

APPENDIX C. PUBLIC COMMENT WRITTEN LETTERS

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October 21, 2021

Division of Marine Fisheries Offices - NC DEQ
CHPP 2021 Amendment Comments
P.O Box 769, Morehead City, N.C. 28557

To whom it may concern,

I am writing to submit public comment on behalf of 461 state residents in support of the updates to the Coastal Habitat Protection Plan (CHPP). The proposed update includes strong commitments to protecting and restoring coastal habitats that birds depend on. Please find the comments and signatures below.

Sincerely,

Cat Bowler
Coastal Resilience Project Manager
Audubon North Carolina

October 21, 2021

Division of Marine Fisheries Offices - NC DEQ
CHPP 2021 Amendment Comments
P.O Box 769, Morehead City, N.C. 28557

To whom it may concern,

As a North Carolinian who appreciates birds and enjoys spending time at our coast, I support the 2021 Coastal Habitat Protection Plan (CHPP) update and the commitment it represents to protecting and restoring the coastal habitats in North Carolina that birds need.

Wetlands and submerged aquatic vegetation, for example, seagrass beds, are critical components of North Carolina's coastal ecosystem that support robust fisheries and provide habitat and food for birds like waterfowl and colonial nesting waterbirds like Royal Terns and Brown Pelicans.

Among the most effective and cost-effective ways to protect coastal ecosystems is by conserving and restoring nature. I join Audubon North Carolina in supporting CHPP recommendations to strengthen funding for, and increase implementation of, nature-based solutions like living shorelines and oyster reef restoration that serve as critical habitat for birds and fish, mitigate climate change, enhance water quality, reduce flood risk, and provide many other cultural and economic benefits to communities.

Sincerely,

Signatures removed for privacy



**North Carolina
Conservation
Network**

234 Fayetteville Street
5th Floor
Raleigh, NC 27601
919.857.4699

October 20, 2021

NC Department of Environmental Quality
CHPP 2021 Amendment Comments
P.O Box 769
Morehead City, NC 28557

Re: CHPP Comments

Dear Department of Environmental Quality,

Please see the attached petition signed by 796 North Carolina residents who support the Department of Environmental Quality's (DEQ) Coastal Habitat Protection Plan (CHPP). As written, the plan ensures that meaningful action will be taken to protect our water quality, and it helps make our coast more resilient in the face of climate change. The CHPP plan sets forth a clear directive for all agencies working to protect our coastal habitats and it's critical that the plan is adopted.

Specifically, we are glad that the plan includes recommendations for strong action to improve water quality and make our coast more resilient. Please keep these strong, explicit recommendations in the final plan – and then implement the recommendations in the coming years to restore and protect our coast.

Thank you for your time.

A handwritten signature in black ink that reads "Brittany Iery".

Brittany Iery, Online Organizer
NC Conservation Network

Dear Department of Environmental Quality,

We the undersigned, support the Department of Environmental Quality's (DEQ) Coastal Habitat Protection Plan (CHPP). As written, the plan ensures that meaningful action will be taken to protect our water quality, and it helps make our coast more resilient in the face of climate change. The CHPP plan sets forth a clear directive for all agencies working to protect our coastal habitats and it's critical that the plan is adopted.

We're particularly excited that the plan includes recommendations for strong action to improve water quality and make our coast more resilient, including:

- Developing and adopting water quality standards – for light penetration and for management of nutrient pollution – that will keep our estuaries healthy and productive (actions 4.7- 4.9).
- Improving investments and oversight of water infrastructure to ensure that wastewater systems are resilient in the face of sea level rise and do not leak pollutants into coastal waters as a result of poor maintenance (actions 7.1 – 7.5).
- Advancing nature-based solutions to help insulate communities from sea level rise and increasingly intense storms (actions in chapter 9).
- Restoring and protecting wetlands, which buffer storm impacts and provide vital nursery habitat for vibrant coastal fisheries (actions 5.1 – 5.17).

Please keep these strong, explicit recommendations in the final plan – and then implement the recommendations in the coming years to restore and protect our coast.

Thank you.

Sincerely,

Signatures removed for privacy



Our mission is to identify, protect, and restore
the significant resources of the Albemarle-Pamlico estuarine system.

Secretary Elizabeth Biser
NC Department of Environmental Quality
217 West Jones Street
Raleigh, North Carolina 27603
Via email

October 21, 2021

Dear Secretary Biser,

On behalf of the Albemarle-Pamlico National Estuary Partnership's (APNEP) Leadership Council (LC), I am pleased to write this letter in support of many of the recommended actions contained within the 2021 Amendment to North Carolina's Coastal Habitat Protection Plan (CHPP). The APNEP is part of the National Estuary Program. It is a water quality program funded by the EPA and housed in NC's Department of Environmental Quality (DEQ). To that end, the LC is especially pleased to see that much of the amendment is focused on water quality and water quality improvements. We believe that a number of the recommended actions compliment the objectives of the *2012-2022 Comprehensive Conservation & Management Plan (CCMP)* for the Albemarle-Pamlico estuarine system.

Specifically, the LC in consultation with the APNEP Scientific and Technical Advisory Committee (STAC), views the following recommended CHPP actions synergetic with the CCMP:

- 1) *Submerged Aquatic Vegetation Protection and Restoration through Water Quality Improvements*: Mapping and Monitoring (4.4.3), Research (4.4.5) and Outreach (4.4.6).
- 2) *Wetland Shoreline Protection and Enhancement with Focus on Nature-Based Solutions*: Mapping and Monitoring (5.4.1), Conservation (5.4.2) and Research (5.4.4).
- 3) *Wastewater Infrastructure Solutions for Water Quality Improvement*: Research (7.4.3).
- 4) *Coastal Habitat Mapping and Monitoring to Assess Status and Trends*: All recommended actions.

In addition, *Submerged Aquatic Vegetation Protection and Restoration through Water Quality Improvements*: Planning (4.4.2) and Potential Rulemaking (4.4.4) directly support the CCMP and are strongly endorsed by the LC.

The APNEP Leadership Council supports the cross cutting actions noted in this letter. We look forward to working with the other agencies within DEQ to not only improve the water quality in NC and southeastern VA, but to also improve the quality of life for all of our citizens. Thank you for the opportunity to provide these comments.

Sincerely,

Dr. Kirk Havens
Chair – APNEP Leadership Council

CCA NC Comments on Draft Amendment 2 to the Coastal Habitat Protection Plan October 18, 2021

From the Draft Amendment 2 to the Coastal Habitat Protection Plan (CHPP), *The coastal habitats of North Carolina are the foundation for healthy fisheries.* The significance of this statement should not be lost in the 261-page draft, it should be highlighted and restated over and over. **Failure to provide a healthy foundation for our fisheries will result in continued failure in building healthy fisheries.**

The Draft also states that, *although progress has been made to implement CHPP recommendations, water quality has generally shown a declining trend with concerns about degrading submerged aquatic vegetation (SAV), shell bottom, and wetlands.* To address these concerns, and *Similar to previous years, the CHPP includes four overarching goals for the protection of coastal habitats in NC (recommendations under these goals were reviewed and modified by the CSC): 1. Improve effectiveness of existing rules and programs protecting coastal habitats. 2. Identify and delineate strategic coastal habitats. 3. Enhance coastal habitat and protect it from physical impacts. 4. Enhance and protect water quality.*

1) No Discussion in the Draft Amendment Re: Bottom-Disturbing Gear

Several areas of specific concern are highlighted yet there is no discussion within the Draft, nor has there been any discussion by the CHPP Steering Committee on the effects of bottom disturbing gear on these areas of concern:

Shell Bottom

*Due to the combined effects of **habitat destruction**, overfishing, disease, and deteriorated water quality, oyster populations have experienced tremendous declines world-wide, particularly within subtidal oyster reefs that occur along the Mid-Atlantic coastline of the United States. It has been estimated that 85 percent of oysters have been lost globally.*

Submerged Aquatic Vegetation

*Currently, NC is steward to one of the most productive and biodiverse SAV resources on the Atlantic seaboard. **Anecdotal reports indicate SAV beds may be reduced by as much as 50 percent**, especially on the mainland side of the coastal sounds.*

Wetlands

***Wetland resources in the United States have declined considerably (>50 percent) since the colonial period.** It is estimated nearly half of NC's 11 million historical acres of wetlands were lost (physically or functional) between pre-colonial times and the 1980s. The loss of NC's wetlands continues into the 21st century. Approximately 40 percent of total documented coastal wetland losses occurred between 1950 and 2000 with approximately 95 percent of NC's wetland resources in the state's Coastal Plain.*

No discussion has taken place during CHPP Amendment 2 workshops concerning the cumulative effects over time on native oyster reefs, SAV and wetlands from the continued use of destructive commercial bottom-disturbing gear, including, mechanical shellfish harvest (oyster dredges and clam kicking) and shrimp trawlers.

The CHPP has recognized and directed significant interest toward stormwater runoff, *managing stormwater will not only reduce sediment loading as discussed earlier in the chapter, but also nutrient and bacteria loading*, so we no longer ignore the problems we are having with more frequent excessive freshwater flushes and what they bring with them from nutrient overload to heavy metal contamination. **However, Amendment 2 should also recognize and direct interest to the fact that bottom disturbing gear re-suspends much of that sediment, especially the heavy metals that oysters and clams secure in soft bottom.**

There is also emerging evidence that estuarine soft bottom has its own “microhabitat” that serves an important, yet not fully understood, function in improving water quality by removing pollutants in a similar manner to oysters and clams. The food of many juvenile fish is also found in that zone and tickler chains and doors used with trawls disturb and/or destroy that layer on every pass.

In addition, a recent study written by 26 marine biologists, climate experts and economists and published in Nature in March 2021 found that **fishing boats that trawl the ocean floor release as much carbon dioxide as the entire aviation industry**. Bottom trawling pumps out 1 gigaton of carbon every year, according to [a groundbreaking study](#). The carbon is released from the seabed sediment into the water, and can increase ocean acidification, as well as adversely affecting productivity and biodiversity, the study said. **Marine sediments are the largest pool of carbon storage in the world.**

The legislative goal of the CHPP is “...the long-term enhancement of coastal fisheries associated with coastal habitats.” The law specifies that the CHPP identify threats and recommend management actions to protect and restore coastal habitats critical to NC’s coastal fishery resources.

Has the threat of bottom disturbing gear to our coastal habitat not been identified? The CHPP should not go forward without serious consideration and discussion of this threat to the development of healthy fisheries.

2) No Discussion in the Draft Amendment Re: Forage Fish as Habitat

The second glaring omission from discussion has been the absence of any recognition of forage fish as habitat. Forage species are critical species in ecosystems and need protection.

Forage fish are small fish or crustaceans that often that eat phytoplankton and zooplankton (microscopic plants and animals). Phytoplankton captures the suns energy initially and that energy moves up the food chain; thus, forage fish are an indispensable link in that chain because they serve as prey for larger predator fish. Often forage species move in large schools which makes them susceptible to capture by fishing gear, most often trawls.

Forage fish in federal waters have rightly received some attention at the Council level, but other than menhaden, they have been essentially ignored by State regulatory bodies. States such as NC, contain several other species of forage species present in their state waters that remain unprotected and that are overfished. Species such as menhaden, grass shrimp, penaeid shrimp, blue crab, spot, croaker, mullets, pinfish and others lack significant protection.

For example, in NC the most common stomach content of red drum was blue crab, but also included squid and Atlantic Croaker. As for spotted sea trout, the most common prey species were shrimp, threadfin shad and Atlantic croaker. The importance of forage species is no better exemplified than in flounder where they consume 4-8% of their body weight daily. Stomach content analysis of Southern and Gulf flounder yielded multiple species of small forage fish and shrimp.

The current Draft Coastal Habitat Protection Plan (CHPP), as well as many other documents, conclude that habitat includes food. **However, there is no mention of protecting these critical ecosystem components.**

The CHPP should not go forward without a discussion on the role of forage species as critical habitat components and the importance of protecting them. It is the role of the CHPP Steering Committee to inform the Marine Fisheries Commission and to recommend protection for the various habitat components.

3) No Sense of Urgency in Identifying and Establishing Strategic Habitat Areas

*Since the 2016 CHPP, the nomination of Strategic Habitats Areas (SHAs) was completed for all four CHPP regions. The progress made towards establishing baseline habitat conditions through sentinel sites and long-term monitoring of coastal habitats, and **the validation and verification of SHAs in all CHPP regions is the foundation for establishing management thresholds for coastal habitats.** The quality, quantity, and extent of the coastal habitats in North Carolina must be identified before management thresholds can be applied.*

Shrimp trawling by large, industrial, ocean-going vessels capable of pulling 220-feet of headrope, four-barrel rigs, pulling large, heavy otter doors continues in many of these nominated SHAs. This effort is unsustainable from both habitat and bycatch perspectives. Previous CHPPs have failed to identify and delineate SHAs in the Pamlico Sound, and adjacent rivers and creeks, that serve as secondary nursery areas for many economically important finfish and forage species under 15A NCAC 03N.0101. **It is well past time for the CHPP process to actively engage and address bottom disturbing gears and nursery area protection versus giving it lip-service in the plan.**

Until these issues are addressed, the CHPP will remain incomplete. Moreover, coastal ecosystems, and importantly, marine fisheries, will continue to decline until we truly recognize that *the coastal habitats of North Carolina are the foundation for healthy fisheries.*

Coastal Carolina Riverwatch
 700 Arendell Street, Suite 2
 Morehead City, North Carolina 28557



October 21, 2021

North Carolina Department of Environmental Quality
 217 West Jones Street
 Raleigh, NC 27603

Dear Review Team,

Thank you for the opportunity to submit comments regarding the proposed *Coastal Habitat Protection Plan*.

We submit these comments on behalf of **Coastal Carolina Riverwatch**. We represent a coalition of hundreds of eastern North Carolina citizens, committed to protecting our local waterways.

SUMMARY OF COMMENTS AND RECOMMENDED ACTIONS

1. The development of performance criteria for measuring success of management is very important.
 - We recommend that a performance review team be assigned to monitor progress and report out to the community at least once a year.
 - We recommend that annual reports be made available online and that specific measurable goals show performance records in the annual report.
 - Currently, the last available CHPP report (online) is 2015-16.

2. Coastal Carolina Riverwatch's ***Water Quality for Fisheries Program***¹ (WQ4F) works with NC coastal fishing communities to identify top water quality concerns. We recommend that these concerns be included in the CHPP and Industry Working Group recommendations be included as an addendum to/resource for the CHPP.
 - In partnership with ECU's Center for Survey Research, these priority concerns were determined to be **agricultural pollution, stormwater runoff, industrial pollution, plastics, and municipal wastewater and septic system pollution**.
 - Through the WQ4F program an **Industry Working Group**, made up of coastal commercial and recreational fishers, was established to participate in facilitated meetings addressing each of the water quality concerns.

¹ Coastal Carolina Riverwatch. "Water Quality for Fisheries." *Water Quality for Fisheries*, 2021, <https://coastalcarolinariverwatch.org/water-quality-for-fisheries/>. Accessed 21 10 2021.

- The following are the WQ4F Program **Industry Working Group's** prioritized actions. These actions come directly from the coastal fishing community (made up of both commercial and recreational fishers). We request that these action items be considered when finalizing the update to the Coastal Habitat Protection Plan:

I. Industrial Agriculture and Factory Farm Pollution

- Update waste management systems.
- Requirement for pre-storm preparation.
- Evaluation of best management practices.
- Evaluation of hormonal, pharmaceutical, and microbiological contaminants.
- Enhancement of water quality monitoring technologies.
- Conservation practices for coastal, flat topography.
- Bridge gaps between scientists and policymakers for advocacy purposes.

II. Stormwater Pollution

- Green infrastructure policy development through standardizing the use of permeable pavement, green streets, filtration systems, and nature-based infrastructure.
- Reclaiming or enhancing areas with poor stormwater controls.
- Enhance monitoring of stormwater runoff.
- Publicize successful stormwater control efforts.

III. Industrial Pollution

- Reducing industrial activities that utilize industrial chemicals in their processes (ex. PFAS).
- Development of new filtration technologies.
- Enforceable maximum contaminant levels for wastewater treatment facilities.
- Analysis of the effects of all heavy metals on aquatic ecosystems.
- Researching safe alternatives to industrial pollutants.
- Educating consumers on PFAS-containing products.

IV. Plastic Pollution

- Restructuring the manufacturing process of plastics by changing chemical composition and product design.
- Plastic bag, styrofoam, single-use plastic, and straw bans.
- Extended Producer Responsibility policies.
- Studies focused on the interactions of molecules in the environment and the physiological effects on fish.
- Public outreach regarding human contribution to aquatic plastic pollution from land sources.

V. Municipal Wastewater and Septic System Pollution

*we note that this is the primary topic of *CHPP Chapter 7*

- Preventative repairs and updates on current infrastructure.
 - Increase use of ecologically engineered wastewater treatment technologies.
 - Legislation increasing federal funding for updating infrastructure.
 - Establish water quality standards for additional pollutants found in wastewater such as plastics and industrial pollutants.
 - Research effective wastewater treatment infrastructure for coastal regions with high water tables and flooding.
 - Increase community outreach and support for improving wastewater treatment infrastructure.
3. While agriculture is mentioned in the amendment it could be expanded. We request to specifically indicate Concentrated Animal Feeding Operations (CAFOs) as a source of agricultural nutrient pollution.
- Studies in Coastal NC suggest that CAFOs can be a more significant source of nitrogen than fertilizers from row crop agriculture. Under certain hydrological conditions, this nitrogen can be detected in estuaries many miles downstream.²
 - Recommend more comprehensive water quality monitoring related to CAFOs, assessments of cumulative impacts of CAFOs including nutrients and other pollution from both swine operations and the rapidly growing poultry industry, more enforcement following waste management violations, improved transparency in public records and information requests, and assistance for buyout programs.
4. Emerging contaminants are absent from CHPP. These are a threat to coastal habitats because they persist in the environment for undeterminable periods of time resulting in bioaccumulation, endocrine disruption, and reproductive and development issues in fish and aquatic species.³ PFAS and other emerging contaminants are subject to little regulation and monitoring. Research is ongoing and long term data is still developing. Despite proven and suspected impacts on the environment, these contaminants are entering our waters.
- We recommend that PFAS be included in the future of CHPP. Potential actions may include increasing research, imposing restrictions on the release of PFAS and other chemicals, and prioritizing cleanups and mitigation of existing chemical contaminants in our waterways.

