissemination of these data will be governed by the guidelines defined by the IRB; these data will remain confidential and under the control of the originating researcher.

Notices

Any notice required by this agreement shall be sent Certified Mail, return receipt requested, to the parties listed below.

Binding Effect/Amendments

This agreement shall become binding when signed by the parties. This agreement contains the entire agreement of the parties and no amendment shall be effective except in writing signed by all parties.

Equal Opportunity

1. The non-discrimination clause contained in Section 202 (federal) Executive Order 11246, as amended by Executive Order 11375, relative to Equal Employment Opportunity for all persons without regard to race, color, religion, sex or national origin, and the implementing rules and regulations prescribed by the Secretary of Labor, are incorporated herein.
2. The FEDERATION, USFWS, NCWRC, and the COUNTY agree not to discriminate against any employee or applicant for employment because of physical or mental handicap in regard to any position for which the employees or applicant is qualified. All named parties agree to take affirmative action to employ, advance in employment and otherwise treat qualified handicapped individuals without discrimination based upon their physical or mental handicap in all employment practice.

Terms and Conditions

1. **ACCESS TO PERSONS AND RECORDS:** During and after the term hereof, the State Auditor and any using agency's internal auditors shall have access to persons and records related to this Contract to verify accounts and data affecting fees or performance under the Contract.
2. **AVAILABILITY OF FUNDS:** Any and all payments to the FEDERATION are dependent upon and subject to the availability of funds to the USFWS, NCWRC, and the COUNTY for the purpose set forth in this agreement.
3. **COMPLIANCE WITH LAWS:** the FEDERATION, USFWS, NCWRC, and the COUNTY will comply with all laws, ordinances, codes, rules, regulations, and licensing requirements that are applicable to the conduct of its business and performance in accordance with this contract, including those of federal, state, and local agencies having jurisdiction and/or authority.

Certifications: the FEDERATION, USFWS, NCWRC, and the COUNTY certifies to each of the following:

1. That none of its officers, directors, or controlling owners has been convicted of any violations of state or federal securities act violations in the last ten years;
2. That it has not refused to collect Use tax on sales delivered to North Carolina, and it is not incorporated in a tax haven county;
3. That no employee or agent of the FEDERATION, USFWS, NCWRC, and the COUNTY, has offered, and no State employee has accepted, any gift or gratuity in connection with this contract; and
4. That the FEDERATION, USFWS, NCWRC, and the COUNTY having more than 25 employees in North Carolina, verifies the work authorization of such employees through the federal E-Verify System;
5. That the FEDERATION, USFWS, NCWRC, and the COUNTY is not identified on the Final Divestment List of entities that the North Carolina State Treasurer has determined engages in investment activities in Iran. This list is available at: <https://www.nctreasurer.com/inside-the-department/OpenGovernment/Pages/Iran-Divestment-Act-Resources.aspx>.

Governing Laws

This Contract is made under and shall be governed, construed, and enforced in accordance with the laws of the State of North Carolina, without regard to conflict of laws rules, and within such State shall all matters, whether sounding in Contract or tort or otherwise, relating to its validity, construction, interpretation and enforcement be determined.

IN TESTIMONY WHEREOF, this Memorandum of Agreement has been executed by the parties hereto, in duplicate originals, as of the date first above written.

The signatures below indicate approval of this agreement.

Todd Miller, Executive Director
North Carolina Coastal Federation

Date: _____

David Viker, Chief of Refuges
United States Fish & Wildlife Service

Date: _____

Gordon Myers, Executive Director
North Carolina Wildlife Resources Commission

Date: _____

Bill Rich, County Manager
Hyde County, North Carolina

Date: _____

Earl Pugh, Jr., Chairman
Hyde County Board of Commissioners

Date: _____

Health Department Activity Report - March 2017

CLINICAL SERVICES	Current Month	Year To Date
Family Planning	14	122
Maternal Health	4	74
Adult Health: Wellness/Primary Care/Chronic Disease/Telemedicine	22	335
BCCCP	6	23
Immunizations	10	139
Seasonal Flu Shots/Flu Mists	0	0
Adults	1	40
Children	0	57
STD Treatments	2	33
Communicable Disease Cases/Investigations	1	11
TB Treatments (Latent) & Skin Tests	9	23
Child Health (Wellness)	5	102
Child Health (Sick Care)	10	89
Rabies Treatments/Investigations**		2
Dental Varnishing	2	9
Lab Services	25	320
WIC (Women, Infant & Child Nutrition Assistance)		
WIC – Mainland		
Certifications	13	93
Mid-Certification Assessments	7	68
Pick-ups	11	120
Vendor Trainings	0	12
WIC – Ocracoke (Quarterly)		
Certifications	6	12
Mid-Certification Assessments	3	12
Pick-ups	3	22
Vendor Trainings	0	0
PREGNANCY/EARLY CHILDHOOD SERVICES		
Pregnancy Care Management (for healthy pregnancies and births)		
Current Case Load	h o, M 5, l o, p o	
Contacts this Month	30	
Attempts (No Contact)	5	
Care Coordination for Children (for healthy children 0-5 years)		
Current Case Load	h o, m 8, l 1, p 3	
Contacts this Month	114	
Attempts (No Contact)	11	
Family Connects (for healthy mother/child after birth)	0	
MEDICATION ASSISTANCE PROGRAM		
New Patients Enrolled	0	8
Patients Served	65	159
New Requests	0	23
Reorder Requests	5	44
Medications Requested	5	55
Medications Received	8	38
Medications Delivered	8	36
ENVIRONMENTAL HEALTH		
Food and Lodging		
F&L Inspections	14	93
F&L Visits	2	58

