North Carolina Draft 2021 White Oak River Basin Water Resource Plan Public Comment and Responses Document NC Division of Water Resources

Contents

Commenter: North Carolina Farm Bureau

NORTH CAROLINA
FARM BUREAU FEDERATION, INC.

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July 23, 2021

Robin Hoffman
Basin Planner
Division of Water Resources
1611 Mail Service Center
Raleigh, NC 27699

Delivered via email to: robin.hoffman@ncdenr.gov

Dear Ms. Hoffman:

The North Carolina Farm Bureau Federation (NCFB or Farm Bureau) is North Carolina's largest general farm organization, representing the interests of farm and rural people in our State. This letter is to comment on the June 24, 2021 version of the Draft 2021 White Oak River Basin Water Resources Plan (Plan), accessed on July 22, 2021 at:
https://deq.nc.gov/about/divisions/water-resources/water-planning/basin-planning/water-resource-plans/white-oak/draft

NCFB appreciates the opportunity to comment on the draft White Oak Plan. We also appreciate some of the improvements to this draft Plan that seem to have resulted from comments that we have made on previous draft basin plans. For the most part, these comments are organized in the same manner as the Plan using section and page numbers in order. Therefore, the order in which the comments appear should not be construed to indicate any relative importance of the comments or concerns expressed.

Executive Summary
Because this is a digest, NCFB will be commenting on the more specific language in the draft Plan as appropriate in each section. As changes are made to the rest of the Plan by DWR, it will be important to make such changes as are necessary to the Executive Summary to reflect those changes.

Chapter 1 – Overview
1.2.1 Population (Page 2)
The document states, "According to data available through OSBM, population in Avery and White Oak County is projected to grow by 2 and 18 percent, respectively, between 2010 and 2030." Obviously this is an error. As a result of this error there is no discussion in the document of the population growth data and projections for this basin between 2010 and 2030, such as in counties like Brunswick (58.98% increase), Pender (46.77%) and New Hanover (35.16%) as shown in Table 1-1 (page 4). A discussion of this projected growth should be added.

Additionally tourism is tremendously important to this Basin's economy. This section focuses on the resident population, but there should be some discussion in the Plan of the impact on water quality and water use of the seasonal increases in population caused by the tremendous influx of tourists that visit this Basin. There are strains on water use and wastewater infrastructure, direct impacts to water through recreational activities, and nonpoint impacts also. Estimates of the numbers of tourists annually and the impacts of tourism and the tourist population need to be assessed and addressed in the Plan.

1.2.2 Land Use – National Land Cover Data (Pages 5-7)
In this Basin, there is the unusual situation that the land use category "Developed" land is a greater percentage of the land cover (12.95%) than "Agriculture" (10.23%), with developed land being almost 19% of the New River subbasin (as shown on page 6 of the document in Table 1-3). In several places in the Plan, nonpoint sources are

discussed. The large amount of developed land in this basin could be the most significant nonpoint source in the Basin. We appreciate the discussion of the impacts of impervious surfaces on page 6 and that several of the recommendations throughout the document address stormwater from these developed areas.

1.4 Nonpoint Source Pollution (Page 8)
In Section 1.4.1 Agriculture (page 11) the last paragraph, if retained, should be moved to be part of the summation of Section 1.4 Nonpoint Source Pollution, rather than being in the Agriculture section. The paragraph discusses much more than agriculture. Further, the part of that paragraph that is in bold should not be. It is the only sentence in that entire Chapter that is bolded and it is not clear why, unless it was as a placeholder for the Plan writer. Additionally, if the document is discussing where potential nonpoint nutrient sources that might be contributing to water quality impairments and impacting shellfish growing areas are, there are numerous potential nutrient sources besides dry litter poultry operations and manure hauling that DWR should list in the parenthetical here, such as septic systems and nonpoint stormwater sources.

1.5.2 Wetland Loss and Alteration (Pages 19-20)
On page 19, the Plan mentions, almost as an aside, that "federal and state regulations have slowed the loss of wetlands *since the mid-1980s*…" but then goes on to say "…approximately one third of alterations to wetlands in the Coastal Plain have occurred *since the 1950s*, primarily due to agricultural and managed forest conversion (USGS, 1996)" (emphasis added.)

Regarding agriculture, there are two important points we need to make. First, conversion to agriculture of wetlands has almost completely stopped since the 1980's due to the Wetland Conservation Provisions of the 1985 Farm Bill, commonly called the "Swampbuster" provisions. Those provisions are very serious economic disincentives for farmers to convert wetlands to agricultural production, because farmers who do so after December 23, 1985, lose access to all federal farm assistance programs, to USDA loans and to federal crop insurance among other federal benefits. Therefore, speaking of alterations back to the 1950s does not even closely approximate the current situation regarding conversion of wetlands to agriculture. NCFB appreciates the description in the document of the Highly Erodible Land and Wetland Conservation provisions of the 1985 Farm Bill. Those provisions remain in place.

Second, the routine agriculture and silviculture activities that are exempt from the requirements for dredge and fill permits under Section 404(f)(1) are "the discharge of dredge or fill material from normal farming, silviculture, and ranching activities such as plowing, seeding, cultivating, minor drainage, harvesting for the production of food, fiber, and forest products, or upland soil and water conservation practices." As stated in the Plan, none of these activities are allowed to "convert a wetland area to an upland." The Plan should spell out what the exempt farming and silviculture activities are under Section 404(f) rather than leaving the impression that farmers can fill in wetlands under the exemption.

1.6 Climate Resiliency (Page 23)
On page 23, the document mentions the rules in place in several watersheds in the state to protect riparian buffers in order to reduce the amount of nutrients entering waterways from point and nonpoint sources. This language suggests the possibility of expanding and enforcing those regulations statewide. We will discuss our concerns regarding riparian buffer mandates later in these comments.

Chapter 3 - White Oak Subbasin - Hydrologic Unit Code (HUC): 03020301
It appears that there may be an error in the numbering of the sections, as sections beginning with 3.6.3 – 3.6.7 come after sections 3.7.1 and 3.7.2. Also there is no section 3.9.

3.2 Population and Land Use (Page 3)
The text is in error. Developed land is 8% in Table 3-2, not 4%. Also estimates of the numbers of tourists annually and the impacts of tourism and the tourist population need to be assessed and addressed in the Plan.

3.6.6 Oyster Creek – Jarrett Bay (HUC 0302030106) (Page 23)
This section discusses the TMDL for fecal coliform for this HUC. The text states that one of the estimated sources of fecal coliform bacteria in this watershed is livestock. The actual TMDL shows livestock as 0.1%. The most substantial sources are pets (20 – 48%) and wildlife (49 – 77%), so livestock is not an issue here. Also, the link to the TMDL in the paragraph does not work but the "Jarrett Bay and it's Embayment" TMDL link on page 23 does work.