² Brown, Colleen & Mallin, Michael & Loh, Ai Ning. (2020). Tracing nutrient pollution from industrialized animal production in a large coastal watershed. *Environmental Monitoring and Assessment*. 192. 10.1007/s10661-020-08433-9.

³Gonsioroski A, Mourikes VE, Flaws JA. Endocrine Disruptors in Water and Their Effects on the Reproductive System. *International Journal of Molecular Sciences*. 2020; 21(6):1929. <https://doi.org/10.3390/ijms21061929>

5. While funding, technical assistance, and incentives for voluntary actions should all be expanded, the need for accountability and enforcement through regulation should be assessed.
 - More regulatory measures should be implemented by the agencies listed in CHPP who are responsible for water quality protection.
 - Voluntary compliance to CHPP and completion of recommended actions may not be met with the same urgency or result in adequate reduction of nutrients, sediments, pathogens, and other forms of coastal pollution.
 - There is a need to address staffing and funding issues resulting in underregulation.
 - Additionally, research must be utilized to identify indicators and thresholds for policy development and enforcement moving forward.

6. As NC moves towards a more sustainable future for our coastal habitats, we emphasize the importance of a just transition.
 - DEQ should reference Environmental Justice tools and consult with communities, experts, and advisors in the event that implantation and actions associated with CHPP are proposed in environmental justice communities.

7. Coastal Carolina Riverwatch requests to be a partner on the following workgroups:
 - **4.4** *By 2022, DEQ will form a workgroup with DWR, Soil and Water Conservation, local governments, and other partners to develop a plan to increase the use of BMPs related to water quality within the SAV waterbody regions by 50 percent (Table 4.5; Figures 4.1-4.9).*
 - **8.1** *By 2022, convene interagency workgroups of DEQ agency staff, academics, and subject matter experts by coastal habitat type (i.e., water column, shell bottom, SAV, wetlands, hard bottom, and soft bottom) to define indicator metrics and identify data gaps and monitoring needs for the ability to determine long-term status and trends of coastal habitats and the estuarine ecosystem.*

8. Coastal Carolina Riverwatch requests to be a partner in the effort to develop, partner-on, and review public education and stewardship programs.
 - **4.13** *By 2022, DEQ Office of Education and Public Affairs will work with local governments and NGOs to start the development of public education and stewardship programs with social media campaigns and citizen science monitoring to increase public awareness of SAV's importance for fish habitat and other co-benefits, as well as instill public commitment to SAV conservation.*

9. We believe the following actions (below with questions) are very important:
- **4.9** *By 2024, EMC will adopt scientifically defensible nitrogen and/or phosphorus criteria if recommended through the NCDP process, to help protect and restore ~12,900 acres of low salinity SAV habitat in the Albemarle Sound SAV waterbody region and continuing with other water bodies that support SAV.*
 - **4.14** *By 2022, DEQ through funding of NCSU by APNEP will provide an economic evaluation of the co benefits SAV provides to the coastal economy in terms of habitat for fish, waterfowl, wildlife, recreation, shoreline stabilization, water purification, and carbon sequestration.*
 - **5.5** *By 2022, DEQ will provide information to NC legislators regarding the need for increased appropriated funds for the three state conservation trust funds to increase conservation of critical wetland properties and critical corridors that will allow for future marsh migration.*
 - **5.9** *By 2025, DEQ will determine if living shoreline projects can be built in a manner that qualifies for salt marsh or nutrient mitigation credits.*
 - **7.1** *By 2024, DEQ will request that funding programs under the purview of the SWIA give additional priority for projects with a direct benefit to sensitive estuarine waters, including SA waters, fish nursery areas, and impaired waters, particularly those adversely impacting estuarine fish and their habitat.*
 - **7.3** *By 2025, DCM and DWR will work with NC Office of Recovery and Resiliency (NCORR) and local governments in the coastal counties to develop strategies regarding flood-proofing wastewater infrastructure; siting new and relocating existing infrastructure away from sensitive estuarine waters and floodplains; upgrading sewer infrastructure; and develop strategic priorities for public and natural infrastructure improvements.*

QUESTIONS

1. How will this be measured? Can this be included in the plan?
 - **5.10** *By 2025, DEMLR and other divisions should increase education, outreach, and training to consultants, local government, and landowners for nature-based stormwater and watershed management strategies.*
 - **7.6** *Prioritize research on alternative wastewater collection system designs that may be better suited for coastal conditions (i.e., alternative sewer systems, composting toilets).*

2. Who is responsible for this?
 - **7.7** *Evaluate the feasibility of re-designing and re-engineering existing systems that are inadequately protecting ground and surface water quality.*

On behalf of the Coastal Carolina Riverwatch team, we thank you for the opportunity to comment on the 2021 amendment to CHPP. As water quality impairment becomes more prevalent across North Carolina, we commend this dedication to improving coastal habitats. We encourage partnership and accountability in the progress of CHPP and respectfully request review of the above comments.

Respectfully,



Lisa Rider, Executive Director
Coastal Carolina Riverwatch



Rebecca Drohan, White Oak Waterkeeper
Coastal Carolina Riverwatch



CREATION JUSTICE MINISTRIES

Justice for God's planet and God's people.

Mr. Jimmy Johnson
North Carolina Department of Environmental Quality
217 W Jones St
Raleigh, NC 27603

Dear Jimmy Johnson,

Creation Justice Ministries (CJM) is a faith-based organization that educates, equips and mobilizes Christian communions/denominations, congregations and individuals to protect, restore, and rightly share God's creation. Based on the priorities of its members, with a particular concern for the vulnerable and marginalized, CJM provides collaborative opportunities to build ecumenical community, guides people of faith and faith communities towards eco-justice transformations, and raises a collective witness in the public arena echoing Christ's call for just relationships among all of creation.

North Carolina is already experiencing more intense hurricanes, more rainfall, and more flooding as a result of climate change. These changes are happening rapidly, and having devastating consequences on vulnerable communities, who are unprepared through no fault of their own. This is an unjust reality and fighting this injustice is at the heart of CJM's mission. As such, CJM is committed to climate action and building climate resilience for all of God's creation, with an awareness that the most vulnerable are also at the most risk for pain and suffering through climate disaster.

Many people need physical and emotional support after a disaster, especially the vulnerable, and our churches naturally provide this support as they are often the center of communities and hubs for social capital. With a changing climate, the need for physical and emotional support will only grow. In order to reduce human suffering and care for all of creation, our faith communities must be prepared today for what will come tomorrow.

As such, CJM supports a public/private partnership that will engage stakeholders in watershed planning and resiliency. CJM believes that our faith communities must be at the table for resilience and watershed-level planning conversations. A stakeholder-driven public/private partnership is the best mechanism for engaging all residents in understanding and planning for the challenges that lie ahead.

Furthermore, CJM supports the Coastal Habitat Protection Plan's recommended actions that protect and restore natural habitats, and increases climate resilience through the restoration and protection of wetlands and living shorelines. These resources are a critical factor for protecting our natural habitats while also providing important benefits including flood mitigation, wave reduction, carbon sequestration and water filtration.

In Faith,

Avery Davis Lamb
Co-Executive Director,
Creation Justice Ministries



October 21, 2021

NC Division of Marine Fisheries

P.O. Box 769

Morehead City, NC 28557

RE: Comments on the North Carolina Coastal Habitat Protection plan 2021 Amendment

Dear NCCHPP Steering Committee members,

The Environmental Defense Fund submits the following comments on the North Carolina Coastal Habitat Protection Program (NCCHPP) 2021 Amendment. EDF appreciates the hard work of NCDEQ and the Steering Committee to develop the comprehensive 2021 Amendments to the NCCHPP. We strongly support the climate change and resilience discussion in Chapter 3 and encourage all future decisions to be based on the latest climate science. The following three comments focus on opportunities to increase coastal habitats in the face of climate change.

To advance protection of submerged aquatic vegetation, support funding for a wide array natural infrastructure practices across various state and federal programs. Table 4.9 notes the need to lessen sediment and nutrient loading to coastal waters that support SAV, a wide array of natural infrastructure practices' function is to reduce sediment and nutrient loading. The NCCHPP should include a Proposed Strategy under section 4.2 calling on state and federal agencies to support natural infrastructure through landowners and local government education, technical assistance, and direct funding to implement practices and projects. With a clear acreage goal for SAV as called for in the NCCHPP (pg 73), the NCCHPP Steering Committee and other agencies and stakeholders can connect SAV goals to support for natural infrastructure investments.

Facilitate implementation of multiple natural infrastructure practices through a regional general permit or other streamlined regulatory approaches. The NCCHPP recognizes the important role of regional general permits for marsh sill to enhance marsh restoration efforts along the coast (pg 31) and for living shorelines (pg 111). As new wetland practices such as flood control wetlands and other natural infrastructure practices are identified for flood mitigation and water quality improvements, an interagency process should evaluate when permits or other approvals are likely to be required. Where appropriate, natural infrastructure practices requiring permits should be considered for inclusion in a regional general permit to facilitate adoption across the coast and coastal plain.

Compound flooding, a growing threat to coastal habitats and communities, should be evaluated through a NCCHPP-organized committee. The growing threat and impacts of compound flooding are increasingly recognized by local residents, coastal communities and state leaders. By increased flooding of wastewater infrastructure, agricultural fields and coastal cities, compound flooding is contributing to coastal habitat degradation through increased nutrient pollution, changing salinity levels and increased sedimentation. As a cross-cutting issue, compound flooding does not fit neatly into any one of the five priority issue papers provided in the 2021 NCCHPP. Compound flooding deserves a committee comprised of agency staff, academic researchers, and other experts to develop an interim report by 2023 and to inform recommendations leading up to the next NCCHPP plan amendment.

North Carolina has world class coastal habitat. The NCCHPP underscores the resources in the state and the need for proactive strategies. EDF is proud to have contributed to earlier versions of the Coastal Habitat Protection Plan and appreciates the opportunity to provide these brief comments on the 2021 Amendment. We look forward to working with NCDEQ and other steering committee members to build resilience for North Carolina's coasts and coastal plain.

Sincerely,

Michelle Lovejoy

Landscapes Resilience Manager



**NORTH CAROLINA
FARM BUREAU FEDERATION, INC.**

PO Box 27766, Raleigh, NC 27611 Phone: 919-782-1705 Fax: 919-783-3593 www.ncfb.org

October 21, 2021

CHPP Comments

P.O Box 769

Morehead City, N.C. 28557

Submitted via email to: publiccomments@ncdenr.gov

Re: Draft Coastal Habitat Protection Plan 2021 Amendment - CHPP Comments

Dear Sir or Madam:

The North Carolina Farm Bureau Federation (NCFB, Farm Bureau) is this State's largest general farm organization, representing the interests of farm and rural people in North Carolina. This letter is to comment on the Draft Coastal Habitat Protection Plan (CHPP) 2021 Amendment accessed at:

<https://files.nc.gov/ncdeq/Marine-Fisheries/coastal-habitat-protection-plan/CHPP-2021-Amendment-Draft-20210806-Commissions.pdf> and the Appendix A – Public comment from The Pew Charitable Trust and NC

Coastal Federation accessed at:

<https://files.nc.gov/ncdeq/Marine-Fisheries/coastal-habitat-protection-plan/CHPP-2021-Amendment-Appendix-A.-Public-Comment-Pew-and-Coastal-Fed.pdf>

Both documents were accessed on October 20, 2021.

North Carolina farmers are stewards of the land. NCFB and our State's farmers recognize the importance of good stewardship of our land, riverine and coastal resources. Farmers in North Carolina have worked hard to reduce the nutrient, sediment and chemical impacts from their farms over the past several decades. Scientists recognize that inputs such as nitrate to our waterways from agricultural sources have decreased. This is due to the efforts of farmers to reduce their footprint on the land and our waterways.

However, our farmers are facing unprecedented challenges due to changing weather patterns. North Carolina is experiencing more intense droughts, storms, and more flooding. These are increasing and unprecedented challenges for farmers affecting their crops, land and livelihoods. Simultaneously the intense storms and flooding bring more pollutants and sediments into our waterways from **all** of the various land uses across the landscape. Increased drought can cause crop failures, but can also adversely impact water quality through low flows that increase salt water intrusion, cause stagnant water, and concentrate pollutants in NC waterways from point sources such as wastewater treatment plants.

The CHPP should support voluntary, incentive-based approaches to assist farmers in their efforts to improve water quality and enhance coastal habitats. There are several programs described in the CHPP and in these comments that provide such assistance, but they are woefully underfunded. The CHPP should support increasing funding for these programs, even those that are in agencies outside of NC DEQ, such as those in NCDA&CS and USDA.

Also, the CHPP should seek ways to bring various stakeholders together for the purpose of coordination and cooperation to improve and enhance the coastal resources of our State.

NCFB appreciates the amount of effort over the last two years by the CHPP Steering Committee to develop the draft Plan Amendment. The Committee put a great deal of work into the drafting of the White Papers and the draft recommendations. NCFB staff attended (virtually) at least three of the Steering Committee meetings.

While NCFB is generally supportive of the draft Amendment, we offer the following specific comments and concerns about the draft Amendment, the Pew/Coastal Federation document in Appendix A, and two of the

*Farm Bureau and Agriculture...
We keep North Carolina growing!*

additional recommendations proposed to be added to the draft Amendment by the Marine Fisheries Commission (MFC) Advisory Committees.

Our comments will focus primarily on the SAV and Wetlands portions of the document. Where possible we will reference section numbers and/or page numbers.

Chapter 4. Submerged Aquatic Vegetation Protection and Restoration through Water Quality Improvement

First, NCFB strongly supports the comments on the draft Amendment submitted by the North Carolina Water Quality Association (NCWQA) regarding the SAV and hereby incorporates those comments as part of our comments. These are included in the email with our comments and should be considered a part of NCFB's comments. The comments include the following six recommendations along with justifications for the recommendations:

1. Support of the CHPP's intent to protect and restore SAV.
2. SAV acreage goals should be non-regulatory.
3. Water clarity should be the primary parameter for SAV-related water quality targets, with application depths tailored based on local environment, and natural "no grow" zones recognized.
4. North Carolina's SAV protection strategy should not focus only on nutrients nor underemphasize the importance of other stressors including inorganic turbidity.
5. The individual components of light attenuation should be used for region-specific diagnostic purposes rather than water quality criteria.
6. Nutrient concentration criteria should not be adopted.

4.2.3 Impacts of Water Quality Impairment to Submerged Aquatic Vegetation

Page 61

We note the following from the document as support for not just focusing on nutrients when addressing SAV declines, "In the Neuse River estuary, CDOM is increasing and may be linked to the salinity regime. As such, declines in water quality for this region could be harder to manage because they are not just directly related to nutrient enrichment." CDOM is also similarly discussed on page 71 stating that, "CDOM is linked to river discharge and salinity, but is not nutrient related and may make areas such as the Neuse and other coastal rivers more difficult to address in terms of nutrient management." Again, this supports not just focusing on nutrients when addressing SAV declines.

4.2.4 Case Studies of Water Quality Improvements that Benefit Submerged Aquatic Vegetation

Page 63

The draft Amendment states that, "Based on research, literature review and modeling, the minimal amount of light necessary for SAV is ≥ 22 percent light availability through the water column (PLW) for polyhaline and mesohaline species. For tidal fresh and oligohaline species, >13 percent light availability is necessary." Each of the references cited are from the Chesapeake Bay. NCFB recommends that before these light values are used in North Carolina that they adequately studied to determine if these numbers are correct for NC. If North Carolina research indicating that these numbers are correct for SAV in NC exists, then that literature should be cited.

4.2.5 Nutrient Control in the Albemarle Sound/Chowan River

Page 64

The draft Amendment states that, "Based on sampling in Chowan River, a tributary of the Sound, organic nitrogen has increased over time. In Potecasi Creek, a tributary of the Chowan River, nutrient patterns shifted around 2002, with nitrate concentrations declining and total nitrogen increasing. The cause for this is unknown." We do know that, in general, nitrates have been considered the primary type of nitrogen constituent contributed by agriculture. Agriculture has made significant strides in reducing its nitrogen applications to farmland, and we

believe that the science will support that nitrate contributions to coastal waterways from agriculture are declining over time. Also, there has been a lot of speculation regarding the cause of this shift in coastal waters from a predominance of nitrate to a predominance of organic nitrogen. We reiterate the statement here -- that the cause of this is unknown, and speculation that some form of agricultural runoff is causing this is not warranted at this time.

However the impact of legacy nitrate from groundwater, much of which can be decades old, cannot be ignored. This legacy nitrogen can be from past agriculture and from other land uses. We particularly appreciate that the document recognizes that a potential cause of increases in nitrogen to the Chowan River is the shift to land application of wastewater by all of the wastewater treatment plants (WWTPs) in the Chowan River watershed. Frequently in other documents, the nutrient contributions of WWTPs that utilize land application is completely discounted to zero by stating that those point sources have been eliminated. This change to land application by the WWTPs in the Chowan was initiated to tackle the algae blooms that were occurring in the 1970s and 1980s. We recommend that the impact of that switch must now be studied to determine the connection between the switch to land application by WWTPs and the current increases in nitrogen in the Chowan River watershed.

Page 65

The final paragraph in 4.2.5 discusses the work of the Nutrient Criteria Development Plan (NCDP) Scientific Advisory Council (SAC). The document states, “Management actions will be focused on wastewater, agriculture, riparian buffer protection, stormwater runoff from new and existing development, and nutrient trading. Criteria will be regulatory goals for the waterbodies and are aimed at protecting designated uses such as aquatic life, using SAV habitat as a biological endpoint.” We request that this language be deleted from the document. **The SAC has not completed its work, nor has it issued any report or document stating where management actions will be focused or what, if any, criteria or regulatory goals it will recommend. The source of these statements is not documented and these statements are extremely premature. To maintain the integrity of the SAC and the NCDP process, these statements must be deleted from the draft Amendment.**

4.2.6 - Other Contributing Factors

Page 65 – 70

These pages discuss numerous other factors affecting loss of SAV besides nutrients – climate change, SAV pathogens, physical disturbances, and chemical control of aquatic nuisance species. Any of these could impact large acreages of SAV, some overnight, even if light penetration increases and nutrient loads are reduced. Therefore, in the Amendment, the goal of increasing SAV and the recommendations for doing so must not be tied only to light penetration increases and certainly not solely through nutrient load reductions. The comments of the NC Water Quality Association agree.