F&L Pre-Opening Visits		
F&L Permits Issued	1	3
F&L Permits Suspended	1	5
F&L Suspensions Lifted		2
F&L Complaint Investigations		1
F&L Consults		4
General Sanitation	29	106
Vector Control		9
Animal Control		11
Health Education		0
On-Site Wastewater		2
Sites Visited/Evaluated		
Improvement Permits Issued	19	97
Construction Authorizations	3	23
Other Authorizations	5	38
Consultative Contacts		0
Operation Permits Issued	53	376
Migrant Housing Inspections		12
On-Site Wells		0
Well Site Evaluated		
Grouting Inspections		1
Well Site Construction Visits		6
Well Construction Permits Issued		3
Well Certificate of Completion		0
Bacteriological Samples Collected	1	6
Other Sample Collected	1	13
Well Consultative Contacts		16
	6	58

Physical Activity & Nutrition Programming:

- Piyo classes are being offered free-of-charge to residents
 - Mondays & Wednesdays at 5PM (OA Peay)
 - Tuesdays & Thursdays at 6:00PM (Belhaven)
- KidShape Programming concluded on February 27th on Ocracoke
 - 10 families participated in the program
- KBR funds:
 - Carryover into a Year 4 (July 2017 – June 2018)
 - Supporting start-up costs for Hyde County Youth Athletics

Prescription Drug Abuse Prevention:

- Drug drop boxes have been installed in both sheriff's offices
- HCHD dispensing Naloxone to those who use opioids or their family members
- Collaborating on advertising with Dare County started in January

Project Direct LEGACY for Men (Chronic Disease Task Force):

- Advisory Committee has finally achieved 501 (c) 3 status
- HCHD continues to support PDL as a community partner

Hyde County Farmers Market:

- More PICH funding to come in 2017
- Plan submitted in February – included multiple market locations and increased educational activities at markets
- 2017 Farmers Market schedule TBD

Community Gardens

- HCHD staff is involved in a community garden project, which aims to support existing county community gardens
- Scranton and Engelhard Community Gardens are gearing up for the spring growing season

- Funding is needed for seeds and equipment in the future



Resolution
To Oppose North Carolina House Bill 867
Coastal Fisheries Conservation / Economic Development

WHEREAS, the State of North Carolina and Dare County have a long history and lineage of commercial fishing from the Algonquian Indians trading fish to the modern day commercial fishing industry; and

WHEREAS, North Carolina commercial fishermen have made extraordinary gains with science in protecting the environment which they rely on for their wellbeing and way of life, and want to protect the waters and fisheries for the next generation along with generations to come; and

WHEREAS, commercial fishing in North Carolina is in a state of change. There are a number of economic pressures bearing down on industry participants such as competition from imported seafood, closing working waterfronts, and ever increasing government regulations; and

WHEREAS, imported seafood is normally of lower quality, with little regulation and inspection of the product. Imported seafood has been known to have been raised in waters containing human or animal feces, and also injected with carboxymethyl cellulose, gelatin, and glucose; and

WHEREAS, due to recent appointments to the North Carolina Marine Fisheries Commission, the Commission has refused to listen and adhere to the advice of their own advisory committees including Finfish, Habitat and Water Quality, Shellfish / Crustacean, Northern Region, and Southern Region advisory committees; and

WHEREAS, the North Carolina Marine Fisheries Commission has gone against the advice of their advisory committees, and are currently trying to establish severe restrictions on the commercial fishing industry without scientific data or an economic impact study on which to base their restrictions. These restrictions go against the current Management Plan which requires future regulations be based on science and the data gathered; and

WHEREAS, House Bill 867 seeks to rewrite the North Carolina Fisheries Reform Act of 1997, which was passed after months of public scrutiny. House Bill 867 would reform the North Carolina Fisheries Reform Act of 1997 without such vetting from the public; and

WHEREAS, House Bill 867 would eliminate the advisory committees which have a set amount of commercial fishermen, recreational fishermen, and scientists to advise the Commission and replace them with one, 20 member advisory committee appointed by the North Carolina Marine Fisheries Commission without any designation as to member's qualification or status in the industry; and

WHEREAS, House Bill 867 also offers a commercial fishing license buyback plan which also gives insight to the implied destruction of a way of life for so many North Carolina residents that would cause a harmful impact to the state's economy.

NOW THEREFORE BE IT RESOLVED that the Dare County Board of Commissioners hereby opposes North Carolina House Bill 867 in its entirety and respectfully requests that North Carolina Legislators reject this legislation and support the State of North Carolina's working watermen in order to sustain a way of life for many future generations and preserve a vital economic engine for North Carolina.

Adopted this the 1st day of May, 2017.



Dare County Board of Commissioners

A handwritten signature in blue ink, appearing to read "Robert Woodard", is written over a horizontal line.

Robert Woodard, Chairman

ATTEST:

A handwritten signature in blue ink, appearing to read "Gary Lee Gross", is written over a horizontal line.

Gary Lee Gross, Clerk to the Board