3.10 Protecting Water Resources in the White Oak River Subbasin (Page 27)
The following recommendation that is included in the Executive Summary and in Chapter 4 should be added to Chapter 3: "Increase financial support for the implementation of voluntary BMPs throughout the basin. Several voluntary programs exist through the local Soil and Water Conservation District (SWCD) and Natural Resources Conservation Service (NRCS). The SWCD, NRCS and the Cooperative Extension Offices (CES) can also provide guidance on managing agricultural lands, forests, riparian buffers, and stormwater runoff." Note that NRCS is the Natural Resources Conservation Service, not Resource.

The recommendation to reevaluate the existing NSW strategy for the New River watershed will be discussed later under our comments on Chapter 4 that deals with the New River.

One of the recommendations on page 27 in Section 3.10 and discussed similarly elsewhere in the Plan (Section 1.6, Section 4.10 and Section 5.2.3) is to "Maintain effective regulatory strategies throughout the river basins to reduce nonpoint pollution and minimize cumulative losses of fish habitat, including use of vegetated buffers and established stormwater controls." The Plan language in these Sections implies that those would be mandatory buffers. NCFB opposes mandatory buffers on land used for agricultural purposes. If necessary, installation of such mandatory buffers may be appropriate only when land use changes, for example from agriculture to development. Also, we oppose a requirement to maintain existing buffers on agricultural land. If a regulatory program were to require maintenance of existing buffers, landowners should be able to install equivalent controls if some part of a buffer is removed. Additionally farmers should be compensated for the loss of use of productive timber or other agricultural land if mandated to maintain or install riparian buffers on their agricultural or forestlands. While we do not support the recommendations for mandatory buffer protection regulations in this Plan, we do support voluntary, incentive-based programs that could increase and maintain riparian buffers, such as financial incentives and utilization of existing voluntary cost-share programs, with adequate funding for those efforts.

Chapter 4 – New River
4.2 Population and Land Use (Page 2-3)
As we did earlier, we wish to point out that agriculture is only 10% of the land use in the New River subbasin while developed/urban areas are 19% of the land use. The percentage of land in the Developed land category has continued to grow since 2001 while the percentage of land in the Agriculture category has declined since 2001 (Table 4.2, page 3). Based on the population projections in Table 4-1, the developed/urban land use is expected to continue to increase. In addition to the text about the town of Jacksonville, the projected growth in other areas and the potential impact of that growth on water quality should be highlighted. Also, estimates of the numbers of tourists annually and the impacts of tourism and the tourist population need to be assessed and addressed in the Plan.

4.8.5 Masonboro Inlet – Mason Inlet (HUC 0302030205) (Page 36)
The text states "The human sources were attributed to discharge from *marines* and boat heads." (Emphasis added.) Perhaps you meant "marinas" instead of "marines"?

4.10 Protecting Water Resources in the New River Subbasin (Pages 38 – 40)
Nutrient Sensitive Waters (NSW) (Pages 38-39)
This Section states that the existing nutrient management strategy should be revisited and lists three options that could be explored (also stated in Section 3.10 and the Executive Summary). We question whether this revisiting is necessary, but will offer the following comments about each of the three options and offer an alternative.

The first option on page 38 states, "Coordinating with local, state, and federal agencies, including the City of Jacksonville, Onslow County, Camp Lejeune, and the North Carolina Coastal Federation (NCCF), to formally update the NSW strategy. The update should include and identify nonpoint source nutrient reduction opportunities. This approach would enable DEQ to keep the New River impairments in Category 4b with an updated and expanded NSW strategy."

This first option, if not removed from the Plan, should be rewritten to delete the word "formally" which implies rulemaking. Also the recommendation should be revised to add an evaluation of all of the point sources for new or additional reduction opportunities, in addition to identifying nonpoint source opportunities. As we have stated earlier, we would support voluntary incentive-based programs for agricultural nonpoint source reductions, with adequate funding for those programs, but would oppose additional mandates. This option should also be revised to change "and the North Carolina Coastal Federation (NCCF)" to "and with other stakeholders" because the NCCF does not represent all of the interested stakeholders and private entities in the basin. The NCCF should not be singled out in this Plan as the only non-government entity or private citizens to participate in this effort. Also, if a stakeholder process to review and possibly revisit the strategy is initiated, we recommend it be coordinated by DWR, not by an outside group.

The second option on page 39 is stated as "Moving or re-assigning waterbodies from Category 4b to Category 5. Placing these waters back in Category 5 would require DEQ to develop a TMDL or an alternative TMDL to address point and nonpoint source pollution [in] the watershed."

We strongly oppose this second option and it should be removed from the Plan. There is an existing nutrient management strategy and DWR should not recommend forcing DEQ to develop a TMDL or an alternate TMDL. We oppose revising the strategy but, if found to be necessary, revisions to the existing strategy while these waterbodies remain in Category 4b are far preferable to re-assigning waterbodies to Category 5, adding them back onto the 303(d) impaired waters list and forcing a TMDL.

The third option on page 39 is stated as "Request that the Environmental Management Commission (EMC) revisit the original 1991 NSW strategy to include reductions for nonpoint source pollution and review current permit discharge limits to ensure that the original strategy was implemented to its fullest extent." This third option appears to describe an initiation of rulemaking. This option should not be pursued at this time and should be removed from the Plan.

We recommend the following alternative to the three options that we have requested be removed from the Plan. Rather than assuming that the NSW strategy needs to be revisited, DWR should get input from all stakeholders regarding the necessity and desirability of revisiting the NSW strategy. The stakeholders should be given the opportunity to recommend and take additional actions themselves to address water quality concerns. This should happen prior to considering or initiating any of the above three options currently in the Plan.

Nonpoint Source Pollution and Shellfish Growing Area (Pages 39-40)
Earlier in our comments under Chapter 3 we addressed the recommendation regarding regulatory strategies to include mandatory buffers and those comments apply here also.

We support the following recommendation, but only if the strategies remain voluntary: "Continue to improve strategies to reduce nonpoint source pollution and minimize cumulative losses. This can be done through

voluntary programs, actions, and assistance and improving methods to control stormwater runoff from agriculture, forestry, and urban areas." This recommendation also appears in Chapter 3 (page 27.)

We support the recommendation that begins, "Increase financial support for the implementation of voluntary BMPs throughout the basin…" We appreciate the recognition and support for the voluntary programs and technical assistance that exist through the local Soil and Water Conservation District (SWCD), the Natural Resource[s] Conservation Service (NRCS) and Cooperative Extension Service. Note that NRCS is the Natural Resources Conservation Service, not Resource. Further, as it is in the Executive Summary, the last part of this recommendation regarding the Onslow County Cooperative Extension Service and the Onslow County Water Quality Monitoring Program should be made a separate recommendation.