4.3.2 Proposed Strategies

Page 71 - Support Water Quality Improvement Efforts

Yet on page 71, the document states, “Because of observed links between nutrients, light limitation and SAV abundance, reducing nutrients by improving water clarity is the key objective to increase SAV abundance.” First, the phrase in this sentence “reducing nutrients by improving water clarity” seems to be written incorrectly. Second, if the sentence means “reducing nutrients to improve water clarity” this still ignores the tremendous impact of those items enumerated in 4.2.6. It is difficult to understand how, based on the fact that any of those could impact large acreages of SAV, some overnight, that the key objective to SAV abundance is solely nutrient reductions. Again, we believe that the goal of increasing SAV must not be tied only to light penetration increases and certainly not solely through nutrient load reductions. The comments of the NC Water Quality Association agree.

Page 72 - Protect and Restore SAV

This is where the decision to focus on nutrients is described. The document states, “However, it was decided to focus on nutrients since they were thought to be having a greater influence on water clarity and SAV, and nonpoint runoff strategies for nutrient loading reductions will also reduce sediment loading.” As mentioned in our

comments earlier, we are concerned about this focus solely on nutrient loading reduction strategies. The comments of the NC Water Quality Association agree. We also note that the reference for this statement is a “personal communication.” We feel that more than a personal communication reference is needed to explain and justify this decision to focus on nutrients.

Page 73 - Adopt an interim SAV acreage goal

The document states, “...multiple individual mapping events have been compiled to make up the historically known presence and known habitat suitable for SAV along NC’s coast, suggesting a historic extent of approximately 191,155 acres of SAV in public trust waters in coastal NC (Table 4.5; Figure 4.1- 4.9)... Therefore, the coastwide SAV protection and restoration goal is set as an interim goal of 191,155 acres.” This has SAV acreages and extent numbers that appear to be very precise and percentages down to the hundredths of a percentage. This is far more precise than the methodology supports. Numerous studies using varied methods to estimate SAV extent do not support the implied precision of these numbers. As stated in the NCWQA comments, because of the uncertainty in the summation of the historic acreages, we suggest the goal be rounded to 191,000 acres to avoid the perception of seeking a very specific target that is not necessarily supported.” Further we strongly recommend that these SAV acreage goals be non-regulatory.

Page 73 - Adopt a light target of 22 percent for high salinity SAV and 13 percent for low salinity SAV to the deep edge of the SAV beds

All of the references listed here to support the light target numbers are from studies in the Chesapeake Bay, Tampa Bay, and Indian River Lagoon, Florida. If studies have been done in the nine SAV regions in NC to determine that these light targets are correct for North Carolina, these NC studies must be cited in the document. If there are no such North Carolina studies, a recommendation that these very specific light target numbers be adopted for NC is problematic and premature, particularly if these light targets are to be used as a basis for a water quality management strategy and for regulatory nutrient reduction goals. We request that NC studies supporting the light targets be included in the document or, if they are not available, that this recommendation to adopt these very specific light targets be revised to something more general.

Page 73 - 74 Validate a bio-optical model to define interim chlorophyll a targets for SAV waterbody regions

The document states, “Results from this model can then be used to estimate chlorophyll a concentrations necessary to maintain water clarity needed for seagrass growth as it relates to 22 percent incident light to a depth of 1.7 m for high salinity SAV and 13 percent incident light to a depth of 1.5 m for low salinity. These concentrations can then be used as light penetration targets.” And “In the high salinity waters, turbidity rather than chlorophyll a was the main light attenuating substance in the water.” And “For the high salinity locations which included Bogue Sound, Core Sound, Back Sound, and eastern Pamlico Sound, a median chlorophyll a concentration of 10 µg/L would meet the 22 percent light target for SAV protection.” We feel strongly that it is premature to develop chlorophyll a targets for NC for SAV protection and request that specific chlorophyll a targets not be included in the document. The very specific light targets appear to be derived from studies that were not conducted in NC, but in Chesapeake Bay, Tampa Bay and Indian River Lagoon, Florida (see our comments above). The paper cited with the chlorophyll a concentration developed using those light targets (reference 135 listed on page 83) is a paper that is still “in review” and therefore subject to possible revision. Again, we do not support specific chlorophyll a targets being included in this document.

Page 74 - Assess existing North Carolina water quality standards for chlorophyll a supporting sufficient light penetration for SAV growth and reproduction

The document states, “Using the statistical, probability distribution of chlorophyll a from estuaries throughout NC waters, a 10 µg /l median value corresponds to a 90 percent quantile of 26 µg/l, significantly less than the current 40 µg/l standard. Comparisons of chlorophyll a concentrations to revised standards will help identify regions where nitrogen load reductions are necessary to protect SAV. Relationships between nutrient loading and chlorophyll a will need to be determined and will help manage sources of nutrient loads by SAV waterbody region and ultimately throughout coastal NC.” First, the numbers discussed from the reference 135 listed on page 83 that is still “in review” are for high salinity SAV habitats. Second, this section presupposes that standards are going to be revised. “Revised standards” are not needed to make comparisons of chlorophyll a concentrations to identify where nitrogen load reductions may benefit SAV. That can be done now. It is unnecessary to revise standards across the entire state or to revise standards for every water in coastal NC to benefit SAV. This is particularly concerning because these standards would be applicable to those waters, whether or not those waters ever supported SAV historically. References to pre-assumed revised standards should be deleted from this document.

Recommended Actions for SAV

Beginning on Page 75

4.4 – We appreciate the inclusion of the Soil and Water Conservation community in this recommendation, however we feel that this recommendation should not have a specified target of 50% and this recommendation should be revised accordingly. That target may be correct for some programs, but not for others. We speak more specifically about the Soil and Water Conservation programs later in these comments.

4.7 – This recommendation states that the SAC “will evaluate” whether to propose a light penetration standard to the Environmental Management Commission. We feel strongly that this evaluation should be based on North Carolina studies regarding light penetration and SAV, as stated earlier in our comments.

4.8 - This recommendation states that the SAC “will evaluate” whether to propose a chlorophyll a standard for SAV protection. We feel strongly that this evaluation should be based on North Carolina studies on light penetration and SAV, before chlorophyll a standards are proposed to increase light penetration to the proposed light penetration targets. Further it is unnecessary to revise standards across the entire state or to revise standards for every water in coastal NC to benefit SAV. This is particularly concerning because these standards would be applicable to those waters, whether or not those waters ever supported SAV historically.

4.9 – We strongly oppose the recommendation that the EMC consider adopting nitrogen and/or phosphorus criteria. See the comments of the NC Water Quality Association, on nutrient concentration criteria, which we incorporate as our comments also.

4.12 – This recommendation is that DWR will request the NC Policy Collaboratory to investigate the impacts of agricultural practices and land use change on water quality within SAV waterbody regions, to determine types and location of BMPs needed to effectively improve water quality. We request that agricultural practices not be the only land use practices listed here for study, but also development and

other practices should be listed. Further we feel that the phrase “land use changes” should specifically cite the land use change from existing land uses to development.

Chapter 5 - Wetland Shoreline Protection and Enhancement with Focus on Nature-based Solutions

Tables 5.5 and 5.6

Pages 92 and 93

These tables show that the conversion of all wetlands to agriculture has decreased over the twenty year time period, and for the period 2011 -2016 is zero acres for every category. However, on **page 96** the document states that “...conversion of wetlands for forestry and agriculture has been a major source of wetland loss historically and in more recent decades.” This document should acknowledge that conversion of wetlands to agriculture has consistently decreased in recent decades, and that it was zero for the last five years cited in the tables. We request that a discussion of why that has occurred – primarily due to the impact of the Wetlands Conservation Provisions (the Swampbuster provisions) of the 1985 Farm Bill – be added to the discussion on **page 96**.

Page 96 - Current and Future Threats

The document states “However, in areas designated as NSW and having nutrient management rules (i.e., Neuse, Tar-Pamlico), agricultural nutrient loading requirements are included.” We feel strongly that this paragraph should be expanded to discuss the tremendous accomplishments of the agricultural community in complying with the nutrient reduction mandates in the Neuse and Tar-Pamlico River Basins. The nitrogen reduction mandates for agriculture in each Basin are 30%.

In the Neuse Basin, “In CY2020, agriculture collectively achieved an estimated 48% reduction in nitrogen loss from agricultural lands compared to the 1991-1995 baseline, continuing to exceed the rule-mandated 30% reduction.” Source: Neuse CY 2020 report at:

<https://www.ncagr.gov/SWC/watershed/documents/2021AnnualProgressReportCropYear2020ontheNeuseAgriculturalRule15ANCAC2B.0712.pdf>

In the Tar-Pamlico Basin, “In CY2019, agriculture collectively achieved an estimated 55% reduction in nitrogen loss compared to the 1991 baseline, continuing to exceed the rule-mandated 30% reduction.”

Source: Tar Pamlico CY 2019 report at:

https://www.ncagr.gov/SWC/watershed/documents/Final_Tar-Pam_CY2019_Annual_Report.pdf

Appendix A – Public Comment from the Pew Charitable Trusts and the North Carolina Coastal Federation

NCFB participated in a stakeholder workgroup coordinated by the Pew Charitable Trusts and the North Carolina Coastal Federation. Through this workgroup, members identified voluntary measures that may result in the reduction of sediment, pollutants and pathogens entering our waterways. The summary of that work is included as Attachment A to the Draft CHPP Amendment Document. The North Carolina Farm Bureau supports several of the initiatives proposed in the Pew/Coastal Federation document:

1. Providing support and assistance to government entities, private non-profits and mitigation companies to establish voluntary programs that financially support adoption of best management practices that will reduce nutrients and other pollutants harmful to fishery habitats.
2. Include the protection of coastal fishery habitats as a priority in the conservation plan for North Carolina adopted by the USDA Natural Resources Conservation Service (NRCS). Coastal fishery habitats are not currently included in NRCS’s conservation plan as a specific priority for conservation funding.

3. As outlined in Appendix A, NCFB supports the CHPP's initiatives to implement cost-effective, nature-based strategies such as living shorelines to reduce nutrient inputs, as well as other nature-based strategies that can reduce flooding impacting farms. Natural infrastructure practices are gaining a lot of support due to their potential to reduce downstream flooding, and many of these practices fit well in the agriculture landscape. NCFB generally supports these efforts, especially those that work to assist agriculture with these practices, while taking other concerns of agricultural and forest landowners into account, such as financial constraints and their ability to continue to have adequate land to operate profitably.
4. The North Carolina Farm Bureau supports a public-private partnership that will work with stakeholders to implement voluntary actions that can reduce nutrient and pollutant loading. The Resource Conservation Partnership Program (RCPP) through NRCS is an example of an effort to establish these partnerships.

Marine Fisheries Commission Advisory Committees' Recommendations

An NCFB staff member attended (virtually) each of the five Advisory Committee public meetings where the CHPP was presented and discussed. Each Advisory Committee passed motions regarding the draft Amendment. We would like to address two recommendations of these Committees regarding agriculture.

Although not addressed in the Draft CHPP Amendment Document, a recommendation by the MFC's Northern Regional Advisory Committee would propose to add a recommended action to the CHPP to address and reduce nitrogen loading to the atmosphere from livestock waste lagoons as a means to restore SAV. The amount of atmospheric deposition of nitrogen from swine lagoons in NC is largely unknown, and the amount of those emissions that would be deposited into the estuary is even more uncertain. Tying these emissions to SAV loss (or restoration) is even more problematic. Until such time that nitrogen emissions from swine lagoons and their impact are better understood, NC Farm Bureau opposes the inclusion of this recommendation into the Draft CHPP Amendment Document.

The MFC's Finfish Advisory Committee passed a motion that the draft CHPP amendment recommend working with the Division of Soil and Water Conservation to introduce buffer zones installed on farmland in the coastal region and near river waterways. NCFB appreciates that the Finfish Advisory Committee recognizes the work of the Soil and Water Conservation community in NC.

Installation of buffers and similar best management practices (BMPs), such as field borders, are already an ongoing part of the cost-share programs administered by the Division of Soil and Water Conservation (DSWC) through the local Soil and Water Conservation Districts. The North Carolina Agriculture Cost Share Program for Nonpoint Source Pollution Control (NCASCP) is the primary state program providing cost share funding for voluntary implementation of BMPs by farmers. The Program funds numerous BMPs that benefit water quality, as does another cost-share program that the Division administers – the Community Conservation Assistance Program (CCAP) for installation of non-agricultural BMPs.

These programs are voluntary and it is important that they remain so. This is supported by the fact that far more farmers and landowners request funding for installation of buffers and other water quality best management practices than receive the funds. "While the soil and water conservation districts are well-positioned to implement the programs, they are chronically underfunded. In fiscal year 2019, cost-share programs funded by the State could only support 18% of eligible conservation assistance applications." Source: NC Climate Risk Assessment and Resilience Plan – Appendix B - North Carolina Natural and Working Lands Action Plan accessed at: <https://files.nc.gov/ncdeq/climate-change/resilience-plan/Appendix-B-NWL-Action-Plan-FINAL.pdf> citing the Soil and Water Conservation Commission Cost Share Programs Annual Report Fiscal Year 2019.

Additionally the staff of the NC Conservation Reserve Enhancement Program (CREP) discussed on page 118 of the draft Amendment is housed in the NC Division of Soil and Water Conservation. The North Carolina CREP is intended to improve water quality, reduce soil erosion, reduce the amount of sediment, phosphorous and other

pollutants entering waterbodies, improve wildlife habitat and restore wetlands. The draft only discusses this as a USDA program. In fact, USDA and the State of North Carolina are partners in implementing the CREP. USDA provides federal funds for the program but those funds must be matched by state funds. In addition to staffing the CREP, the DSWC is responsible for seeking the state matching funds required for NC to continue to offer this program.

These cost-share programs that fund agriculture and stormwater BMPs, and the CREP, are located in the NC Department of Agriculture and Consumer Services. Even though this is an NC DEQ document, it is important that the document indicate support for funding of these vital programs that protect and enhance water quality. This will show strong, cross-agency support for funding of agricultural and urban BMPs to protect and enhance water quality.

We request that the draft Amendment specifically recommend increased funding for the state cost-share programs administered by the NC Division of Soil and Water Conservation and delivered by the local Soil and Water Conservation Districts. We also request that the document specifically recommend continued state funding of the state match for the Conservation Reserve Enhancement Program.

Thank you for the opportunity to comment on the draft CHPP amendment. If you have any questions, please do not hesitate to contact me at 919-782-1705.

Sincerely,

Anne Coan
Director of Environmental Affairs

Lower Neuse Basin Association® Neuse River Compliance Association®
Post Office Box 1410
Clayton, North Carolina 27528 – 1410

October 20, 2021

Email: publiccomments@ncdenr.gov

CHPP 2021 Amendment Comments
 P.O Box 769
 Morehead City, N.C. 28557

Mr. Jimmy Johnson, Coastal Habitats Coordinator APNES:
 Ms. Anne Deaton, Habitat Program Manager Habitat and Enhancement Section

Thank you for the opportunity to provide comments on the Draft 2021 Amendment to the Coastal Habitat Protection Plan (CHPP General Statutes § 143B-279.8.). It is understood that the CHPP is a long-term strategy to improve coastal fisheries through habitat protection and enhancement efforts. As such, the history of the lofty CHPP document (since the 1997 Fisheries Reform Act followed by the initial CHPP in 2005) provides information on habitat distribution, abundance, ecological functions and importance to fish production, status and trends, threats to habitats, and includes recommendations to address those threats. We note that all of the previous CHPP documents have been massive collections of information supplemented with lofty ideals and extensive recommendations. Perhaps it is time to consider a change. The incorporated comments from the independent stakeholder workgroup convened by the NC Coastal Federation (Federation) and The Pew Charitable Trusts (Trusts) offers an approach that targets and identifies real actions that have a practicable opportunity to make incremental improvements in key coastal habitat areas. The Federation/Trusts comments identify a set of voluntary water quality improvement actions that would support CHPP goals, could be taken over the next five years, and help minimize the need for regulatory actions. Overall, we find these comments and recommendations to be realistic, potentially achievable, and locally capable of implementation. Rather than recreating and reconstructing the massive CHPP document on five-year intervals, it is suggested that the 5-year amendment simply identify needed changes to the previous CHPP, and set recommendations and achievements for a five year time period. The comments offered by the Federation and the Trusts are realistic and digestible. Conversely, we note the lack of an Executive Summary and the extent of the massive 2021 Draft document (~250 pages) challenge us to understand the proposed changes and priorities offered in the 2021 Amendment. Simply stated, the comprehensive size of the document/references diminishes the opportunity for decision makers to prioritize realistic actions.

On behalf of the LNBA/NRCA Associations, I respectfully submit the attached comments on the Draft 2021 Amendment to the North Carolina CHHP. Our comments are generally focused on recommendations for the protection and restoration of SAV through Water Quality Improvements. Our Associations appreciate the monumental challenges placed upon the many contributors to the CHPP process. Thank you for the opportunity to submit these comments. If you require additional information or have questions about our comments, please contact me or Haywood Phthisic, LNBA/NRCA Executive Director.

Sincerely,


 Chairman LNBA/NRCA

cc: LNBA/NRCA Boards

LNBA/ NRCA Comments on 2021 Amendment to the Coastal Habitat Protection Plan

1. The historical extent of NC's SAV habitat is apparently dominated by observation from areas north of Cape Lookout along the western shore of the Outer Banks. These areas are extremely remote by distance, dilution, denitrification, assimilation, and hydrology from the influences of nutrient contributions from most of the inland areas of the state. None-the-less, the document continues the tradition of targeting the low-hanging fruit of regulatory recommendations for chlorophyll-a, nitrogen, and phosphorus. State-wide standards for chlorophyll-a, nitrogen, and phosphorus regulatory thresholds are not appropriate due to the site-specific influences of hydrology, wind, currents, tides, flow velocity, light availability, climate, extreme weather events. Nutrient concentrations are poor predictors of biological responses. Despite general acceptance of nutrient pollution as a problem, understanding the ways that SAV and other biological communities respond to nutrients is complicated, in part because conditions in estuaries, streams and rivers are quite variable. Chlorophyll a, a pigment in primary producers, is used to estimate algal biomass however the response of chlorophyll a to nutrients is dependent on the local environmental context. The CHPP document inadequately distinguishes significant differences between inorganic, organic, and algal turbidity. We support the (CHPP 2021 Appendix) Coastal Federation and Trusts' recommendations for voluntary "nature based" recommendations – i.e., living shorelines. Adopting additional rules and regulations for state-wide numerical criteria for chlorophyll-a, nitrogen, and phosphorus will not reliably protect the goods and services provided by designated uses. Rather, additional state-wide regulatory standards for chlorophyll and nutrients are not scientifically supported and they excessively and erroneously impact the economy.