Chapter 5 – Shellfish Industry in the White Oak River Basin
5.2.3 Water Quality and Shellfish Harvesting (Page 9)
Earlier in our comments we addressed the document's discussion of and our opposition to mandatory riparian buffer rules for this Basin. We do support the recommendation on page 9 that says, "Increase voluntary use and incentives for maintaining or establishing vegetated buffers on agriculture, timber-harvesting, and lands under development or slated for development." We support such voluntary, incentive-based programs.

Chapter 6 – Water Quality Initiatives and Funding
6.4.4 Cost Share Programs for Best Management Practices (BMPs) (Page 16)
The document states, "DWR and DSWC are working to identify the BMPs implemented in the White Oak River basin. Once available, these numbers will be made available as an update to this document."

NCFB appreciates that recent basin plans have included this important information regarding the Best Management Practices funded and installed through the cost-share programs administered by the NC Division of Soil and Water Conservation (DSWC). Thank you for working with the DSWC to identify and quantify the BMPs implemented and the funds expended by the cost-share programs in the White Oak Basin. We look forward to seeing those numbers added to this document before it is finalized.

Also on page 16 there is a discussion of the USDA-NRCS Environmental Quality Incentives Program (EQIP). Best Management Practice funding and installation data should also be obtained for this basin from NRCS and included in this report. This information can be obtained by contacting the North Carolina office of NRCS. Also, this paragraph erroneously references the Chowan River Basin, not the White Oak River Basin, and there is a note regarding a source material error at the end of the paragraph.

Chapter 7 – Permitted and Registered Activities
7.3 Wetland and Buffer Permitting Programs (Pages 7 - 9)
In the last paragraph of Section 7.3.1 (Federal Section 404 Permitting), there is a discussion of the changes to federal wetlands jurisdiction that came about as a result of the federal Navigable Waters Protection Rule (NWPR) in June 2020. However in Section 7.3.2 (North Carolina Section 401 Permitting and Certification) there is not any discussion of the recent activities by DWR and the NC Environmental Management Commission to establish rules and a permitting program in response to the NWPR. This section needs to be updated to include the EMC's adoption of new temporary rules to address wetlands and waters that became non-jurisdictional under the NWPR, and DWR's efforts to develop permanent rules.

Chapter 8 – Water Use in the White Oak River Basin (Pages 4, 19 and 20)
Sections 8.1.5 Agricultural Water Use, 8.5.2 Agricultural Water Use Data, and 8.5.5 Identifying Data Gaps, reference the Agricultural Water Use Survey (AWUS). It is very disappointing that, as in previous draft basin plans, the focus in this draft Plan is more on the gaps in reporting than on the success of this voluntary reporting program that has an 80% participation rate. In addition, it is agriculture that is reporting water use at the smallest

rates (10,000 gallons per day) compared to other water users who register and report water use at 100,000 gallons per day.

The draft plan contains the following language in 8.5.2 (page 19), "The DWR will continue to work collaboratively with federal, state, and local agencies as well as stakeholders in the basin to identify information sharing opportunities to understand and protect water resources for all needs in the White Oak River basin." We suggest that this language be revised to specifically mention that the DWR and NCDA&CS have worked collaboratively and have identified a possible solution for closing some of the data gaps.

Thank you for the opportunity to comment on the draft 2021 White Oak River Basin Water Resources Plan. If you have questions regarding any of these comments, please do not hesitate to contact me at 919-788-1005, or via email at anne.coan@ncfb.org.

Sincerely,

Anne Coan
Director of Environmental Affairs

Division of Water Resources Response:

1.2.1 Population

Data errors were corrected and text was added to acknowledge seasonal fluctuations in population. Tourism is also addressed in Ch. 8 as seasonal population fluctuations are recorded by water utilities in the basin.

1.4 Nonpoint Source Pollution

The bolding of the sentences was a formatting error, was not intended as an emphasis and was corrected. The last paragraph of subsection 1.4.1 was moved to the summation section of Section 1.4 where it fits more logically. Sources of nonpoint pollution besides agriculture, such as storm water, golf courses, septic systems, and forestry, are mentioned in other subsections of section 1.4.

1.5.2 Wetland Loss and Alteration

This comment was also received for the Pasquotank Water Resources plan. As a result, text was added to further expand on the provisions of the Swampbuster program. The text in Section 1.5.2 of the White Oak Water Resources Plan was copied from the updated text in the Pasquotank Water Resources plan. No further changes were made.

The plan does spell out what exempt activities are by providing a link to the CFR with the exact language.

3.2 Population and Land Use

Data error corrected. Tourism and tourist population numbers are discussed elsewhere in the plan.

3.6.6 Oyster Creek-Jarrett Bay

Comment noted, but no changes made. Fixed hyperlink to the TMDL document.

3.10 Protecting Water Resources in the White Oak River Subbasin

Added recommendation “Maintain effective regulatory strategies throughout the river basins to reduce nonpoint pollution and minimize cumulative losses of fish habitat, including use of vegetated buffers and established stormwater controls” and corrected NRCS reference.

Edited the other recommendation to read "Maintain existing, effective regulatory strategies, such as use of vegetated buffers and stormwater controls throughout the river basins, to reduce nonpoint pollution and minimize cumulative losses of fish habitat and impacts to water quality." Section 1.6 includes language lifted directly from EO80 and the 2020 Climate Resiliency Plan, which does recommend protecting vegetated buffers and makes mention buffer rules already in place, but there is no recommendation or an implication of a recommendation for new buffer rules. Language in Sections 4.10 and 5.2.3 is taken from a recommendation contained in the CHPP. No other changes made.

4.2 Population and Land Use

This comment is addressed elsewhere in the plan.

4.10 Protecting Water Resources in the New River Subbasin (Pages 38 – 40) Nutrient Sensitive Waters (NSW) (Pages 38-39)

The first NSW alternative was updated to read: "DWR, coordinating with local, state, and federal agencies, including the City of Jacksonville, Onslow County, Camp Lejeune, and other stakeholders to update the NSW strategy. The update should include and identify point and nonpoint source nutrient reduction opportunities. This approach would enable DEQ to keep the New River impairments in Category 4b with an updated and expanded NSW strategy."

If the New River moves back to Category 5, it will be at the direction of the USEPA and the text was edited to reflect that.

The third alternative for the NSW update, “Request that the Environmental Management Commission (EMC) revisit the original 1991 NSW strategy to include reductions for nonpoint source pollution and review current permit discharge limits to ensure that the original strategy was implemented to its fullest extent.” was deleted as it was redundant.