Colored dissolved organic matter (CDOM) is primarily leached from decaying detritus and organic matter and gives water a brownish color. Light penetration is greatly reduced in waters with high CDOM concentrations. In general, CDOM concentrations are higher in fresh and oligohaline waters compared to polyhaline waters. In the Neuse River estuary, CDOM is increasing and may be linked to the salinity regime. As such, declines in water quality for this region could be harder to manage because they are not just directly related to nutrient enrichment.

2. Although the LNBA/NRCA may not agree with the "fact-based findings" assembled by the Coastal Federation and Pew Trusts' stakeholders, we concur with the recommendations of the Coastal Federation and the Pew Trusts stakeholders' consensus recommendations for an array of non-regulatory actions. Significant progress has been made by the LNBA/NRCA to reduce the point source loads of nutrients into the Neuse Estuary, but progress made in reducing our point source pollution is overshadowed by the impacts of nonpoint source pollution. New rules and regulations on point sources will not achieve a condition of algal nutrient growth limitation. If non-point sources contribute 75% of the nutrient load problem, regulating only 25% of the nutrient sources (point sources) will not achieve significant reductions in algal growth.
3. The LNBA/NRCA supports the widespread use of voluntary nature-based strategies that protect water quality, help reduce flooding, and make coastal communities more resilient to climate extremes. Federal and state climate resiliency strategies could expand financial incentives and technical assistance to encourage local communities to voluntarily prepare local watershed management and restoration plans. These plans enable public and private landowners to implement cost-effective, nature-based projects that protect, restore and mimic natural hydrology to reduce runoff, flooding, and restoration coastal fishery habitats such as SAV.



October 15, 2021

Jimmy Johnson
N.C. Department of Environmental Quality
Albemarle-Pamlico National Estuary Partnership
217 West Jones Street
Raleigh, NC 27604

Re: Proposed Comments by the N.C. Beach, Inlet and Waterways Association Regarding the Draft Amendment and Stakeholder Recommendations for the North Carolina Coastal Habitat Protection Plan

To Whom it May Concern:

The N.C. Beach, Inlet and Waterways Association (NCBIWA) is a 501(c)(3) non-profit tax-deductible association founded in 1998. Its Mission is to work on behalf of North Carolina's coast, and those who love it, by seeking to encourage government action and funding, educate and advocate for effective Federal and State policy, and facilitate environmentally sound scientific and engineering solutions for our threatened beaches, inlets and waterways.

Every five years the Coastal Habitat Protection Plan (CHPP) is updated by the N.C. Environmental Management Commission, N.C. Coastal Resources Commission, and N.C. Marine Fisheries Commission. These three commissions will update the plan this year to address management needs for coastal fish habitats over the upcoming five years.

Although the CHPP was initially developed in response to fishery concerns, the topics encompassed within the documents are wide ranging and address issues such as water quality, erosion, flooding and aesthetics, all of which are important topics to NCBIWA and our coastal community members.

Local governments along with engineering firms and other stakeholders are actively working to make coastal communities more resilient to storms and flooding by using nature-based stormwater measures. Anticipated upcoming appropriations by the N.C. General Assembly to support nature-based flood mitigation projects constructed by local governments means that our members will be on the forefront of management efforts to not only reduce flooding, but to make water quality improvements sought by the CHPP. In addition, in our more rural counties work is also progressing within the farms, forests and wildlife refuges in places like Hyde County to devise nature-based active water management infrastructure that concurrently addresses flooding and water quality needs.

NCBIWA supports the work of its members and endorses the direct integration of these local government projects into the CHPP recommendations. The CHPP needs to clearly support local

government initiatives that will be the backbone of meaningful actions taken to reduce existing and future coastal water quality problems. NCBIWA is particularly supportive of forming a public/private partnership so that stakeholders can be directly engaged in supporting and implementing this updated plan. We do not believe the plan will be successful if state agencies and the commissions do not immediately form this working partnership with key stakeholders (such as our member local governments and engineering firms) to help achieve the plan's goals.

NCBIWA strongly encourages the state to develop a plan for the Beneficial Use of Dredge Material (BUDM) to help enhance and restore fisheries habitats as well as for estuarine shoreline and oceanfront beach renourishment that optimizes sustainability. Current State policy for BUDM is challenging for local governments to undertake such projects. Safe and effective use of fine-grained dredge spoils for the restoration of marshes and thin layer placement is being widely used in other states throughout the Country in order for marshes to keep up with rising sea levels.

NCBIWA members are willing to engage in the work of the CHPP as it is implemented and offer to regularly feature highlights and discussions of the CHPP in our organizational meetings and communications.

Please contact me if you need more information about these comments.

Sincerely,

A handwritten signature in black ink, appearing to read 'Kathleen Riely', with a long, sweeping flourish extending to the right.

Kathleen Riely
Executive Director, North Carolina Beach, Inlet and Waterway Association



PO Box 188 • 30 Oyster Creek Road, Swan Quarter, NC 27885 • info@nccatch.org

October 2, 2021

Jimmy Johnson,
Coastal Habitats Coordinator
Albemarle-Pamlico National Estuary Program
943 Washington Square Mall
Washington NC, 27889

RE: Comments regarding the draft Coastal Habitat Protection Plan 2021 Amendment

Dear Mr. Johnson,

As you know, NC Catch is a nonprofit organization dedicated to consumer education about North Carolina seafood. We serve as the umbrella organization for regionally specific seafood-branding groups Brunswick Catch, Carteret Catch, Pamlico Catch, Outer Banks Catch, and Ocracoke Fresh. We respectfully submit the following comments on the draft Coastal Habitat Protection Plan (CHPP).

We believe in collaborative efforts and applaud the CHPP Steering Committee for supporting the formation of a stakeholder workgroup and the NC Coastal Federation and Pew Charitable Trusts for convening and facilitating the process. We are especially encouraged by the workgroup's recommendation that the CHPP Steering Committee and DEQ staff form a public/private partnership to focus on implementing recommendations once the amended plan is adopted.

We reviewed the stakeholders' findings, conclusions, and voluntary pollution-reduction strategy and find them to be reasonable and important. We recognize that recommended actions require strong collaborative partnerships and alignment with existing and emerging programs to address water quality degradation and storm resiliency. In short, we support the findings and recommendations of the stakeholder workgroup and appreciate the hard work they put into the process. We need more collaborative efforts of this sort.

We also urge you to adopt recommendations listed in Table 4.2 of the draft Amendment cited in North Carolina Fisheries Management plans (e.g. blue crab and bay scallop), particularly measures to reduce stormwater runoff. Improving water quality and the health of SAVs are key factors in ensuring productive fisheries and a robust seafood industry. In the interest of seafood consumers and the North Carolina commercial fishermen who provide their access, we urge the state to adopt these impactful measures to better protect our public resources.

Sincerely,

Barbara Garrity-Blake
President, NC Catch



North Carolina Conservation Network

234 Fayetteville Street
5th Floor
Raleigh, NC 27601
919.857.4699

October 21, 2021

CHPP 2021 Amendment Comments
N.C. Department of Environmental Quality
publiccomments@ncdenr.gov

Re: Comments on the Coastal Habitat Protection Plan – 2021 Amendment

Dear CHPP authors and leadership team members:

Thank you for the opportunity to comment on the proposed 2021 Amendments (the plan) to the Coastal Habitat Protection Plan (CHPP). The NC Conservation Network is a statewide environmental advocacy organization that works with our partners and allies to protect North Carolina's environment and public health. Our supporters across the state include tens of thousands of North Carolinians who live in or visit the coastal region, and who rely on coastal habitats for employment, recreation, or quality of life. We're offering the thoughts below in hopes that they may help the CHPP better achieve both the statutory goal of 'long term enhancement of the coastal fisheries associated with coastal habitats' and also the general health of all the public trust resources you identify in the coastal region.

1. The proposed plan amendments are smart and needed to protect North Carolina's coastal habitats.

The NC Conservation Network strongly supports the 2021 plan amendment you have assembled. It's a work of policy depth and scientific rigor. The authors' love for North Carolina's coastal habitats shines through the data and the text.

Reading it, three takeaways stand out. First, North Carolina has an ecologically rich and varied coastal region, and the six focal habitats – the water column, shell bottoms, wetlands, hard bottom, soft bottom, and submerged aquatic vegetation – are key to the region's future health. Second, those habitats are threatened by direct physical impacts, ongoing pollution, and new stresses arising from climate change and sea level rise. Finally, damage to the six focal habitats will impose real costs on the coastal economy and human communities, not just through loss of fisheries, but via loss of other functions as well, including loss of buffering from storms and degradation of recreational water quality.

We believe the CHPP, as updated by the proposed 2021 amendments, offers an impressively comprehensive strategy to carry our coastal habitats through the challenges ahead. We urge the Environmental Management Commission, the Coastal Resources Commission, and the Marine Fisheries Commission, to adopt the proposal, ideally with the following additions.

2. The proposed plan should be strengthened by adding a discussion of environmental justice.

The proposed Plan does not discuss environmental justice, disparities in the current distribution of pollution or risks, or the implications of the plan for those disparities. It mentions equity once (at 171), in the context of water affordability – very much an equity issue – part of a thoughtful discussion about the need to maintain aging water infrastructure. The Plan would be strengthened by applying that lens across the document.

We suspect that the omission reflects a conception of the Plan as science-based and focused closely on the six coastal habitats. Yet, how those six habitats sink or thrive implies an uneven distribution of impacts – some varying by income, some by race, some both – for coastal communities and residents. Outcomes in the Plan with environmental justice implications include, for example, the capacity of fish and shellfish stocks to support commercial fishing and shellfishing (income); the degree to which marshes can continue to buffer coastal communities from storms and sea level rise (income and race); to degree of access to healthy fish and shellfish populations for subsistence and recreational fishing (income and race). If any of the six habitat types fail, coastal residents of all income levels will suffer, low-wealth coastal residents will suffer more. In addition, many coastal residents of color live in conditions of heightened exposure or vulnerability to pollution or natural disasters as a direct legacy of historic discrimination formerly enforced by state and federal law. To recognize existing disparities and the potential for action items in the Plan to improve or to amplify them is wholly appropriate.

Moreover, addressing environmental justice in the Plan is pragmatic. Federal law – Title VI of the Civil Rights Act of 1964 – prohibits discrimination on the basis of race, color, or national origin in any program in any program that receives federal funds.¹ Executive orders in place since 1994 require each federal agency to make “achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations.”² Moreover, Executive Order 14008, issued this year, directs federal agencies to “make achieving environmental justice part of their missions by developing programs, policies, and activities to address the disproportionately high and adverse human health, environmental, climate-related and other cumulative impacts on disadvantaged communities, as well as the accompanying economic challenges of such impacts.”³ To implement that, the Biden administration has issued guidance establishing a goal that at least 40% of the benefits of a broad sweep of federal investments flow to disadvantaged communities.⁴

The Plan calls both for regulatory actions that will invoke state authorities under federal law and for investments for which North Carolina will want to draw on federal dollars. To maintain clear access to both, the Plan should explain how it addresses environmental justice in an overarching way.

If you add a new section to the final Plan to address environmental justice, we recommend that it:

- (1) note the wide existing disparities in disaster vulnerability and pollution exposures among coastal communities and residents. Much of this analysis has already been compiled in detail in North

¹ Civil Rights Act of 1964, Title VI, 42 USC 2000d *et seq.*

² [Exec. Order No. 12898](#), Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, § 1-101, 59 Fed. Reg. 7629 (Feb. 16, 1994), as amended by Exec. Order No. 12948, 60 Fed. Reg. 6381 (Feb. 1, 1995).

³ [Exec. Order No. 14008](#), Tackling the Climate Crisis at Home and Abroad, 86 Fed. Reg. 7619 (Jan. 27, 2021), at §219.

⁴ Memorandum, [Interim Implementation Guidance for the Justice40 Initiative](#), July 20, 2021.

Carolina’s Climate Risk and Resilience Plan, Chapter 4. It would be fairly easy to reference that and crosswalk those disparities with the benefits provided by the six core habitats of the Plan.

- (2) mention the core touchstones of environmental justice: *meaningful involvement* and *fair treatment*.⁵ Traditionally, the first implies full procedural equity, with attention paid to ensure that all residents can participate in government processes and decisions. The second implies substantive equity in the outcomes for residents – as the US EPA describes it, ‘the same degree of protection from environmental and health hazards’.⁶
- (3) describe how the action steps of the Plan will be implemented in ways that assure consideration of environmental justice and compliance with the goals of meaningful involvement and fair treatment. With respect to meaningful involvement, the Plan may find it helpful to reference DEQ’s 2020 Public Participation Plan and Limited English Proficiency Plans.⁷ Both include a lot of ‘may’ statements and are not codified in state rules, but they do outline measures that, if followed conscientiously, could help Plan actions stay aligned with federal environmental justice expectations, at least in terms of supporting meaningful involvement.
- (4) offer a vision of what a more equitably-protected and restored coast will look like, expressed as five-year benchmarks. The use of five-year benchmarks – with reporting on whether they were met as a part of the next Plan iteration – is one of the most functional features of the CHPP, chapter 2 in the proposed draft. It embodies the axiom that what isn’t measured, doesn’t get managed. We recommend that the final version of this Plan identify specific equity benchmarks to give the agency and Commissions clear targets to aim at to demonstrate progress towards fair treatment.

3. The stakeholder-derived watershed planning framework in the NC Coastal Federation/Pew letter merits adoption as a CHPP strategy.

In addition to the proposed Plan amendments, we have reviewed the comments submitted jointly by the NC Coastal Federation and the Pew Charitable Trusts, reflecting the conclusion of a group of stakeholders pulled together for discussions running concurrently with the drafting of the Plan. While the stakeholder process generated several recommendations for action by various state entities, we read the core thrust of the comment letter as asking that the CHPP endorse the development of local partnerships that will identify projects to benefit coastal habitats and then seek available state funds to advance those projects.

We think it makes a lot of sense to for the CHPP to endorse this. It is not duplicative of the existing action items, either funding or rulemaking, that the Plan tasks DEQ and the Commissions to achieve. We do not think it requires a commitment from DEQ (or across the administration) to give the projects identified by these stakeholders an absolute priority for conservation, infrastructure, or resilience funding streams. But on a practical level, projects that arrive at state funding agencies with strong buy-in across local interest groups have a higher chance of securing a local match (where required) and of being smoothly implemented. We think it makes a lot of sense to welcome these projects, and for the Plan to encourage local communities to pursue these coordinated solutions.

⁵ EPA, webpage: [Environmental Justice](#), accessed October 20, 2021.

⁶ *Ibid.*

⁷ NC DEQ, [Public Participation Plan](#), revised December 2020; NC DEQ, [Limited English Proficiency Plan](#), February 2020.

4. The proposed amendments are right to tackle nutrient pollution to protect SAV.

We appreciate the proposed Plan’s discussion of the need to address excess nutrient pollution for the sake of conserving submerged aquatic vegetation (SAV) in chapter 4, and the concomitant action steps listed at the end of that chapter. In particular, we strongly support the recommendations for rulemaking: establishment of a light penetration standard (4.7), revisions to the chlorophyll-a standard for the estuaries (4.8), and development of nitrogen and phosphorus criteria (4.9). It would be worth adding to the latter development of a periphyton standard, which would enable the agency more easily to tackle excess nutrient pollution in flowing waters before they reach the estuaries.

It appears to us that action item 4.10 – determining “the loading and sources of nutrients and sediments, their quantitative linkages to chlorophyll a concentrations, and their effect on water quality and SAV” – comprises the same steps that would be necessary to update the watershed and estuary models that underpin the existing nutrient management strategies for the Neuse and Pamlico estuaries. We support that action item. We encourage the agency to make sure that the very real contributions of ‘non-discharge’ facilities are not left out of the modelling and calculations this time, as they unfortunately were in the late 1990s. Updating the nutrient management strategies themselves would presumably require another action item, under rulemaking, and we would support that as well.

5. The Plan should address persistent toxics by setting a goal to eliminate their direct and indirect release to North Carolina’s coastal habitats.

Nearly five years ago (December 2016) researchers at NC State discovered very high concentrations of GenX and other perfluorinated compounds (PFAS) in the Cape Fear River, flowing down to coastal waters. While PFAS are not the only persistent toxics in North Carolina’s coastal waters, they have rapidly become the premier class of persistent toxics needing state attention.

PFAS present a serious threat to coastal ecosystems, lasting for timescales ranging from decades to centuries.⁸ Many – perhaps most – are toxic to animals and humans.⁹ Some bioaccumulate and can biomagnify up the food chain; others are highly mobile, taken up quickly by plants and spread quickly through groundwater.¹⁰ PFAS have been found in high concentrations in striped bass and alligators in North Carolina’s coastal region,¹¹ in estuarine turtles along the South Carolina coast,¹² and in juvenile seabirds in the Lower Cape Fear region.¹³ Just this week, test results have become public showing PFAS in beach foam.¹⁴ Some of those samples were collected near where construction equipment was moving sand,¹⁵ raising the

⁸ Ian Cousins, Jamie DeWitt, Juliane Gluge, et al, [The high persistence of PFAS is sufficient for their management as a chemical class](#), Environ Sci Process Impacts, December 2020, 22:12, 2307-2312. doi: 10.1039/d0em00355g.

⁹ Interstate Technology Regulatory Council, factsheet: [Human and Ecological Health Effects and Risk Assessment of Per- and Polyfluoroalkyl Substances](#), 2020.

¹⁰ *Ibid.*

¹¹ Adam Wagner, [Wilmington-area gators, fish show high levels of contaminants](#), Wilmington StarNews, April 9, 2019.

¹² Jacqueline Bangma, Jared Ragland, Thomas Rainwater, et al, [Perfluoroalkyl substances in diamondback terrapins \(Malaclemys terrapin\) in coastal South Carolina](#), Chemosphere, January 2019, 215, 305-312, 10.1016/j.chemosphere.2018.10.023.

¹³ Anna Robuck, Mark Cantwell, James McCord, et al, Legacy and Novel Per- and Polyfluoroalkyl Substances in Juvenile Seabirds from the U.S. Atlantic Coast, Environ. Sci. Technol. October 2020, 54:20, 12938, DOI: 10.1021/ace.est.0c01951.

¹⁴ Lisa Sorg, [PFAS-contaminated foam found at Caswell Beach, Oak Island](#), NC Policy Watch, October 18, 2021.

¹⁵ Emily Donovan, personal communication, October 19, 2021.

question of whether PFAS has accumulated in beach sand and submerged sediment and can be re-released into the environment through human activity, reshaping in storms, or bioturbation.

The draft Plan does not mention PFAS or the broader problem of persistent toxics. The closest we see in the document is the discussion of plastic pollution (at 118), which is a related but distinct issue – microplastic particles can serve as a vehicle to spread PFAS and other pollutants further. We recommend that the final Plan include a discussion of persistent toxics in relation to the six core habitat types.

We note that the state and federal policy framework for curbing releases of persistent toxic pollutants continues to evolve rapidly. Just in the final week of this comment period, EPA released its far-reaching PFAS roadmap, with action items for the next three years.¹⁶ NC DEQ is drafting a parallel state PFAS strategy, an early preview of which was shared with the Secretaries' Science Advisory Board in early October.¹⁷ Unfortunately, so far both the federal and state frameworks suffer from a lack of clarity on the ultimate goal. Is it to phase out the non-essential use of PFAS? To allow broad use but prevent releases into the environment? To allow a steady release of persistent toxics into the environment at a rate the environment can absorb? – but because they are persistent, is there such a level that makes any kind of ecological sense?

Given that the Plan is not itself a regulatory document, but rather a blueprint for actions needed to maintain the health of the coast – and because the regulatory framework continues to evolve rapidly – we recommend that the final CHPP lay down two markers. First, it should note that from the perspective of the six core habitat types, there is little capacity to absorb toxics that take decades to centuries to break down. Already these habitats are biologically sensitive, and they are under increasing stress from a rapidly changing climate; we cannot calculate a capacity for them to absorb persistent toxics with any margin of safety. Second, we recommend that the Plan articulate a goal of eliminating the direct and indirect release of persistent toxics into the coastal environment.

We recognize this update of the Plan may not be able to name specific regulatory action steps to achieve that goal. So far, in the case of PFAS, the agency has aimed too low, focusing on Chemours while taking no final action to address other sources of these chemicals. Within the regulatory programs, the traditional way of thinking about pollution control – find a sustainable level of release for a pollutant, and regulate to that – continues to drive policy development. It doesn't work for persistent toxics, but muscle memory is strong. So it could be hard to achieve the internal buy-in to add appropriate regulatory action steps to the final Plan. But a science-based Plan can and should mention the lack of carrying capacity in the coastal habitats for persistent toxics and express the need to curb loadings.

6. We support the CHPP's foregrounding of nature-based approaches to coastal resilience.

We support the CHPP's emphasis on nature-based approaches – floodplain restoration, on-site management of stormwater, living shorelines – to strengthen the resilience of coastal habitats and community. Chapter 5, Wetland Shoreline Protection and Enhancement with Focus on Nature-Based Solutions, is particularly strong on this, and there's nothing we can add to that excellent section.

One place where the Plan might benefit from an expanded mention of nature-based approaches is chapter 4, Submerged Aquatic Vegetation Protection and Restoration Through Water Quality Improvement. The draft FY21-22 state budget, currently in conference between the NC House and NC Senate, includes some

¹⁶ EPA, [PFAS Strategic Roadmap: EPA's Commitments to Action, 2021-2024](#), October 2021.

¹⁷ DEQ Asst. Sec. Sushma Masemore and Frannie Nilsen, presentation recording: [DEQ Emerging Contaminants Framework](#), October 4, 2021, from 28:15 to 1:19:30. The slideshow should eventually be posted [here](#).

\$300 million for resilience strategies. Most of these are focused on protecting communities from flooding. The bill embraces both nature-based solutions and gray infrastructure (dams, levees, channelization), and at least some of the funding could be spent in either direction. In general, the nature-based options have the potential to offer far greater collateral benefits to water quality than do the concrete and steel options. It would be helpful for the Plan to emphasize the opportunity for nature-based solutions adopted for flood management to provide significant water quality benefits to downstream waters, including the estuaries. We suspect the best place to raise this is at or near the end of chapter 4, and to add two related action items (which we've modeled on similar items at the end of chapter 5):

4.4.x Conservation

- 4.x By 2022, DEQ will ensure that Division (of Mitigation Services, of Water Infrastructure) consider ways to achieve water quality improvements as a collateral benefit of investments in nature-based flood resilience.

- 4.x By 2022, DEQ will provide information to NC legislators regarding the opportunities for nature-based flood reduction strategies to improve water quality in the coastal zone, thus advancing estuarine protection at the same time.

Conclusion

Once again, we are grateful for the expertise and the months of care that have gone into drafting the proposed Plan. We encourage the Commissions to adopt it. We appreciate the chance to offer the suggested additions above, and will be glad to answer questions or provide any additional help we can to strengthen the final Plan.

Sincerely,

Grady McCallie
Policy Director
NC Conservation Network



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 E-mail: info@ncchurches.org
www.ncchurches.org

Mr. Jimmy Johnson
 North Carolina Department of Environmental Quality
 217 W Jones St
 Raleigh, NC 27603

Dear Jimmy Johnson,

The North Carolina Council of Churches (NCCC) was founded in 1935. We are a statewide ecumenical organization promoting Christian unity and working towards a more just society. We are comprised of 26 distinct judicatories from 18 denominations. Across the state, our members have over 6,200 congregations with about 1.5 million congregants. The Council enables denominations, congregations, and people of faith to impact our state on issues such as economic justice and development, human well-being, equality, compassion and peace, following the example and mission of Jesus Christ. The NC Interfaith Power and Light (NCIPL) program of NCCC NC is the only statewide organization that addresses issues of climate change as a faith-based initiative. NCIPL at its core provides a hope-filled response to climate change by advocating with compassion.

In North Carolina, a hope-filled response to climate change begins with ensuring that coastal communities and habitats are protected and prepared for sea level rise, storm surge, and other climate-driven disasters. We already see these effects fracturing our communities and see the Coastal Habitat Protection Plan as an important piece to building a safety net of support for the human and nonhuman coastal communities affected by climate change.

In particular, NCCC/NCIPL supports the recommended public-private partnership, which would engage stakeholders in watershed planning and resiliency. Faith communities are a key constituency in coastal communities and they must be at the table for resilience and watershed-level planning conversations. A stakeholder-driven public/private partnership is the best mechanism for engaging all residents in understanding and planning for the challenges that lie ahead. We look forward to working with DEQ to implement the partnership, connecting local faith leaders with planning programs and opportunities.

We also recognize that protecting and restoring God's creation yields benefits for coastal communities. NCCC/NCIPL supports the CHPP recommended actions to protect and restore natural habitats, and increases climate resilience through the restoration and protection of wetlands and living shorelines. Nature-based solutions like wetlands are essential because they can hold back record-breaking rain, reducing flooding and pollutants entering estuaries. By protecting these parts of God's creation, we are protecting our human communities.

Sincerely,

A handwritten signature in cursive script that reads "Susannah Tuttle".

Susannah Tuttle, M.Div
 Director, North Carolina Eco-Justice Connection & North Carolina Interfaith Power and Light



October 21, 2021

CHPP 2021 Amendment Comments
P.O Box 769
Morehead City, N.C. 28557

The North Carolina Coastal Federation has supported the Coastal Habitat Protection Plan (CHPP) since it was first conceived as part of the Fisheries Reform Act in 1997. After authorization of CHPP by the N.C. General Assembly, we worked with the CHPP steering committee and agency staff to plan and conduct a public engagement campaign that ultimately supported the approval of the first edition of CHPP. Working in partnership with the Secretary of DEQ, the federation organized public meetings all over the coast and state, produced printed outreach materials, organized a fisheries summit where Governor Jim Hunt spoke in Raleigh, and helped to focus the final CHPP recommendations into an actionable strategy for habitat protection.

Our engagement in CHPP continued since that initial work. We have encouraged continued focus on habitat and water quality protection and were pleased to work with CHPP implementation teams to take actions that resulted in much more widespread acceptance and use of living shorelines instead of bulkheads and other hard stabilization.

Based upon these previous positive outcomes, we strongly support the proposed amendments and stakeholder recommendations that are suggested for this latest five-year update. There is now real urgency to reduce nutrients flowing into our coastal estuaries that are harming people, fish habitats, fish and wildlife. All along our coast, there are already too many estuaries where algae blooms (some toxic) are occurring. N.C. may soon experience the same terrible problems that now occur in estuaries in Florida that this summer have experienced massive fish kills and widespread public health advisories.

N.C. has negotiated a nutrient reduction plan with the U.S. EPA to get a handle on these loadings into our estuaries. These discussions date back to 2001, and the state is significantly behind in implementing milestones in these agreements. It is clearly time to put a renewed focus on reducing nutrients running off into our coastal waters.

Past efforts by the state, local governments, and landowners to control nutrients have helped to reduce inputs from point source discharges as well as agriculture. However, increased population growth resulting in more intensive land uses of all types combined with more extreme weather events means that the nonpoint sources of nutrients in runoff are on the rise, and we need renewed and expanded strategies to address these nonpoint sources.

The stakeholders convened by the federation and The Pew Charitable Trusts outlined numerous immediate, voluntary actions that can be taken to start to address nutrient inputs. These stakeholder actions need to be incorporated directly into the CHPP and carried out to see how much reduction can be achieved through voluntary measures with adequate cost-share funding. Experience shows that we must enlist the support and cooperation of landowners and local governments to effectively reduce nutrient loadings across the landscape.

The CHPP will not be successful unless the private sector becomes its champion. As recommended by the stakeholders, CHPP should include a recommendation to form a public-private partnership that takes ownership of its implementation. The federation is ready to help with this partnership and lend our expertise as we have done with the Oyster Steering Committee since 2003. That effort has resulted in significant progress in protecting and restoring oysters in N.C., including helping to achieve a ten-fold increase in funding to carry out those initiatives.

Going forward, it will take a focused and inclusive rule-making process by the N.C. Environmental Management Commission (EMC) to devise changes and additions to the state's water quality standards that will be sufficient to set achievable goals to reduce nutrient concentrations in our coastal waters. Responsibility to protect water quality and the existing fishery uses that rely upon productive fisheries habitat not harmed by pollution falls squarely on the EMC with support from its agency staff, and the plan should clearly reflect this in terms of which governmental bodies need to be in a leadership role on these matters.

The current lack of comprehensive water quality monitoring for chlorophyll a in many of our coastal rivers and estuaries is a fundamental problem that the CHPP should explicitly recommend be corrected. Without this data, even rivers such as the Chowan that have extensive and highly visible algae blooms are not listed as "impaired" by the state's 303(d) list of impaired and threatened waters under the Clean Water Act. This lack of data means that obvious impairments are not documented, and the legal obligations and basis for obtaining more resources to address these water quality problems are lacking. We strongly recommend that CHPP include a specific recommendation to establish an adequate number of water quality sampling stations for chlorophyll a throughout our coastal waters to form the foundation for future management actions. University research and monitoring for chlorophyll is already occurring through the University of North Carolina's ModMon and FerryMon monitoring program, and should be incorporated directly into this monitoring network.

The primary focus of efforts to reduce nutrients in coastal waters needs to be on addressing non-point sources of nutrients. N.C. already has a dissolved oxygen water quality standard that can be used to devise measures to control nitrogen and phosphorus loadings. The state's existing chlorophyll a standard for coastal waters is widely understood to be set much too high to prevent eutrophication of coastal waters. Establishing a more accurate chlorophyll a standard is necessary but that will take years to adopt through the existing rule-making process. In the meantime, the EMC needs to act quickly to put in place a management framework that allows it to use its existing narrative water quality standards (such as Antidegradation under the Clean

Water Act) to protect and restore water quality to protect fisheries habitats such as submerged aquatic vegetation based upon watershed management plans and programs. There is an immediate need to begin lowering nutrient inputs, and the EMC needs to ensure that such impairments are fully recognized in its 303(d) listings and that it has mechanisms in place to use its water quality management planning authority to direct financial assistance for cost-share and other manage programs effectively to nutrient impaired coastal waters.

It is critical to move forward quickly with meaningful actions that demonstrate that the CHPP is an effective blueprint to protect and restore fishery habitats. North Carolina can learn from the work done by our neighbors in Virginia on how to reduce pollutants in the Chesapeake Bay. Leaders within government, NGOs, and private interests brought together many stakeholders to meet dissolved oxygen, nutrient, and light penetration goals. It is clear from the success of this initiative that working alongside stakeholders is a viable path that can result in mutual co-benefits for environmental and commercial interests. The federation stands ready to work with the CHPP partners to seek funding and other policy and political support that is vital for this effort to succeed. We look forward to the three commissions revising and adopting this plan so we can all get to work protecting and restoring water quality needed to maintain healthy and productive fishery habitats all along our coastline.

Sincerely,



Todd Miller
Executive Director
North Carolina Coastal Federation



Kelly Garvy
Coastal Habitat Coordinator
North Carolina Coastal Federation

North Carolina Fisheries Association, Inc.
PO Box 86 | 101 N. 5th Street | Morehead City, NC 28557
252-726-6232 (NCFA) www.ncfish.org

October 1, 2021

CHPP 2021 Amendment Comments
P.O Box 769
Morehead City, N.C. 28557.

The North Carolina Fisheries Association (NCFA) strongly supports the protection and restoration of our coastal fish habitats and water quality which are vital to our state's productive fisheries. We strongly support the decision by the N.C. Department of Environmental Quality (DEQ), N.C. Environmental Management Commission, N.C. Coastal Resources Commission, and N.C. Marine Fisheries Commission to focus much of the update of the existing North Carolina Coastal Habitat Protection Plan (CHPP) on how to protect and improve water quality that is essential to healthy and vibrant fish habitats.

Our coast is home to some of the most productive fisheries in the world as a result of its unique location and abundance of fishery habitats such as salt marshes, submerged aquatic vegetation, fish spawning and nursery areas, and still fishable and swimmable water quality in many places. However, fishermen and industry participants have seen the warnings that water quality has declined and fisheries habitats have been negatively impacted. Our fishermen and citizens continue to lose access to shellfish waters due to stormwater runoff. Shellfish closures have become more frequent and last longer even though they are supposed to be protected by the government. Severe outbreaks of fish diseases, often resulting in fish kills, have been occurring in our Neuse and Pamlico estuaries since 1984. North Carolina's river herring fishery, historically one of our state's most important fisheries, has been closed to fishing since 2007, yet the population has not recovered. North Carolina bay scallop fishery, one of the largest on the east coast, has been essentially closed or non-existent since 2006 due to a population collapse after a red-tide bloom in 1987. Striped bass populations are not successfully spawning or surviving in the Cape Fear River; the fisheries in that river have been closed since 2008. Eutrophication of coastal estuaries have grown worse, including toxic algae blooms now common in many of our coastal waters such as the Chowan River and Albemarle Sound which used to be prime river herring habitat. Scientific experts from NOAA, UNC, UNC-W, NCSU, ECU and other institutions warn that our water quality is not adequately protected. Upward trends in loadings of nutrients, pathogens, and exotic chemicals combined with more extreme weather events is causing more coastal water quality problems. Clearly, it is urgent that we take effective actions as soon as possible to protect and restore water quality to support our fisheries and the use of those waters by the public, which provide much economic benefit to North Carolina.

Over the past several decades, our state's regulatory commissions and agencies have taken effective steps to control physical and direct disturbances and damages to our coastal fish habitats. Many critical fish habitats have been closed to types of fishing gear the last 30 years in

order to protect those areas. Also, numerous restrictions have been placed on fish harvest by our fishermen through state/federal agencies to try to provide sustainable fisheries and fish populations. These measures were implemented as part of the Fisheries Reform Act in 1997, which also authorized the development of the North Carolina CHPP, which was the cornerstone of the FRA to protect critical fish habitat and ensure water quality was adequate in those habitats to support fisheries.

However, there still has not been similar effective actions taken to protect and restore coastal water quality in these critical fish habitats the last 30 years. Agreements setting deadlines for stronger water quality management actions to address nutrient and algae blooms were first initiated in 2001 between the U.S. Environmental Protection Agency and DEQ. Unfortunately, these agreements have failed to result in any meaningful water quality management reforms to date for our coastal estuaries. Yet our fisheries are restricted continually, even when harvest is at very low levels. We need to immediately move forward with effective actions to confront these water quality and fisheries habitat issues.

The Association supports the intent of the actions in the CHPP amendment, but the trends regarding fisheries habitat and water quality point to action being needed sooner than later. We request that some of these actions be revised and improved so that progress in accomplishing them is not totally contingent on receiving new funding from the N.C. General Assembly in the form of "recurring" appropriations. This requirement as stated in the draft plan is much too limiting, and does not reflect the opportunities to use existing funding, seek funding that is not "recurring," or to find funds for this work from federal, state and private agencies such as the National Fish and Wildlife Foundation or the various trust funds administered by state agencies and commissions. The importance of our fisheries and our resources dictate that our state does something as soon as possible besides restricting fishing.

Our legal advisor, Steve Weeks, participated in the stakeholder group that was formed to identify immediate voluntary actions that can be taken to jump start implementation of the plan. These recommendations need to be fully incorporated into the CHPP when it is adopted. A key stakeholder recommendation is to form a public-private partnership to help the three commissions and DEQ implement the CHPP much like the ongoing Oyster Steering Committee now works. We believe this partnership is vital to build the stakeholder understanding and support that is going to be essential to obtain public funding and management actions that are being recommended. The Association is ready to participate in such a partnership once it is formed.

Please do not hesitate to contact me if you have any questions about any of these recommendations and comments.