Sections 8.1.5 Agricultural Water Use, 8.5.2 Agricultural Water Use Data, and 8.5.5 Identifying Data Gaps

Comment reviewed internally w/ Water Planning Section management and the Water Supply Planning Branch (WSPB). DWR feels that each of the programs for water withdrawal (including the AWUS) are represented factually. DWR will continue to work with interested parties in identifying information sharing opportunities and how best to represent water use in future basin plans. No changes made.

Comment regarding collaboration between DWR and NCDA&CS noted, but no changes made.

6.4.4 Cost Share Programs for Best Management Practices (BMPs)

BMP and EQIP numbers are in the process of being verified and updated.

Nonpoint Source Pollution and Shellfish Growing Area (Pages 39-40) and Chapter 5 – Shellfish Industry in the White Oak River Basin 5.2.3 Water Quality and Shellfish Harvesting

Comments noted.

Commenter: City of Wilmington

Figure 4-3: Confusing imagery. Placing the 2018 benthic monitoring stations over the IR map makes it appear that all the red "exceeding criteria" areas are for benthic populations, when none of the stations are listed as poor. For Hewletts Creek in particular, the creek is NOT listed for benthic impairment – only high fecal for shellfish. The figure is misleading as presented.

Chapter 4, page 4 – Appendix IV link does not work.

Is there more recent land cover data available for use? A lot of development and redevelopment has gone in the past few years in New Hanover County especially.

Page 36 -- "The human sources were attributed to discharge from marines and boat heads"; should read Marinas

Chapter 6

Bradley & Hewletts Creeks Watershed Restoration Plan links are not working. Also, while 2006 was when the plan was in the early development stages, the data in the plan uses 2010 as a baseline. Wilmington City Council officially adopted The Plan in September 2012. There have also been several grants that have been awarded more recently than 2016 to support the plan.

Link to the plan:
https://wilmington.granicus.com/MetaViewer.php?view_id=25&clip_id=3447&meta_id=112769

Grants:

Implementing Public & Private Retrofits to Reduce Stormwater Runoff Volume & Pollutants in the Bradley Creek Watershed

Reducing Stormwater Runoff Volume on the UNC-Wilmington Campus

Implementing the Bradley & Hewletts Creeks Watershed Restoration Plan

Hewletts Creek Water Quality Improvement Project

Added hyperlinks of additional grants

The Heal Our Waterways Program (HOW Program) (correct link: www.healourwaterways.org OR www.healourwaterways.com) is a City of Wilmington-led initiative to achieve the volume reduction targets identified within the Bradley and Hewletts Creeks Watershed Restoration Plan, which was created in partnership with the North Carolina Coastal Federation (NCCF). The HOW Program regularly partners with NCCF, North Carolina State University, New Hanover Soil and Water Conservation District, UNC-Wilmington, and other local stakeholders to facilitate the implementation of volume-reducing Stormwater Control Measures (SCMs) within the Bradley and Hewletts Creek Watersheds. As one example, the City provides $30,000 of HOW Program funds to NHSWCD to implement SCMs on private properties in the Bradley and Hewletts Creek Watersheds. The program provides up to 100% funding and NHSWCD coordinates the installation of the BMPs with local contractors. The HOW Program also works to implement

SCMs on public City-owned properties, such as cisterns at City fire stations and tree plantings within City parks, and to promote green infrastructure to developers.

Division of Water Resources Response:

Figure 4-3

Comment noted, no changes made at this time. We may revamp the map in the future as time allows.

Chapter 4, page 4

2016 land cover data was the most recent available as of the public comment period.

Chapter 6

The link to the Bradley & Hewlett's Creek Watershed Restoration Plan works in the Word version of the document, but not the PDF version. I updated with the link.

Added additional information about HOW and corrected the hyperlink.

Commenter: NC Coastal Federation

North Carolina
Coastal Federation
Working Together for a Healthy Coast

July 26, 2021

To: Ms. Robin Hoffman
Basin Planner
DWR, Water Planning Section
1611 MSC, Raleigh, NC 27699
Via: robin.hoffman@ncdenr.gov

RE: Draft 2021 White Oak River Basin Water Resources Plan

Dear Ms. Hoffman:

Please accept the following comments on the proposed Draft 2021 White Oak River Basin Water Resources Plan (Plan) on behalf of the North Carolina Coastal Federation.

The federation is a non-profit organization dedicated to protecting and restoring the North Carolina coast. Our organization represents 16,000 supporters statewide and works with the public, state and federal agencies and local governments to communicate and collaborate towards solutions that lead to the stewardship and resiliency of our coast. Since 1982, the federation has been working with coastal communities and other partners to protect and restore coastal water quality, natural habitats, and public beach access, which are intricately tied to our coastal economy. We strive to support and enhance the natural coastal environment. In doing so, we continue to promote stronger and more resilient coastal communities.

Clean water is the backbone of coastal North Carolina. This is the principle the federation was founded on and has worked to safeguard since it was created thirty-nine years ago. The importance and value of interdependency of clean and healthy waters and thriving coastal communities goes beyond natural environment. Today, clean water supports our state's billion-dollar tourism industry. North Carolina beaches and inlets generate $3.7 billion in revenue and directly support over 59, 535 jobs in coastal communities.[1] Aquaculture alone contributes $56 million to the state, while crab and finfish fisheries are worth over $160 million.[2]

[1] North Carolina Ocean's Economy. January, 2017.
https://ncseagrant.ncsu.edu/ncseagrant_docs/products/2010s/NC_Ocean_Economy_White_Paper.pdf
[2] North Carolina Department of Agriculture and Consumer Services; Marketing – Aquaculture
https://www.ncagr.gov/MARKETS/AQUACULTURE/statistics.htm

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Nature-Based Stormwater Solutions Action Plan Provides Tools

The federation applauds and supports the Plan's proposal to encourage the use of green infrastructure to minimize the impact of stormwater runoff, and this improve water quality and minimize flooding. Change in land use and natural hydrology over the past decades has decimated the water quality in our state. To implement this proposal, we strongly recommend that the Plan relies on the recommendations in the recently published Nature-based Stormwater Strategies Action Plan (NBSS).[3] The Action Plan was developed with input from over 60 work group members, representing North Carolina state and local government agencies, businesses, universities, non-profits and other sectors. It identifies guiding principles, recommendations and actions within a proposed framework of watershed management.

The core of the NBSS demonstrates that successful water quality improvement and flood reduction program should rely on volume-based watershed management strategy. This method allows strategic evaluation, identification and ultimate prioritization of targeted projects to improve water quality. The key principle of nature-based stormwater strategies is to maintain or mimic a site's natural hydrology and capacity to collect, soak in and filter stormwater runoff. This can be achieved by implementing bioretention, disconnected impervious surfaces, permeable pavers and large-scale watershed restoration.