Sincerely,

John Glenn Skinner, Jr
North Carolina Fisheries Association, Inc. - Director



COMMENTS OF THE NORTH CAROLINA WATER QUALITY ASSOCIATION ON THE NC COASTAL HABITAT PROTECTION PLAN 2021 AMENDMENT

The North Carolina Water Quality Association (NCWQA) is a statewide coalition of public water/sewer/stormwater utilities representing a significant majority of the sewered population of North Carolina. Water quality regulations and policy are an important topic for NCWQA. For decades, our members have worked with the North Carolina Department of Environmental Quality (NC DEQ) and other stakeholders to achieve necessary water quality controls in a predictable and cost-effective manner. Our comments below pertain to the submerged aquatic vegetation (SAV) issue paper (Chapter 4) of the 2021 amendment to North Carolina's Coastal Habitat Protection Plan (CHPP).

1. NCWQA supports the CHPP's intent to protect and restore SAV. SAV is a valuable ecological resource both in its own right and for the maintenance of other species. It is therefore appropriate that the CHPP identify ways to better protect and restore SAV. NCWQA supports most of the SAV-related strategies presented in the document, although with several important caveats as noted in comments below.
2. SAV acreage goals should be non-regulatory. As described in the draft amendment, the proposed interim SAV goal (191,155 acres) was obtained by summing the acreage estimated by various individual projects over 40+ years. Many of the mapping projects were very limited in area and time. There appears to be inadequate information to quantify the interannual variability in the total acreage, or the maximum extent that was ever achieved in a single year. For these reasons, although NCWQA concurs that the historical mapping mosaic is useful information, we recommend that the interim goal remain non-regulatory. Because of the uncertainty in the summation of the historic acreages, we also suggest the goal be rounded to 191,000 acres to avoid the perception of seeking a very specific target that is not necessarily supported. We support the CHPP's recommendation to improve SAV monitoring in North Carolina. A possible future outcome of such a program is more confidence in the area suitable for SAV habitat, and the direct use of mapped SAV acreage to demonstrate use support.
3. Water clarity should be the primary parameter for SAV-related water quality targets, with application depths tailored based on local environment, and natural "no grow" zones recognized. NCWQA concurs with the recommendation to adopt light targets for SAV beds, expressed as percent incident light. The draft amendment cites the depths of application as 1.7 m in high salinity areas and 1.5 m for low salinity areas. NCWQA recommends against assuming that the appropriate depth of application is constant by salinity zone statewide. Rather, the appropriate depth of application should be based on segment-specific considerations including historical depths of growth, sediment type, and hydrodynamic conditions. In some areas, the realistic depth of SAV will be less than the depths cited in the draft amendment, and some shallow areas are unsuitable for SAV colonization due to factors such as natural sediment resuspension and deposition. Variable application depths and delineation of no-grow zones are consistent with the USEPA-approved approach that Maryland and Virginia adopted for the Chesapeake Bay and tidal tributaries.
4. North Carolina's SAV protection strategy should not focus only on nutrients nor underemphasize the importance of other stressors including inorganic turbidity. Some portions of the draft amendment show an overemphasis on nutrient controls as an SAV protection strategy, to the

exclusion of other stressors that might be more important in some areas. For example, on p. 72 the amendment includes a figure (4.10) of the process for restoring SAV, and this figure incorrectly implies that nutrients are the only stressor or management variable for SAV. The accompanying text states: “Addressing suspended sediments can also aid water clarity. However, it was decided to focus on nutrients since they were thought to be having a greater influence on water clarity...”.

In fact, APNEP’s work with the biooptical model shows that in many coastal waters (especially high salinity areas), “turbidity dominates [light] attenuation, and “chlorophyll-a was a minor component of [light] attenuation” (Hall, 2020). In these waters, a focus on nutrient/chlorophyll would be ineffective for SAV restoration. We recommend that Figure 4.10 and the associated text be deleted from the amendment, and replaced with a broader conceptual framework. The framework should acknowledge the need to evaluate stressors/controls on SAV to determine the appropriate management strategies for different regions. Although nutrients/chlorophyll should be included in the framework, it should also include other stressors and strategies related to sediment, colored dissolved organic matter (CDOM), filter feeders, and physical disturbance.

5. *The individual components of light attenuation should be used for region-specific diagnostic purposes rather than water quality criteria.* NCWQA supports the recommendation to validate a biooptical model that quantifies the individual components of light attenuation such as chlorophyll-a, turbidity, and CDOM. The relative importance of these factors will be spatially variable, and so the biooptical model can be useful for determining which management strategies are likely to be effective in different coastal segments. We also anticipate spatial variability in the chlorophyll-a targets that would support SAV in different regions. In some regions, chlorophyll-a will not be a useful management variable.

With this background, NCWQA believes it is premature to assume that broadly-applicable revisions to chlorophyll-a criteria will be necessary or appropriate. By comparison, the states of Maryland and Virginia established water clarity criteria for the protection of SAV, but did not consider it necessary or beneficial to adopt chlorophyll-a (or turbidity) criteria for SAV. Rather, the water clarity criteria are considered sufficient to identify water quality conditions that support or do not support SAV growth, and factors such as chlorophyll-a and turbidity are used to diagnose causes/solutions for specific coastal segments. NCWQA recommends that the draft amendment acknowledge this successful approach as a possible outcome for North Carolina.

NCWQA supports the recommended efforts to explore the utility of broader revisions to the existing chlorophyll-a criterion for SAV protection. However, such revisions should only be made if a thorough analysis demonstrates that chlorophyll-a is a principal component of light attenuation across most of NC’s coastal waters, and that chlorophyll-a targets would be similar across those areas.

6. *Nutrient concentration criteria should not be adopted.* Figure 4.10 displays the setting of nutrient load or concentration targets (nutrient criteria) as a major step in restoring SAV. NCWQA concurs that setting nutrient load targets may be necessary for some segments, if research demonstrates that algal light attenuation is a major stressor on SAV and that nutrient controls would be necessary to meet designated uses. However, we strongly recommend

against the presumption that nutrient concentration criteria will be necessary or desirable. In the conceptual cause-effect chain of nutrient concentrations → chlorophyll → light attenuation → SAV limitations, nutrient concentrations are the furthest component from the actual aquatic life use, and therefore have the most uncertainty with respect to identifying targets. In general, nutrient concentrations are poor predictors of biological responses. With reference once again to the Chesapeake Bay, Maryland and Virginia determined that nutrient concentration criteria for SAV protection were unnecessary. We recommend that the authors delete references to nutrient concentration criteria while retaining discussion of the potential importance of nutrient load reductions in some settings.

NCWQA appreciates the opportunity to provide these comments. We look forward to working with DEQ to protect our coastal waters. Thank you for your time and consideration.

References

Hall, N.S. 2020. Progress Update: Development of scientifically defensible chlorophyll a standards for protection of submerged aquatic vegetation in the Albemarle-Pamlico Estuarine System. Presentation to NC Science Advisory Council.
https://files.nc.gov/ncdeq/Water%20Quality/Environmental%20Sciences/ECO/NutrientCriteria/Presentations/SAC_presentations_2020-10-30.pdf



October 19, 2021

Dear Jimmy Johnson,

Please accept these comments on the 2021 Amendment to the North Carolina Coastal Habitat Protection Plan (CHPP) on behalf of The Pew Charitable Trusts. The CHPP contains recommendations that align with Pew's environmental conservation and flood resilience priorities. We appreciate the collaborative and comprehensive approach taken in updating the CHPP and look forward to helping implement measures that promote sustainability for North Carolina's coastal resources and communities.

We are pleased that the Department of Environmental Quality (DEQ), Marine Fisheries Commission (MFC), Environmental Management Commission (EMC), and Coastal Resources Commission (CRC) prioritized the protection and restoration of Submerged Aquatic Vegetation (SAV) and coastal wetlands in the 2021 CHPP Amendment. We appreciated the opportunity to assist in convening technical workshops on these issues in 2020 and, in partnership with the NC Coastal Federation, to convene a CHPP Stakeholder Workgroup May-July 2021 that developed complementary recommendations for voluntary actions to improve water quality; these appear in Appendix A.

Pew's priorities in North Carolina include protecting coastal habitat, restoring river ecosystems, and flood preparedness at the community and state level. We have worked with a variety of stakeholders to advance these priorities, including development of the 2021 NC Oyster Blueprint, the 2021 Action Plan for Nature-based Stormwater Strategies, the 2020 Coastal Management Program and National Estuarine Research Reserve Federal Program Evaluation, and the 2020-2022 Triennial Review for Surface Water Standards undertaken by the EMC.

The process to draft the 2021 CHPP Amendment was rigorous and thoughtful. Recognizing that it is already a strong document, we ask that you consider some modest but important modifications and move it toward final approval and effective implementation. We offer the following recommendations for clarity, ease of implementation, and to increase public engagement:

1. Facilitate the formation of a new public/private partnership to increase stakeholder involvement in CHPP development, implementation, funding, and decision-maker support.
2. Modify RA 4.1 to expand SAV protection and restoration funding opportunities and minimize delays in implementing RAs to protect and restore SAV through water quality improvements.
3. Modify RA 4.7 to strengthen and streamline the process for establishing a water quality standard for light penetration that is critical for meeting photosynthetic needs of SAV.
4. Modify RA 4.8 to strengthen and streamline the process for establishing a water quality standard for chlorophyll a that is critical for meeting photosynthetic needs of SAV.
5. Prioritize RA 5.6 and RA 5.7 to participate in the development of a new Southeast Regional Salt Marsh Conservation Plan and protect marsh migration corridors.

Recommendation 1. Facilitate the formation of a new public/private partnership to increase stakeholder involvement in CHPP development, implementation, funding, and decision-maker support.

We urge DEQ to spearhead a meeting or series of meetings to determine how best to form a new public/private partnership that can assist with implementing the 2021 CHPP Amendment and with developing the next one. This critical enterprise will help elicit and incorporate meaningful public input, optimize stretched state resources, and build on decades of agency work to achieve CHPP goals.

Stakeholder engagement is a priority for a variety of natural resource managers in North Carolina. For example, the 2020 Natural and Working Lands Action Plan, 2012-2022 Comprehensive Conservation and Management Plan for the Albemarle-Pamlico National Estuary Partnership, and 2021 update to the North Carolina Oyster Blueprint all made the solicitation of stakeholder feedback a key component of their development process. The importance of engaging the public and a variety of different agencies is a theme that runs throughout the 2021 CHPP Amendment and appears in 13 RAs in the form of new workgroup formation, collaborative research, outreach, and training (RA 4.3, 4.4, 4.13, 5.3, 5.6, 5.7, 5.10, 5.11, 6.3, 6.4, 6.5, 7.3, and 8.1).

The 2021 CHPP Amendment explicitly acknowledges the value of multi-stakeholder working groups that bring together partners from multiple state and federal agencies, nonprofits, and academia. Most notably, the Amendment acknowledges the value of the NC Oyster Steering Committee in developing the NC Oyster Blueprint, a plan whose generation and implementation for a key coastal habitat has proven so successful as to obviate the need for an oyster-focused chapter in the 2021 amendment. As noted by DEQ staff during CHPP presentations given during August and September 2021 MFC, EMC, and CRC meetings, so great is the value of the Blueprint and its collaborative development and implementation - which, like the CHPP, happen on a 5-year cycle - that CHPP developers did not include oysters as an explicit priority in the 2021 amendment to avoid duplication of efforts and focus resources on other priority habitats.

The process of convening the CHPP Stakeholder Workgroup in collaboration with NC Coastal Federation demonstrated the value of engaging communities that will be impacted by CHPP RAs in the process of shaping water quality improvement strategies. Two lessons stand out from that experience. The first is the efficiency of having a small group of representatives from different coastal habitat constituencies learn about a CHPP priority issue (water quality) through a thoughtfully designed process of information sharing and analysis and disseminate those results among their constituencies. The second lesson is how resource-intensive designing such a process can be in terms of staff time, even when it is relatively focused in its scope of work, timeline, and target stakeholder groups.

While the Stakeholder Workgroup was intended as a discrete initiative to inform the 2021 CHPP Amendment in its final stages of development, it turned out to be a useful pilot project for how DEQ could, working with partners, develop a broader initiative to increase stakeholder involvement in future CHPP updates from start to finish. It has been useful to compare the Workgroup to the Oyster Steering Committee as a model for operationalizing stakeholder engagement to highlight the potential for a longer-term effort to solicit and incorporate meaningful input to the CHPP from diverse communities who are or could be impacted by the management actions it contains.

Recommendation 2. Modify RA 4.1 to expand SAV protection and restoration funding opportunities and minimize delays in implementing RAs to protect and restore SAV through water quality improvements.

Recommended Action 4.1 states:

By 2023, the North Carolina Department of Environmental Quality (DEQ) will obtain recurring funding that includes the adequate amount of staff to successfully evaluate and meet the submerged aquatic vegetation (SAV) acreage goals and implement all of the SAV recommended actions that contribute to meeting the goals.

We suggest replacing “obtain” with “pursue”, striking “recurring”, and adding “from state, federal, and private sources” after “funding” so that the new RA would read:

By 2023, the North Carolina Department of Environmental Quality (DEQ) will pursue funding from state, federal, and private sources that includes the adequate amount of staff to successfully evaluate and meet the submerged aquatic vegetation (SAV) acreage goals and implement all of the SAV recommended actions that contribute to meeting the goals.

Securing recurring funding should not be an obstacle to moving forward on RA implementation. There are numerous opportunities to secure funds to pay for coastal habitat restoration and conservation from federal, state and local government agencies, as well as private funders. Key to accessing recurring funding is strong public and private partnerships that demonstrate engagement by stakeholders who are essential to implementing CHPP RAs. The NC General Assembly is more likely to appropriate funding at levels sufficient to implement the RAs if there is significant and vocal public support. In addition, even non-recurring funding is easier to obtain when it is leveraged with other non-state funding.

The federal government can be a strategic partner in financially supporting the CHPP if thoughtfully engaged. In particular, the National Oceanic and Atmospheric Administration (NOAA), US Fish and Wildlife Service (USFWS), Environmental Protection Agency (EPA), US Department of Agriculture (USDA), and US Army Corps of Engineers (US ACE) all have grant programs that can and have been effectively leveraged to support SAV restoration efforts throughout the US. In the Chesapeake Bay, for example, the federal government had between \$460 million and \$570 million per year in budget authority for restoration activities in the Bay between FY2014 and FY2017.¹ The National Fish and Wildlife Foundation, the Department of Defense, N.C. Land and Water Fund also are all potential sources of government dollars, and research dollars can be secured from funders such as the National Science Foundation by working with university scientists and engineers.

According to NOAA, one of the largest federal funders of coastal habitat restoration projects, North Carolina ranks 16th among coastal states for the number of projects the agency funds, ranking behind numerous states with appreciably less coastline and acreage of estuarine waters.² Given increasing federal attention on coastal resiliency, the state may be able to access significantly greater federal investment in our coastal ecosystems and communities than it has in the past. To increase the

¹ Lipiec, Eva, “Chesapeake Bay Restoration: Background and Issues for Congress”, *Congressional Research Service*, 2018.

² <https://www.fisheries.noaa.gov/resource/map/restoration-atlas>.

agency's ability to develop and submit competitive proposals that are submitted it needs to proactively engage new partners and stakeholders and give them a sense of ownership in the CHPP itself. It also needs to strategically leverage state resources to serve as matching funds, evidence of which many proposals require. Increased funding for staff and projects requires strong forward momentum in building excitement and engagement by lots of stakeholders to implement CHPP RAs. It is essential to create this momentum to obtain the funding levels ultimately sought through RA 4.1.

Recommendation 3. Modify RA 4.7 to strengthen and streamline the process for establishing a water quality standard for light penetration that is critical for meeting photosynthetic needs of SAV.

Recommended Action 4.7 states:

By 2022, the Nutrient Criteria Development Plan (NCDP) Scientific Advisory Council (SAC) will evaluate recommending the Environmental Management Commission (EMC) establish a water quality standard for light penetration, with a target value of 22 percent to the deep edge (1.7 m) of SAV for all high salinity SAV waterbody regions, and a light penetration target of 13 percent to the deep edge (1.5 m) for all low SAV waterbody regions (Table 4.5; Figures 4.1-4.9).

We suggest making the EMC the subject of the sentence so that the new RA 4.7 would read:

By 2022, the Environmental Management Commission (EMC) will receive guidance from the Nutrient Criteria Development Plan (NCDP) Scientific Advisory Council (SAC) on establishing a water quality standard for light penetration, with a target value of 22 percent to the deep edge (1.7 m) of SAV for all high salinity SAV waterbody regions, and a light penetration target of 13 percent to the deep edge (1.5 m) for all low SAV waterbody regions (Table 4.5; Figures 4.1-4.9).

Given the importance of protecting and restoring SAV to support important ecosystem services like carbon sequestration, and the increased economic losses that will result from any delay, it is appropriate for the EMC, with its broad authority for activities affecting water quality, to assume responsibility for RA 4.7 and to task the Division of Water Resources (DWR), the SAC and others, as appropriate. The SAC is a critical body with extensive expertise that should be called upon and leveraged by the EMC in its oversight role of enacting rules related to water quality.

Establishing a water quality standard for light penetration is on the critical path for meeting the interim goal of protecting and restoring 191,155 acres of SAV coastwide as described in RA 4.2. It is the first step in the successful approach to SAV restoration used for the Chesapeake Bay, as described in the draft CHPP 2021 Amendment³, p. 62:

³ <https://files.nc.gov/ncdeq/Marine-Fisheries/coastal-habitat-protection-plan/CHPP-2021-Amendment-Draft-20210806-Commissions.pdf>.

In order to achieve these SAV restoration goals, water clarity criteria were developed by the Chesapeake Bay Program partners⁴ and published by the EPA on behalf of the partnership based on:

- 1. Light requirements for underwater grasses*
- 2. Factors that contribute to light attenuation*
- 3. Epiphyte contribution to light attenuation on leaf surface*
- 4. Minimal requirements for light penetration through the water column and leaf surface*

The causal chain from SAV acreage goals to light penetration to chlorophyll *a* to nutrient load/concentration targets is further elaborated in the CHPP 2021 Amendment Draft⁵, Figure 4.10, p. 72.