The state has recognized that nature-based strategies are key to ensuring a more resilient future. North Carolina has set the stage to use nature-based stormwater strategies, especially to address localized flooding, by defining low-impact development and runoff volume matching as stormwater management options.[4,5] Additionally, the North Carolina Climate Risk Assessment and Resilience Plan asserts that "the time to implement NBS (nature-based solutions) is *now* due to the time required to plan, implement and grow these solutions."[6] Nature-based stormwater strategies are not only an investment in cleaner water, reduced flood damages, and safer communities, but also in parks, preserving rural character, job creation, local businesses, and economic development.

Nutrient Loading Must Be Addressed in a Comprehensive Manner

The federation takes an active role in the protection of the North Carolina's coastal water quality and applauds recommendations to advance the Nutrient-Sensitive Waters Strategy as a much-needed stepping stone towards maintaining and improving the health of the state

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[3] Action Plan for Nature-Based Stormwater Strategies. North Carolina Coastal Federation. https://www.nccoast.org/wp-content/uploads/2021/03/NBSS-Action-Plan.pdf

[4] N.C. State University, "Low Impact Development: A Guidebook for North Carolina" (2009), https://digital.ncdcr.gov/digital/collection/p16062coll9/id/232781.

[5] Stormwater Design Manual, NC Department of Environmental Quality, accessed October 30, 2019, https://deq.nc.gov/about/divisions/energy-mineral-land-resources/energy-mineral-land-permit-guidance/stormwater-bmp-manual.

[6] North Carolina Department of Environmental Quality, "NC Climate Risk Assessment and Resilience Plan" (2020),https://deq.nc.gov/energy-climate/climate-change/nc-climate-change-interagency-council/climate-change-clean-energy-17

waters. However, we believe that a more comprehensive plan must be developed to address the nutrient loading in White Oak River and other water bodies in the state.

In 1995 the federation and its partners organized the North Carolina Nutrient Summit to discuss and explore solutions to the nutrient loading problem.[7] The partners came together to learn about the nutrient enrichment, to understand its impacts and to discuss future management strategies. The Summit Report (attachment A) laid out consequences of the decades-long water quality degradation process caused by excessive nutrient loadings, most importantly nitrogen in brackish and phosphorus in fresh waters. It noted that excessive nutrient loading, known as eutrophication causes loss of submerged aquatic vegetation, algal or fish population shifts, disruption of the aquatic food chain among others. In addition, algal blooms caused by excess in nutrients loading causes fish kills, choke seagrasses that serve as habitat and rob waters of life-sustaining habitat. One of the top Summit's recommendations was to initiate a comprehensive monitoring program to follow trends in water quality.

Unfortunately, little has changed since the Summit in 1995. Data collection and water monitoring are still scarce and phosphorus and nitrogen still haven't made it to the sampling and monitoring list.

In another effort to influence the nutrient loading monitoring the federation submitted a comment letter to the state's proposed nutrient criteria development plan in 2013. In the letter we indicated that the lack of monitoring, specifically nitrogen and phosphorus in estuarine and coastal waters is troublesome and will hamper coastal management efforts.

Nutrient loadings can cause toxic algal blooms that affect the water in many negative ways: reduce dissolved oxygen levels. Nutrient rich waters also have negative effect on coastal marshes. These coastal wetlands provide important ecosystem services, cycling nutrients and efficiently transforming biologically-available nitrogen compounds into nitrogen gas, thereby reducing nitrogen loading to the coastal ecosystem. Prolonged nitrogen addition to coastal marshes has been shown to degrade the integrity of the marsh complex, lowering its ability to cycle nutrients and leading to loss of salt marsh area.

Furthermore, many outstanding resource waters (ORW) and high-quality waters (HQW) are located in the White Oak River Basin. The law requires the water quality in the ORW bodies to be of excellent quality based on physical, chemical and biological information.[8] Nitrogen and phosphorus provide insight into trends for some of the critical physical and chemical attributes of ecological systems, and are one of the nine critical national-scale indicators for water quality.[9] Inclusion of nitrogen and phosphorus indicators in the water quality standards will

[7] Event partners: N.C. Sea Grant College Program; N.C. Department of Environmental Health, and Natural Resources; N.C. Environmental Defense Fund; UNC Water Resources Research Institute.
[8] 15A NCAC 02B. 0225
[9] EPA Physical and Chemical Attributes
https://www.epa.gov/report-environment/physical-and-chemical-attributes#roe-indicators

help identify impaired waters and increase the ability to manage the health of rivers, streams, estuaries and drinking water.

The state is currently developing a nutrient criteria plan for the Albemarle Pamlico Sound and Chowan River that could be used as a model, but there are other such plans around the country such as the ones in Tampa Bay and Chesapeake Bay.

The federation maintains that an implementation of a comprehensive water quality monitoring plan that uses relevant monitoring parameters such as nitrogen and phosphorus and is based on best available science is paramount.

Submerged Aquatic Vegetation Loss Must Be Reversed

Another important reason for addressing the nutrient loading as well as other critical water quality factors is the preservation and recovery of the submerged aquatic vegetation (SAV). The Plan needs to address the troubling loss of SAV.

SAV is the various seagrass species that grow along estuarine edges. SAV areas provide shelter, food, and nurseries for many species such as blue crabs, spotted sea trout, red drum, snapper, Atlantic croaker, bluefish, mullet, spot, silver perch, flounder, hardshell clams, shrimp, and bay scallops. Further, SAV filters nutrients and improves water quality; prevents shoreline erosion and helps stabilize the coastal ecosystem; collects debris and sediment to form barrier island dunes; and, sequesters carbon that decreases the impacts of greenhouse gases that contribute to climate change. Abundant SAV contributes to healthy estuaries and coastal communities. Further, SAV has immense economic value. For example, SAV fuels commercial and recreational fishing, bringing jobs and profits to the local economy, and increases residential property values. A study in Chesapeake Bay estimated that SAV generates about $1.7 million in additional tax revenue for local counties each year.[10]

In addition to the provision of an array of ecosystem services SAV supports commercial and recreational fisheries which hold historic and cultural value in North Carolina. Many marine species find shelter in SAV. For example, SAV is vital for the survival of blue carbs. The blue crab fishery constitutes 25% of the commercial fishing in the state and has been valued at $46 millions annually, providing 886 jobs.[11]

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[10] Guignet, D., Griffiths, C., Klemick, H., & Walsh, P. J. (2017). The implicit price of aquatic grasses. *Marine Resource Economics*, *32*(1), 21-41.