According to a recent study on the economic impacts of SAV loss in the Albemarle-Pamlico conducted by researchers from NC State and Duke Universities, the aggregate losses attributable resulting from impacts to fisheries productivity, residential property value, and carbon sequestration ecosystem services are conservatively estimated to be \$1,290 per acre over the next decade.⁶ Seagrasses are globally recognized for their ability to capture carbon dioxide and store the resulting “blue carbon” in their vegetation and soils. However, their degradation, through development or poor water quality, releases this stored carbon.⁷

The EMC can also advocate more effectively than the SAC for any additional funding and trained personnel needed to keep RA 4.7 on schedule. Putting the EMC in charge is in keeping with its mandate as noted in the draft CHPP 2021 Amendment⁸, p.3:

The EMC has authority over activities affecting water quality, such as point and nonpoint discharges, wastewater, alteration of wetlands, and stormwater. The EMC’s rules are implemented by different DEQ agencies, including the NC Division of Water Resources (DWR), the NC Division of Air Quality (DAQ), and the NC Division of Energy, Mineral, and Land Resources (DEMLR).

Recommendation 4. Modify RA 4.8 to strengthen and streamline the process for establishing a water quality standard for chlorophyll *a* that is critical for meeting photosynthetic needs of SAV.

Recommended Action 4.8 states:

*By 2022, the NCDP SAC will evaluate the chlorophyll *a* water quality standard and as needed, recommend it be revised by the EMC to ensure*

⁴ The Chesapeake Bay Program Partners “Bring together expertise, authority and resources from a broad range of organizations” including six states, the District of Columbia, 19 federal agencies, and others.

⁵ CHPP 2021 Amendment Draft.

⁶ <https://deq.nc.gov/news/press-releases/2021/05/25/new-research-measures-economic-losses-further-declines-submerged>

⁷ There are currently efforts underway to evaluate greenhouse gas fluxes in North Carolina’s seagrasses and emergent coastal wetlands. This work will ideally enable DEQ to incorporate coastal wetlands into the State’s Greenhouse Gas Inventory, and help managers understand and evaluate the carbon impacts of protecting and restoring these ecosystems.

⁸ <https://files.nc.gov/ncdeq/Marine-Fisheries/coastal-habitat-protection-plan/CHPP-2021-Amendment-Draft-20210806-Commissions.pdf>.

protection of SAV in high and low salinity waterbody regions, beginning with the Albemarle Sound and Chowan River, and continuing with other waterbodies that support SAV (Table 4.5; Figures 4.1-4.9).

We suggest putting the EMC in charge of this action so that the new RA 4.8 would read:

By 2022, at the request of the EMC, the NCDP SAC will evaluate the chlorophyll a water quality standard and as needed, recommend it be revised by the EMC to ensure protection of SAV in high and low salinity waterbody regions, beginning with the Albemarle Sound and Chowan River, and continuing with other waterbodies that support SAV (Table 4.5; Figures 4.1-4.9).

It is appropriate for the EMC to assume responsibility for RA 4.8 and to task the DWR, the SAC and others as appropriate. The EMC can also advocate more effectively than the SAC for any additional funding and trained personnel needed to keep RA 4.8 on schedule, especially in light of the NCDP (2019)⁹ statement on p.5:

. . . our greatest challenge is to maintain sufficient funding and trained personnel to complete the tasks outlined in this plan. Nothing in this plan obligates the DWR [under which the SAC is established¹⁰] to a course of action in the absence of program resources.

The EMC should use its authority to ensure that schedules are met or accelerated for tasks established in the CHPP and in the NCDP pertaining to SAV and to related chlorophyll a water quality standards and nutrient criteria for the Albemarle Sound, Chowan River, and estuaries statewide, building on the progress made in developing a site-specific chlorophyll a surface water quality standard for the High Rock Lake Reservoir¹¹.

In addition to the 2021CHPP Amendment, relevant schedules appear in the 2019 NCDP (2019), such as:

- By October 2021, concurrently with activities in the Albemarle Sound, the DWR will “Prioritize specific estuaries for nutrient criteria and confirm approaches proposed in the Albemarle Sound nutrient criteria development process with SAC involvement.” (p.19, Task No. 7)
- By April 2022, nutrient criteria recommendations for the Chowan River and Albemarle Sound are scheduled to be “developed and documented in a phase II report” (p. 14, Task No. 12)

⁹ <https://files.nc.gov/ncdeq/Water%20Quality/Environmental%20Sciences/ECO/NutrientCriteria/North-Carolina-NCDP-v2-05162019-final.pdf>.

¹⁰ <https://files.nc.gov/ncdeq/Water%20Quality/Environmental%20Sciences/ECO/NutrientCriteria/Nutrient-SAC-Approved-Charter-10302019.pdf>.

¹¹ <https://files.nc.gov/ncdeq/Environmental%20Management%20Commission/EMC%20Meetings/2021/july2021/pwrpoints/A/G21-19-CVENTALORO-HRL-Rulemaking-ForReview-1.pdf>.

The EMC should also ensure the provision of timely public notice and opportunities for stakeholder involvement in the implementation of CHPP RAs and related NCDP initiatives.¹²

Recommendation 5. Prioritize RA 5.6 and RA 5.7 to participate in the development of a new Southeast Regional Salt Marsh Conservation Plan and protect marsh migration corridors

Officially launched in May 2021 by the Southeast Regional Partnership for Planning and Sustainability (SERPPAS), the South Atlantic Salt Marsh Initiative (SASMI) aims to conserve over 1 million acres of salt marsh habitat from North Carolina to Northeast Florida. These coastal wetlands provide habitat for approximately 75% of North Carolina’s commercial and recreational fish species, stabilize shorelines, protect against storm surge, and absorb floodwaters. These coastal resilience benefits are valued at approximately \$1.8 million per kilometer² each year.

Salt marshes are also effective carbon sinks, storing far greater amounts of carbon than they natural release. According to research by Duke University,¹³ North Carolina’s coastal marshes and seagrass together currently store about 80 million metric tons of CO₂e and sequester an additional 308,000 metric tons each year. When marshes drown or erode, this stored carbon is emitted back into the atmosphere – in scenarios with the highest sea level rise, for North Carolina alone the lost carbon sequestration potential is approximately equal to the greenhouse gas emissions from 4.4 million cars in one year.¹⁴ Further research by NOAA¹⁵ has also demonstrated that salt marsh are able to continually build carbon stores as sea levels rise - if there is space for marsh to move inland. This research further underlines the importance of continued conservation and protection of marsh migration corridors.

Modelled on the proven success of America's Longleaf Restoration Initiative, SASMI brings together federal, state, and local government officials, conservation groups, academics, and community leaders in pursuit of a common goal of conserving and restoring the regions valuable salt marshes. North Carolina is already taking a leadership role in SASMI planning begun in 2021 by virtue of DEQ leadership participation in the SASMI steering committee. Through development of a regional salt marsh conservation plan, this diverse group of partners will identify key strategies to protect marsh migration corridors, remove or modify barriers that may prevent future marsh migration, and restore marsh where it currently exists. In addition to the benefits this will provide to fish, birds, and other wildlife, this plan will ensure the resilience benefits the marsh provides to neighboring communities, military installations, transportation routes, and critical infrastructure persist into the future.

As watershed and marsh migration corridors transcend jurisdictional (state) boundaries, regional collaboration is key to achieving meaningful salt marsh conservation and restoration outcomes. Continued active participation in the SASMI represents an opportunity to benefit from and contribute to

¹² <https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/nutrient-criteria-development-plan>.

¹³ <https://nicholasinstitute.duke.edu/sites/default/files/documents/Coastal-protection-and-blue-carbon-North-Carolina--fact-sheet.pdf>.

¹⁴ <https://nicholasinstitute.duke.edu/sites/default/files/documents/Coastal-protection-and-blue-carbon-North-Carolina--fact-sheet.pdf>.

¹⁵ <https://agupubs.onlinelibrary.wiley.com/doi/epdf/10.1029/2019JG005207>.

the pooling of diverse expertise in the Southeast region. Further, doing so would represent meaningful action towards embracing a consensus recommendation to pursue partnerships at a regional level to ensure coordination as noted in the 2012 Climate Ready North Carolina: Building a Resilient Future report and, more recently, reemphasized in the 2020 Climate Risk Assessment and Resilience Plan.

This innovative multistate partnership has already begun to bring much needed attention to an ecosystem of national, regional, and local importance and, through the coalescing of expertise from throughout the region, will facilitate the identification and leveraging of synergies between jurisdictions. Furthermore, as other regional initiatives (e.g. America's Longleaf Restoration Initiative, The Gulf of Mexico Alliance, The Chesapeake Bay Program) have shown, these partnerships represent attractive funding opportunities for both public and private grants.

Once the 2021 CHPP Amendment is approved, and as other collaborative opportunities such as the NC Oyster Blueprint, Action Plan for Nature-Based Stormwater Strategies, Climate Risk Assessment and Resilience Plan, and the SASMI become implemented in the coming years, we look forward to working with North Carolina's leaders to implement CHPP RAs and CHPP Stakeholder Workgroup recommendations to conserve the mosaic of SAV, coastal wetlands, river ecosystems, and human communities so they are resilient and thrive and adapt even as the climate changes and sea levels rise.

Thank you for considering these comments. We look forward to working with you to protect and restore North Carolina's coastal habitats for the benefit of coastal ecosystems and communities today and future generations tomorrow.

Sincerely,



Leda A. Cunningham
Officer, The Pew Charitable Trusts



The Town of Pine Knoll Shores


October 6, 2021

CHPP 2021 Amendment Comments
 P.O Box 769
 Morehead City, N.C. 28557.

The Town of Pine Knoll Shores works hard to protect and restore coastal fish habitats which are vital to our productive fisheries. As Town Manager, I participated in a stakeholder group that made ten recommendations for immediate voluntary actions that can be taken as part of the Coastal Habitat Protection Plan (CHPP) to enhance and sustain the fishery productivity of our coastal estuaries. Please include our group's recommendations as a key part of the updated CHPP. I feel strongly that the actions we are proposing will encourage and expedite efforts by local governments such as mine to maintain living shorelines and prevent stormwater pollution so that the fish habitats within our estuaries are protected and restored.

One of our major recommendations encourages the formation of a partnership with local governments and private stakeholders to help the three regulatory commissions and DEQ staff to implement the CHPP. This partnership with key stakeholders is vital to build public understanding, support and ultimately more funding for management actions included in the CHPP and by the stakeholders. I'm proud that our town had the foresight to devise a watershed management plan that has enabled us to strategically raise and invest millions of federal, state, and local dollars in environmental projects that protect fishery habitats. As a result of this plan, we have installed numerous projects that reduced stormwater pollution and related flooding, and that also prevent shoreline and salt marsh erosion by installing living shorelines. Based upon our direct experiences in protecting fish habitats, we would welcome the opportunity to work with the DEQ and commission CHPP leadership to encourage other local governments to follow in our footsteps.

Sincerely,



Brian Kramer
 Town Manager



Mr. Jimmy Johnson
 North Carolina Department of Environmental Quality
 217 W Jones St
 Raleigh, NC 27603

Dear Jimmy Johnson,

I am the Co-Pastor of St. Paul African Methodist Episcopal Zion Church in Aurora, NC. I am also a marine biologist and have spent my career studying the North Carolina coast. In other words, I am intimately familiar with the realities of coastal degradation and the need for healthy habitats, improved water quality, and nature-based solutions. These don't just matter to the fish of the sea and the birds of the air, though that's important. They don't just matter to the human communities along the coast and further inland, though we are important. They matter to God, because as we read in the Bible, "the earth is the Lord's and the fullness thereof" (Psalm 24).

My church is on the frontlines of climate change. We sit right on the Pamlico River, so storm surge and sea level rise are a constant threat. We've experienced major flooding twice in the past decade, from Hurricane Irene and from Hurricane Florence. We've flooded before, and we'll flood again. But the devastation is not inevitable. With support, St. Paul and communities like ours can better prepare for the realities of climate change, building social and physical resilience so that when the next Florence does come we can recover more quickly.

To this end, I want to emphasize the importance of including the public-private partnership program in the Coastal Habitat Protection Plan. As a pastor, I know that the most sustainable change happens not when I single-handedly take on a project, but when I share it with the congregation. The Oyster Blueprint was a stunning example of the importance of staking up a big tent and inviting all the stakeholders to a fish fry underneath it. We need to build up the capacity for community organizations to engage meaningfully with state agencies involved in coastal and resilience planning. A stakeholder-driven public/private partnership is the best mechanism for engaging all residents in understanding and planning for the challenges that lie ahead.

Second, I want to emphasize the importance of the Coastal Habitat Protection Plan's recommended actions that protect and restore natural habitats, and increase climate resilience through the restoration and protection of wetlands and living shorelines. These resources are a critical factor for protecting our natural habitats while also providing important benefits including flood mitigation, wave reduction, carbon sequestration and water filtration. God has provided us with incredible ecosystems that benefit both our health and the health of the world. We ought to be investing in protection and restoration of those places.

The CHPP isn't just about economy or ecology. It's also about justice. To invoke the words of the Prophet Amos, we want justice to roll down like waters; clean, protected, restored, and resilient waters.

Sincerely,
 Rev. Gerald Godette
 Associate Pastor, St. Paul AME Zion Church
 Aurora, NC

October 21, 2021

CHPP 2021 Amendment Comments
N.C. Department of Environmental Quality
publiccomments@ncdenr.gov

Re: Comments on Draft Coastal Habitat Protection Plan 2021 Amendment

The Southern Environmental Law Center submits these comments on the 2021 Amendment to the North Carolina Coastal Habitat Protection Plan (“Draft Amendment”) on behalf of North Carolina Wildlife Federation, Sound Rivers, the Pamlico-Tar Riverkeeper, and the Neuse Riverkeeper. We applaud the authors of the amendment for providing a clear-eyed assessment of the challenges our coast faces, particularly regarding our coast’s declining water quality. From climate change to stormwater, the amendment provides a well-documented and devastating assessment of the future of our coast unless we collectively act now. The Department of Environmental Quality (“DEQ”) has a legal obligation to use its existing authority to better protect our estuaries and to establish new standards to be used as a tool to protect existing uses. As discussed below, we support the adoption of the Draft Amendment with revisions to encourage the use of additional authority as well as consideration of additional items to improve our water quality, and in turn, our coastal resources.

I. DEQ can improve water quality through better use of existing authority as well as adopting proposed standards.

As the Draft Amendment recognizes, water quality affected by sources in the upper coastal plain and the piedmont affects the ability of submerged aquatic vegetation (SAV) to thrive. The amendment makes clear that current water quality is not adequate, that enforcement is ineffective, and that our coastal resources suffer as a result. We encourage DEQ to look at all of the watersheds that flow into our coastal system and use the full breadth of its authority to protect water quality. We cannot keep our estuaries clean without controlling pollution sources throughout the watersheds.

A. The legal imperative to protect SAV.

Protecting SAV is not only important for the reasons identified in the Draft Amendment, it is a legal imperative. Under the Clean Water Act, North Carolina is responsible for ensuring that its laws serve the purpose of restoring and maintaining “the chemical, physical, and biological integrity” of its waters.¹ North Carolina’s rules embody that concept in the antidegradation rule, which states:

¹ 33 U.S.C. § 1251(a).

The [Environmental Management] Commission shall protect existing uses . . . and the water quality to protect such uses by classifying surface waters and having standards sufficient to protect these uses.²

Existing uses include “uses actually attained in the water body on or after November 28, 1975, whether or not they are included in the water quality standards.”³ In coastal waters, the minimum protections are for the use of waters for “aquatic life propagation, survival, and maintenance of biological integrity (including fishing, fish, and Primary Nursery Areas (PNAs)); wildlife; secondary contact recreation as defined in Rule .0202 in this Section; and any usage except primary contact recreation or shellfishing for market purposes.”⁴

As a result, protecting estuarine habitats, including SAV, is necessary to meet DEQ’s legal obligation to ensure that each of its permitting processes and other actions contribute to ensuring that there is no loss of existing uses in our coastal ecosystems.

B. New standards are needed to improve protections.

We agree with the Draft Amendment’s recommendation to set SAV acreage goals and to establish nutrient and clarity standards to protect SAV. Setting these new benchmarks will allow DEQ to more specifically identify problematic areas and measure changes in water quality.

To supplement the proposed new standards, DEQ should evaluate and adopt ecological flow standards. The Division of Water Resources has extensive experience with evaluating ecological flows and the detrimental effects of having too much, or too little, water flowing into a stream.⁵ Because sediment and pollutants identified as threats to SAV are often carried by stormwater, setting ecological flow standards that can be used to inform the stormwater permitting program could provide additional protection.

C. DEQ must enforce existing laws during the permitting process.

The state can and should consider implementing new protections for SAV, but it should not overlook existing tools. Development of SAV acreage goals and standards to help achieve those goals will take time. The Division of Water Resources’ (“DWR”) and the Division of Energy, Mineral, and Land Resources’ (“DEMLR”) permitting processes allow DEQ to improve water quality now. Existing laws that are underutilized include: requiring disclosure and control of pollutants discharged by point sources, prohibitions on stream and river pollution through groundwater, protections for aquatic life uses, and stormwater authority.

NPDES Program

DWR’s National Pollutant Discharge Elimination System program can make significant improvements in water quality simply by enforcing two requirements: that all

² 15A N.C. Admin. Code 2B.0201(b).

³ 15A N.C. Admin. Code 2B.0202

⁴ 15A N.C. Admin. Code 2B.0220

⁵ N.C. Department of Environmental Quality, Instream Flow Unit, *available at* <https://deq.nc.gov/node/82948>.

dischargers disclose what is in their discharge and apply available technology to control pollution.⁶ The law is based on a simple premise: that if a discharger can keep pollution out of our streams and rivers, it must. DWR, however, typically focuses on water quality standards, allowing pollution so long as the water quality standard is not violated. As a result, permits allow unnecessary pollution to be discharged. That is critical for our coastal systems, which sit at the end of rivers that receive waste from many wastewater treatment plants and industrial dischargers. Unless DWR begins requiring disclosure and use of available technology to control pollution into the rivers that run from the piedmont to the coast, our estuarine ecosystems will continue to deteriorate from the downstream consequences of impaired water quality.