[11] Sutherland, S. A., von Haefen, R. H., Eggleston, D. B., & Cao, J. (2021, June). *Economic Valuation of Submerged Aquatic Vegetation in the Albemarle-Pamlico Estuary*. Albemarle-Pamlico National Estuary Partnership (APNEP). https://apnep.nc.gov/media/1912/open

However, over the past century SAV has seen a staggering 29% global decline.[12] Among the many culprits for the SAV loss are coastal development, development of hardened structures, climate change but the main factors that affect SAV distribution, abundance and recovery are water quality and clarity. These factors can be negatively affected by stormwater runoff, erosion, increased sedimentation, nutrient loads (eutrophication). Studies consistently show that SAV is especially sensitive and intricately tied to water quality.[13]

While North Carolina still prides itself with the highest SAV abundance on the East Coast, the state has experienced significant loss of SAV. Recent study produced for Albemarle Pamlico National Estuary Partnership (APNEP) found that between 2006 and 2013 SAV loss in that estuary declined by 5,686 acres or 5.6% of the estuarine acreage.[14] The eastern portion of the White Oak River Basin is included in the Albemarle-Pamlico Estuarine System. Furthermore, temporal monitoring of area from Barden's Inlet at Cape Lookout to Bogue Inlet, which is within the White Oak River Basin shows a 10.5% of SAV loss (average 1.7% per year).[15] The APNEP study estimates showed that this SAV lost equates to a monetary loss of about $1,291 per acre.[16]

Mitigation of Shoreline Erosion Must Shift from Hardened to Soft Structures

Traditional hardened structures such as bulkheads that dominate the sound shoreline erosion mitigation strategies have numerous environmental and financial drawbacks. They increase water turbidity which in turn decreases water quality and contributes to habitat loss (i.e. SAV loss). To alleviate erosion in the White Oak River Basin the Plan needs to strongly encourage a shift from implementing hardened erosion control structures (i.e. bulkheads and sea walls) to soft ones such as living shorelines. There is an abundance of scientific studies that shows the causal relationship between the existence of bulkheads and erosion, as well as studies that show the benefit and efficacy of living shorelines in addressing sound erosion.

As defined by the National Oceanic and Atmospheric Administration (NOAA), a *living shoreline* is a broad term that encompasses a range of shoreline stabilization techniques along estuarine

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[12] Coastal Habitat Protection Plan. Draft 2021 Amendment. https://files.nc.gov/ncdeq/Marine-Fisheries/coastal-habitat-protection-plan/chpp-steering-committee-meetings/august-3--2021-chpp-st-comm-meeting/CHPP-2021-Amendment-Draft-20210720-CSC.pdf

[13] Ibid.

[14] Sutherland, S. A., von Haefen, R. H., Eggleston, D. B., & Cao, J. (2021, June). *Economic Valuation of Submerged Aquatic Vegetation in the Albemarle-Pamlico Estuary*. Albemarle-Pamlico National Estuary Partnership (APNEP). https://apnep.nc.gov/media/1912/open

[15] Coastal Habitat Protection Plan. Draft 2021 Amendment. https://files.nc.gov/ncdeq/Marine-Fisheries/coastal-habitat-protection-plan/chpp-steering-committee-meetings/august-3--2021-chpp-st-comm-meeting/CHPP-2021-Amendment-Draft-20210720-CSC.pdf

[16] Sutherland, S. A., von Haefen, R. H., Eggleston, D. B., & Cao, J. (2021, June). *Economic Valuation of Submerged Aquatic Vegetation in the Albemarle-Pamlico Estuary*. Albemarle-Pamlico National Estuary Partnership (APNEP). https://apnep.nc.gov/media/1912/open

coasts, bays, sheltered coastlines, and tributaries. It is usually made of native materials.[17] Living shorelines can be made from native vegetation alone, or incorporate vegetation (or other soft elements) in combination with some type of harder shoreline structure, such as oyster reefs or rock sills, for added stability. The main benefit of living shorelines is maintaining the continuity of the natural land-water interface and reducing erosion while providing habitat value, all of which enhances coastal resilience.[18]

On the opposite end of the shoreline erosion mitigation spectrum are hardened structures such as bulkheads and seawalls that now dominate the practice of coastal erosion mitigation. According to the NOAA's guidelines "bulkheads have adverse effects on adjacent habitats" and that "shoreline hardening from structures like bulkheads can cause adverse coastal habitat impacts, including the loss of shallow intertidal bottom substrate from scour, loss of fringing marshes, decline of intertidal or shallow water habitats like submerged aquatic vegetation (SAV), and a decrease in benthic abundance and diversity."[19] The adverse impacts of bulkheads outlined by NOAA findings are echoed more broadly throughout the scientific literature on estuarine shorelines, as well as by expert scientists in the field.

There is a growing consensus that living shorelines provide better erosion protection during storm events than hardened alternatives. In 2014, a study assessed the performance and durability of living shorelines compared to bulkheads after Hurricane Irene. The study concluded that living shorelines are more durable and better protect shorelines from erosion than the bulkheads. Specifically, Hurricane Irene damaged 76 percent of surveyed bulkheads, while causing no damage to living shorelines.[20]

Scientific studies have found that as sea level rises, coastal wetlands (i.e. living shorelines) can naturally resist submergence by growing landward, trapping sediments and decaying plant matter through a process called *vertical accretion*.[21, 22, 23, 24] If wetlands are able to keep pace with the rate of sea level rise, fewer wetlands will be lost. However, the presence of hardened structures along estuarine shorelines will "squeeze" wetlands between development and the

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[17] National Oceanic and Atmospheric Administration. (2015). Guidance for Considering the Use of Living Shorelines. https://www.habitatblueprint.noaa.gov/wp-content/uploads/2018/01/NOAA-Guidance-for-Considering-the-Use-of-Living-Shorelines_2015.pdf 2015

[18] Ibid.

[19] Ibid.

[20] Gittman, R. K., Popowich, A. M., Bruno, J. F., & Peterson, C. H. (2014). Marshes with and without sills protect estuarine shorelines from erosion better than bulkheads during a Category 1 hurricane. *Ocean & Coastal Management*, *102*, 94-102.

[21] Morris, J. T., Sundareshwar, P. V., Nietch, C. T., Kjerfve, B., & Cahoon, D. R. (2002). Responses of coastal wetlands to rising sea level. *Ecology*, *83*(10), 2869-2877.

[22] Lane, R. R., Day, J. W., & Day, J. N. (2006). Wetland surface elevation, vertical accretion, and subsidence at three Louisiana estuaries receiving diverted Mississippi River water. *Wetlands*, *26*(4), 1130-1142.

[23] United States Geological Survey; Science for a Changing World. (1997). Global Warming, Sea Level Rise, and Coastal Marsh Survival. FS-091-97. https://www.nwrc.usgs.gov/factshts/fs91_97.pdf

[24] Kirwan, M. L., & Murray, A. B. (2007). A coupled geomorphic and ecological model of tidal marsh evolution. *Proceedings of the National Academy of Sciences*, *104*(15), 6118-6122

advancing sea as they migrate landward, preventing the creation of new marsh and resulting in the total loss of wetlands in some areas.[25]

Another study that included both Hurricanes Irene and Arthur concluded that 93 percent of evident post-hurricane shoreline damage was attributed to bulkheads or bulkhead hybrids. In addition, a higher proportion of surveyed homes with bulkheads reported having property damage from hurricanes than homes protected by living shorelines.[26]

Living shorelines are not only more effective and more durable than bulkheads but they are also *less costly to install, maintain and repair*. A study showed that compared to residents with revetments and natural shorelines, property owners with bulkheads reported double the price to repair hurricane damage to their property.[27] Bulkheads usually need to be replaced completely when destroyed, whereas marsh sills can have partial to no repair. This contributes to the higher costs of replacement and repair of bulkheads.

The policy framework around living shorelines has been gaining national attention. Several states offer a simplified permitting process for the construction of these structures. North Carolina is the latest state to join this trend. In an effort to promote living shorelines, the N.C. Coastal Resources Commission has approved a general permit, allowing living shorelines to become more readily available to the public. In a similar fashion, the U.S. Army Corps of Engineers' Wilmington District recently aligned its shoreline stabilization policies with those of the state and the rest of the country, making living shorelines easy to permit.

In summary, by mimicking nature, living shorelines outperform bulkheads in their role of protecting coastal properties and infrastructure from erosion, increase resilience, preserve and enhance coastal habitat and improve water quality.

White Oak River Basin is *exceptionally well suited* for living shorelines. The area's suitable conditions for living shorelines are not just evident it their abundance but also in other right conditions such as salinity, bottom substrate, geology and morphology of the basin.

This can be done by encouraging the establishment of cost-share programs that provide incentives to property owners to install living shorelines instead of bulkheads or other hard erosion control structures. In addition, for any erosion prone infrastructure that your funding helps to fund it should be required that living shoreline practices be used to protect those investments when they are the best environmental alternative for shoreline stabilization.

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[25] Titus, J. G. (1988). Sea level rise and wetland loss: an overview. Titus, JG Greenhouse Effect, Sea Level Rise, and Coastal Wetlands. *US Environmental Protection Agency. Washington, DC*, *186*

[26] Smith, C. S., Gittman, R. K., Neylan, I. P., Scyphers, S. B., Morton, J. P., Fodrie, F. J., ... & Peterson, C. H. (2017). Hurricane damage along natural and hardened estuarine shorelines: Using homeowner experiences to promote nature-based coastal protection. *Marine Policy*, *81*, 350-358.

[27] Ibid.

In the recent decades North Carolina has invested large amounts of state funds to protecting clean water and enhancing water quality. For example, Clean Water Management Trust Fund that was established in 1996 has awarded through grants hundreds of millions of dollars to protect and enhance coastal water quality.[28] North Carolina Ecosystem Enhancement Program also provides significant funds for coastal water quality restoration. More recently, the state also took notice of the overall benefits of living shorelines and has recently invested over $500,000 in cost-share programs to assist landowners in implementing living shorelines. Furthermore, about $2 millions are proposed in the current state budget for the implementation of living shorelines.

Implement Local Watershed Plans to Improve Water Quality

As the Plan recognizes, stormwater runoff is detrimental to water quality and all its ecosystem services. Success of the shellfish aquaculture industry is directly tied to water quality and is strongly affected by the stormwater runoff. The state recognized the growing interest in the industry[29] and North Carolina's potential and mandated a comprehensive strategic plan to understand how to better foster the industry's development. The federation led a multi-stakeholder process and developed the North Carolina Shellfish Strategic Plan that sets an ambitious plan of growing the industry to $33 million in farm gate value by 2030. The legislature implemented a number of the strategies proposed in the plan when it passed a shellfish aquaculture legislation in 2019.

Given that the industry strongly depends on clean water it is imperative to work toward protecting and improving water quality in the basin. For example, the most affected water body in the basin by shellfish closures is the Newport River. In 2017 the area was closed for shellfish harvest more than a third of the year.

[28] In the recent decades North Carolina has invested large amounts of state funds to protecting clean water and enhancing water quality. For example, Clean Water Management Trust Fund (CWMTF) that was established in 1996 has awarded through grants hundreds of millions of dollars to protect and enhance coastal water quality. According to 2007 CWMTF Annual Report two N.C. coastal regions (Northern and Southern Coastal Planes) received approximately $368 millions from 1997-2007. North Carolina Ecosystem Enhancement Program also provides significant funds for coastal water quality restoration.

[29] Shellfish lease applications increased by twelve-fold in the last 7 years

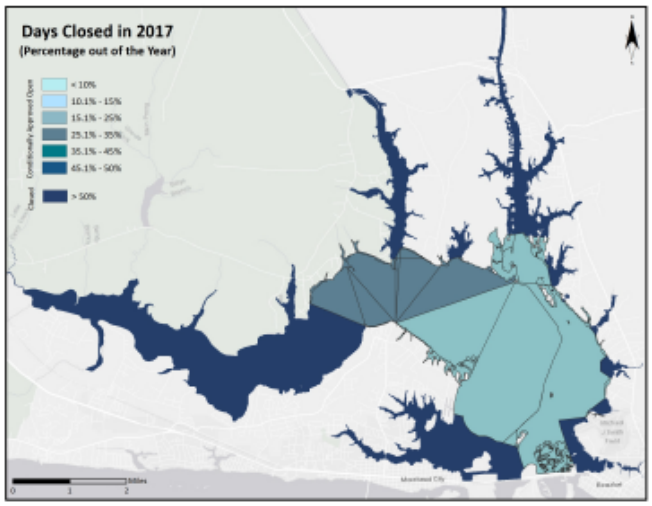

Figure 1: Newport River – days closed for shellfish harvest in 2017.
Source: North Carolina Coastal Federation

A proven method to address water quality in small waterbodies is development of watershed plans. The plans focus on infiltrating stormwater runoff in place instead of transporting it to the nearest water body. Stormwater runoff reduction measures installed through watershed plans have been shown to reduce bacteria, nutrients and sediment by up to 90 percent. Funded by the U.S. Environmental Protection Agency and other partners, the federation developed the Watershed Management Planning Guidebook, outlining planning strategies and techniques that local governments can adopt to improve water quality.[30] The federation has worked with many local governments to develop and implement these plans (Beaufort, Swansboro, Pine Knolls Shores, Atlantic Beach).

Summary of recommendations

The federation supports the proposed Plan and commends the effort to address stormwater runoff and implement nature-based strategies. To further improve water quality and habitat in the basin the federation further recommends:

1. Rely on the Nature-Based Stormwater Strategies Action Plan to implement nature-based strategies that foster water and habitat protection.
2. Develop a comprehensive nutrient monitoring plan for the basin that would at least include phosphorus and nitrogen and increase the number of existing monitoring stations.

[30] Watershed Restoration Planning Guidebook. North Carolina Coastal Federation. https://www.nccoast.org/wp-content/uploads/2019/05/Guidebook_04-01-2018.pdf

3. Study the loss of SAV in the basin, monitor their abundance and implement strategies that will foster protection and recovery of SAV.
4. To address shoreline erosion in the basin and simultaneously improve water quality and clarity implement living shorelines and devise a plan that will lead to a paradigm shift from bulkheads and seawalls to soft erosion control structures.
5. Encourage local governments to develop watershed restoration plans to reduce the stormwater runoff.

Thank you for taking our comments under consideration.

Sincerely,

Ana Zivanovic-Nenadovic
Assistant Director of Policy

Division of Water Resources Response:

In response to comments from the NC Coastal Federation, added the following recommendation in the Executive Summary: "Encourage local governments to develop watershed restoration plans to reduce stormwater runoff, implement living shorelines and soft erosion control structures, and encourage nature-based stormwater strategies to foster water and habitat protection. "

Commenter: NC Forest Service:

We appreciated the opportunity to look these over and thank you for sending over the word documents. While reading through "1.0 Overview," I noticed the FPG inspection numbers that we initially provided were incorrect. I have attached an edited copy of the Overview Internal Review document with correct numbers on pages 11-13. I used the track changes function, but please let me know if you would prefer a different method to show my changes or have any questions about the corrections. I also made a few grammatical suggestions throughout the Forestry text (pages 11-15).

For "6.0 Local Initiatives," the only comment I have is that in section *6.3.2 Conservation of Forests* on page 11, there is a sentence that states "A portion of the White Oak River basin is included in the state's Forest Legacy Priority Areas, illustrated in Figure , which is excerpted…"

I believe the figure referenced in this sentence should be Figure 6.1. It appears that someone may have just forgotten to fill that in.

Thank you again and please let us know if you have questions or need anything else.

Caroline

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Division of Water Resources Response:

All data was updated with the figures provided by Ms. Durham. Figure 6.1 was properly referenced.

Division of Soil and Water Conservation comments:

General: spelling and grammar errors noted.

Chapter 1

Section 1.4.1

2012 agricultural census data was not discussed in this section.

Text in the last paragraph is bolded, if it is a recommendation, should be moved to another section

Section 1.4.2

Timber Harvest Inspections: Why were so many out of compliance in the time period of 2007-2012?

Section 1.6.1

…. "By increased barrier island elevation"? Intuitively it seems like shoreline erosion will be increased if barrier island elevations are decreased… Also where is this reference listed?

Chapter 6

Section 6.1.5

Table 6-1. Add information about the NC Envirothon and the NC Coastal Envirothon competitions organized through DSWC.

Section 6.2

Include information about Envirothon

Section 6.3

When discussing growth management and land-use planning, it might be useful to include mention of the Voluntary Agricultural District and Enhanced Voluntary Agricultural District program that is offered through the NC Agriculture Development and Farmland Preservation Trust Fund. *(comment cuts off and we could not retrieve the rest).*

Section 6.4.4

Regarding our cost share percentages, for equity considerations, it should be noted that farmers who qualify as beginning farmers or limited resource farmers, and farmers participating in an enhanced voluntary agricultural district are eligible to receive 90% cost share up to $100,000 per year.

Community Conservation Assistance Program (CCAP)

Suggest adding the following language: "The CCAP program has a modest annual budget of approximately $136,000. Funding for this program is solely allocated through a competitive regional application process limited to $20,000 per application. Yearly SWCDs report significant CCPA funding needs beyond what the program can currently accommodate"

Agricultural Water Resource Assistance Program (AgWRAP)

Would revise language. Here's a suggestion: "AgWRAP is designed to identify opportunities to increase water use efficiency and available storage on agricultural land through implementation of various BMPs. AgWRAP program funding, similar to the ACSP program, is allocated directly to districts to manage locally. However, a portion of AgWRAP funds are allocated through a…" *(comment cuts off, cannot access the rest of it because of format)*.

USDA-NRCS Environmental Quality Incentives Program (EQIP)

I would encourage Basin Planning staff to reach out to representatives from NRCS to add additional information about USDA NRCS programs. State conservation funding is approximately on quarter of federal funding available through USDA partners. There are additional federal programs that could be described in more detail here.

Chapter 8

Section 8.1.5 Agricultural Water Use

State reason why data was not disclosed or reported. May be due to one of the following reasons:

1. There is limited farming operations in the portions of the counties in the watershed.
2. Individuals were not required to report because they were below the threshold required to report.
3. Reporting on farms meeting this threshold in those counties could not be achieved in…*(comment cut off due to format, could not see the rest)*

Table 8-3

What is the purpose of a table without any data? This can simply be covered by previous language. Would recommend reaching out to Karen Bryan with Ag Statistics to report and summarize this data for this basin plan.

Division of Water Resources Response:

Chapter 1

Section 1.4.1

Absence of 2012 agricultural census data noted

Text was bolded in error; emphasis was removed but text was left in place.

Section 1.4.2

Timber Harvest Inspections statistics were in error; they were updated during the public comment period.

Section 1.6.1

The text is factually correct as written. Reference added.

Chapter 6

Section 6.1.5

Table 6-1. Will add information about the NC Envirothon and the NC Coastal Envirothon competitions organized through DSWC.

Section 6.2

Will include a mention of the Envirothon

Section 6.3

Comment noted

Section 6.4.4

Comment noted

Community Conservation Assistance Program (CCAP)

Comment noted, will add some updated language.

Agricultural Water Resource Assistance Program (AgWRAP)

Comment noted, will add some updated language.

USDA-NRCS Environmental Quality Incentives Program (EQIP)

Hyperlink is provided to the NRCS website for access to information about additional programs. No changes made.

Chapter 8

Section 8.1.5 Agricultural Water Use

Table 8-3

Comment reviewed internally w/ Water Planning Section management and the Water Supply Planning Branch (WSPB). DWR feels that each of the programs for water withdrawal (including the AWUS) are represented factually. DWR will continue to work with interested parties in identifying information sharing opportunities and how best to represent water use in future basin plans. No changes made.