Point Sources Discharging Through Groundwater

Last year, the U.S Supreme Court clarified an additional tool that DEQ has for controlling indirect pollution of streams, rivers, and estuaries. In *County of Maui v. Hawaii Wildlife Fund*, the Court recognized that discharges of pollution from point sources to surface waters through groundwater are prohibited by the Clean Water Act.⁷ DEQ, however, continues to issue “non-discharge” permits that allow the application of waste without assessing whether or not that waste contaminates groundwater that then pollutes surface water. There is evidence that land applied wastewater,⁸ biosolids,⁹ and animal waste¹⁰ contribute to surface water pollution. DEQ must either permit these facilities based on their pollution of surface waters through groundwater or include monitoring requirements that ensure they do not.

Sediment and Erosion Control Permits

Similarly, DEQ should emphasize the importance of complying with existing water quality standards when issuing sediment and erosion control permits. As recognized in the Draft Amendment, off-site sedimentation continues to be a significant problem nearly 50 years after the passage of North Carolina’s Sediment Pollution Control Act and the federal Clean Water Act.

One recent example of DEQ enforcement in western North Carolina represents authority that the agency must use more frequently to meet the legal mandate to protect

⁶ See 15A N.C. Admin. Code 2H.0105(a) (requiring application for pollutants to be discharged); 2H.105(j) (requiring disclosure of toxic pollutants); 2H.0118 (requiring effluents and limits required by Clean Water Act); 02B.0406(b)(3) (requiring case-by-case technology-based limits).

⁷ 140 S.Ct. 1462 (Apr. 23, 2020).

⁸ See N.C. Division of Water Resources, *Chowan River Basin Water Resources Plan* at Ch. 7, p. 6 (2021) (recommending increased monitoring to “provide for more accurate assessment of surface water impairments resulting from groundwater discharges in the Chowan River basin and enable the state to make sound permitting judgments.”), available at <https://deq.nc.gov/about/divisions/water-resources/water-planning/basin-planning/water-resource-plans/chowan/chowan>.

⁹ See Showers, W. et al., *Evaluation and Remediation of Nitrate Flux from Biosolid Application Fields to Surface Waters in the Neuse River Basin*, North Carolina’s Section 319 NPS Program: Final Report for EW07015 (Feb. 15, 2007).

¹⁰ See U.S. Geological Survey, *Surface-Water Quality in Agricultural Watersheds of the North Carolina Coastal Plain Associated with Concentrated Animal Feeding Operations*, Scientific Investigations Report 2015-5058 (2015).

existing uses in our coastal waters. In Surry County, DWR issued a notice of violation for uncontrolled sediment pollution into a trout stream, specifically citing the “negative impacts to aquatic biology.”¹¹ In addition, the agency cited impacts to wetlands from “sediment runoff and accumulation.”¹² DEQ should clarify during the permitting process that sedimentation of wetlands, creeks, rivers, and estuaries will be treated not only as violations of sediment and erosion control requirements, but also as daily violations of aquatic life water quality standards, and that liability for such violations could be penalized on a daily basis under state or federal law until the sedimentation is remedied.

Municipal Separate Storm Sewer Systems Permits

DEQ must also fully implement its authority to control stormwater from municipal separate storm sewer systems (MS4s)—both for municipalities and the N.C. Department of Transportation. Most of our coastal rivers have municipalities with MS4 permits in their watershed and all have N.C. DOT infrastructure subject to that agency’s MS4 permit. These permits present a significant opportunity to meaningfully address stormwater that degrades water quality across the state. According to the most recent assessment posted on DEQ’s website, of the 46 MS4s analyzed in November 2020, only 5 were in compliance and 36 had received a notice of violation.¹³ The clearest demonstration of the stormwater program’s shortcomings, however, is the growing extent of impaired waters. Shellfish closures are steadily growing. For example, shellfish closures in the Newport River have steadily increased over the last several years. If effectively implemented, the MS4 permitting program could be a valuable tool for improving coastal water quality.

II. The current water infrastructure system does not meet the state’s needs.

We agree that fixing the water infrastructure system is critical to protecting our coastal ecosystems. The Draft Amendment correctly recognizes the challenges caused by inflow and infiltration as well as climate change; however, it underestimates the degree of change that must take place to address those problems.

As recognized in the amendment, the existing system sets as a goal that utilities will function as “self-sufficient business enterprises.”¹⁴ That is not feasible for many, perhaps most, utilities. Maintaining and upgrading water infrastructure systems is expensive. As the Draft Amendment recognizes, the state needs to invest approximately \$1 billion each year.¹⁵

According to the Environmental Finance Center at the University of North Carolina, a cost recovery ratio of 1.2 “allows utilities to account for day-to-day operations and

¹¹ Letter from J. Graznak, DWR, to M. Bottomley, Bottomley Evergreens & Farm, Re: NOV-2021-SS-0007 at 4 (June 30, 2021).

¹² *Id.*

¹³ N.C. Department of Environmental Quality, *NPDES MS4 Permitting Program Update* (Nov. 2020), available at https://files.nc.gov/ncdeq/Energy%20Mineral%20and%20Land%20Resources/Stormwater/MS4_Documents/PRESENTATION-MS4-Program-Update-20201102.pdf

¹⁴ Draft Amendment at 153, 154.

¹⁵ *See id.* at 152 (citing need for \$17 billion in investment over 20-year period).

maintenance expenses, as well as for future capital costs.”¹⁶ In 2021, only 19 percent of utilities evaluated by the Environmental Finance Center had a cost recovery ratio of 1.2 or greater.¹⁷ Many of the utilities with low cost recovery ratios serve less than 10,000 customers and have little potential to fund multi-million infrastructure upgrades.¹⁸

In addition to being inadequate, the revolving loan funds often exclude small communities and communities of color. A recent analysis of drinking water state revolving funds found that only 7.1 percent of eligible utilities received assistance.¹⁹ The study found that smaller communities were less likely to receive funding, perhaps due to “limited capacity to apply for assistance or take on debt.”²⁰ The authors also determined that “communities with larger white populations are slightly more likely to receive . . . assistance.”²¹

By proposing a dedicated state funding source, the Draft Amendment course corrects—recognizing that water is a shared resource and requires a shared commitment. The health of rivers and estuaries that belong to all North Carolinians and are held in public trust by the State should not depend on the successful operation of hundreds of underfunded, wholly independent utilities.

Funding alone cannot repair our infrastructure system. We suggest that the CHPP also recommend:

- **Regional Planning.** Careful planning is essential to wise investment. The CHPP should recommend that the legislature create a uniform process to guide regional water planning.
- **Incentives for Regionalization.** Small utilities cannot sustainably build, maintain, and operate water infrastructure of the future without building an integrated network. The CHPP should encourage the legislature to provide incentives for creation of efficient, consolidated utilities that expand water access.
- **Consolidation of Failing Systems.** North Carolina is caught in a cycle of rescuing “distressed” utilities; an intentional, programmatic consolidation effort is essential to ensuring long-term water quality improvements.
- **Customer Assistance Programs.** Even with more efficient, state-supported infrastructure, some customers will not be able to afford their water and sewer bills. Providing customer assistance options can decrease revenue losses from utilities while ensuring access to clean water for all North Carolinians.

¹⁶ UNC School of Government-Environmental Finance Center, et al., *2021 North Carolina Water and Wastewater Rates Report* at 12, available at https://efc.sog.unc.edu/wp-content/uploads/sites/1172/2020/04/NC_WaterWastewaterRatesReport_2021.pdf.

¹⁷ *Id.*

¹⁸ *Id.*

¹⁹ Environmental Policy Innovation Center, *Drinking Water Equity: Analysis and Recommendations for the Allocation State Revolving Funds* at 3, available at <https://www.policyinnovation.org/publications/drinking-water-equity>.

²⁰ *Id.* at 16.

²¹ *Id.* at 17.

III. The Draft Amendment should consider additional issues.

A. Climate change requires updating design storms.

We appreciate the Draft Amendment's inclusion of a discussion about climate change, which is an important and necessary backdrop for all sections of the CHPP. With regard to the Draft Amendment's focus on water quality concerns, climate change, will likely cause the coastal plain to experience more frequent and more intense storms.²² In turn, the Draft Amendment should recommend that DEQ update its design storm values to reflect these changes.

As the Draft Amendment recognizes, "it is likely that the frequency of severe thunderstorms and the annual total precipitation in NC will increase," and "[i]t is very likely that extreme precipitation frequency and intensity in NC will increase due to increases in atmospheric water vapor content."²³ According to the 2020 North Carolina Climate Science Report, while annual rainfall averages have not changed across the state, North Carolina has already experienced an increase in the number of extreme rain events seen each year across its regions.²⁴ As the atmosphere warms, the amount of water vapor the air can hold increases, creating conditions for storms to release more rainfall. 2015-2018 was one of the wettest periods in the record (since 1895) across the state. Even under a climate scenario with slightly reduced emissions, the report states it is virtually certain (99%-100% chance) that the number of extreme rain events will increase across the state.²⁵

Those higher volume storms are likely to result in increased loading of nitrogen, phosphorus, and other pollutants from agricultural and urban environments. To deal with the increased storm intensity, the state must update 10- and 25-year design storm values used to calculate necessary stormwater control measures. As DEMLR has recognized, "the historical data no longer accurately reflects the size of storm events going forward."²⁶ DEQ should update 10- and 25-year design storm values to reflect future storm events as accurately as possible.

B. Habitat impacts from bottom-disturbing activities.

The CHPP should provide a clearer path forward to identifying the most harmful effects of bottom disturbing equipment and activities on estuarine habitats. As the Draft Amendment recognizes, "[b]ottom disturbing gears can potentially affect primary productivity through the connection of bottom and water column processes."²⁷ It states that "[e]xcessive suspended sediments from bottom disturbing fishing gear and propeller wash

²² Draft Amendment at 34.

²³ Draft Amendment at 30.

²⁴ A day with rainfall totaling 3 inches or more qualifies as an extreme rain event in this report. North Carolina Institute for Climate Science, *North Carolina Climate Science Report* at 6 (Sept. 202), available at https://ncics.org/wpcontent/uploads/2020/10/NC_Climate_Science_Report_Full_Report_Final_revised_September2020.pdf.

²⁵ N.C. Climate Science Report at 21.

²⁶ N.C. Department of Environmental Quality, Flooding Guidance, <https://deq.nc.gov/about/divisions/energy-mineral-land-resources/energy-mineral-land-rules/stormwater-program/flooding-guidance>.

²⁷ Draft Amendment at 67.

can bury SAV and reduce water clarity, resulting in decreased SAV growth, productivity, and survival.”²⁸

We support the Draft Amendment’s recommendation that “[f]ishing gears, practices, and areas should be evaluated regularly to ensure there are no additional impacts to SAV.”²⁹ We recommend that the CHPP propose research into the effects of bottom-disturbing gear and activities identified in the Draft Amendment and methods to reduce harmful effects, if those effects are documented.

C. North Carolina wetland rules.

The Environmental Management Commission has released for public comment revisions to state wetland rules to provide a permitting system for wetlands that were excluded from federal jurisdiction under the U.S. Environmental Protection Agency and Army Corps of Engineers’ 2020 “Navigable Waters Protection Rule.”³⁰ Because of their critical role in protecting coastal water quality, the CHPP should support the proposed wetland rules.

IV. **Conclusion.**

The challenges facing our coastal ecosystems are significant. Climate change, poor water quality, and development pressure would, independently, make protecting our coastal resources difficult. North Carolina must face them in combination. We appreciate the Steering Committee’s efforts to summarize those challenges in the Draft Amendment and believe that the recommendations presented will advance coastal habitat protection in the state. We recommend a greater focus on DEQ’s existing authority and the need for protective discharge and stormwater permits in addition to increased enforcement. The CHPP should also recommend more sweeping changes to our state’s water infrastructure system—changes that allow for equitable distribution of infrastructure funding, more efficient provision of drinking and wastewater services, and less water pollution from failing or overrun systems.

Thank you for considering these comments. If you have any questions, please contact me at

Sincerely,



Geoffrey R. Gisler
Senior Attorney

²⁸ *Id.* at 67.

²⁹ Draft Amendment at 67.

³⁰ See N.C. Department of Environmental Quality, 401 Program: Public Notice for Public Comment Period for Permanent Rules 15A NCAC 02H .1301 (Revision) and 15A NCAC 02H .1400 (.1401 through .1405), *available at* <https://deq.nc.gov/news/events/401-program-public-notice-public-comment-period-permanent-rules-15a-ncac-02h-1301>.

Dear Jimmy Johnson,

I am writing in support of the 2021 Coastal Habitat Protection Plan Amendment. I have been involved with North Carolina's management of fisheries and environmental resources for over forty years. I was involved in drafting legislation authorizing the CHPP in the Fisheries Reform Act (FRA) and worked intensively on the first edition of the CHPP in the late 1990's. The CHPP was meant to be the cornerstone of the FRA for protection of critical fish habitat and the water quality in those habitats.

Having a career in the Division of Marine Fisheries, serving on the Marine Fisheries Commission, and university instructor on coastal issues and as an active community member, I can speak directly to the importance of protecting our natural coastal resources for our enjoyment and for future generations. Numerous restrictions have been implemented on fish harvest as part of the FRA the last 25 years to attempt to keep our fish stock and fisheries sustainable. Yet, landings from our commercial fishermen have declined to some of the lowest levels since the 1950's. Our fishing communities have noted the changing nature of our fisheries, have felt pressure from numerous sides for additional restrictions, and as a result our state is seeing declines in younger people entering commercial fishing and declines in the number of people commercial fishing. Local, sustainable seafood is an important economic driver for the coast, and it's important to our state's culture and heritage. Our spawning and nursery habitats are integral to both commercial and recreational fisheries, and it is clear that water quality is of the utmost importance to providing healthy critical fish habitats.

In addition to fisheries, water quality is critical for our tourism industry. Tourism is the lifeblood of many of our coastal economies, and yet we continue to see water quality declines. Scientific experts note that eutrophication problems are increasing, with toxic algal blooms occurring in many coastal waters. Albemarle Sound and the Chowan River have experienced intense blooms in recent years; these areas once served as critical habitat for river herring. The river herring fishery was once one of our most important fisheries; harvest was prohibited in the early 2000's, yet the population has not recovered. Striped bass in the area are now considered overfished even though significant harvest restrictions have been in place since the 1990's to keep the stock healthy. Science has shown these species are highly dependent on adequate critical fish habitat and good water quality during spawning and for their nursery areas. The need to address water quality is urgent and only growing.

I applaud the CHPP for addressing the issue of water quality. It is also encouraging to see the CHPP recommend forming public/private partnerships to develop watershed management plans. I recommend that DEQ go one step further, and expand the scope of the public/private partnership. As a member of this community for forty years, I know that working with community members and stakeholders is the key to building support and seeing results. This partnership should help to plan and implement more than watershed management plans. The partnership should help to seek additional sources of funding that might not be available to DEQ to implement water quality actions, such as those recommended by the stakeholder workgroup in Appendix A. It is my experience, that such partnerships facilitate development of meaningful actions that have strong likelihood of producing results in natural resource issues that are in the public domain.

The CHPP has taken on a herculean task, but one that is necessary. With buy-in from stakeholders, the CHPP will be much more likely to overcome obstacles and implement actions with broad support. I look forward to seeing the CHPP put into action.

Sincerely,

Jess H. Hawkins III

Hi,

My name is Mandy Uticone. I am an oyster farmer in Sneads Ferry, North Carolina. I am writing this letter in regards to the Coastal Habitat Protection Plan, and the meeting discussing this and water quality concerns in North Carolina.

I have been oyster farming for 6 years, 2 years ago I decided to start my own farm after working on farms and enjoying it. I have always valued the environment and marine life teaching kids for 15 years- water quality was always one of my favorite topics to teach about because I do believe it is very important, but there are definite concerns with water quality in NC.

With so much development, and increasing population in NC along the coast, I do worry and have seen changes in water quality. Stormwater runoff after a lot of rain and hurricanes has always been an issue, but with increased development I have seen an increase in closures after heavy rainfall. I worry about this because being an oyster farmer when we get closed after heavy rains it puts a lot of pressure and stress on farmers that do this for a living. Last year in November we were closed for one of the busiest times of the year for oysters, Thanksgiving. Financially that puts a strain on a lot of us, but it is also concerning for the future of the industry. I've always been a big advocate for clean waterways, and I got into oyster farming because I believe it is one of the most sustainable ways to farm. Oysters are such good filters, and with increasing water quality issues we need to get oyster shells back in the water to increase wild populations. We also need to continue educating people on the importance of oysters for clean water, and figure out ways to keep our waterways clean so we can provide safe seafood to our local restaurants and consumers.

When we close down for a week or two at a time, I worry I am going to lose my restaurant accounts to areas that are a little closer to the ocean, that may flush out quicker. I feel I shouldn't have to worry about these things if we had healthy clean waterways. Reducing runoff with increased wetlands to act as a sponge, and increasing natural oyster reefs to help clean the water, and watershed planning in areas with a lot of development could be very beneficial. I know many of these things are being worked on, I am grateful that people recognize this, but I am also concerned for some oyster lease locations that struggle with being closed several times of the year for extended amounts of time because of water quality. I truly enjoy my job and being able to support the local economy with fresh seafood, I would love to continue this in the future, and hope we take the right actions to keep our waterways clean.

Thank you for your time,
Mandy Uticone
Carolina Beach Oyster Co.

Comments for the Coastal Habitat Protection Plan 2021

From: Cynthia M. Holda

October 19, 2021

My Comments:

To: Coastal Habitat Protection Plan 2021
Amendment Comments
P.O. Box 769
Morehead City, NC 28557

As a native North Carolinian, and having spent a career in various locations through-out the country with the National Park Service, upon retiring and returning to my home state, it became acutely apparent to me how precious and vitally important our coastal natural resources are, NOT ONLY to North Carolina, but to our nation as a whole, for a variety of reasons. For a healthy, thriving, booming economy in the Great North State and for the very quality of our lives, protection of and ensuring that our coastal waters and the good health of the ecosystems, where we live, work and play, are critical to our citizens and to our healthy nation.

My father (Mann) worked as a commercial fisherman in his early days to supplement his income and feed his growing family. My maternal grandfather (Perry), uncle (Perry) and other relatives owned and operated charter boats, guided for duck hunters in the early days, served as US Coast Guardsmen (Harris). My parents also owned and operated many businesses associated with the growing tourist industry in Dare County from the 1940s to early 1990s. My families' lives have been tied to the healthy ecosystems of the state of North Carolina for five generations. Fishing was critical to every aspect of this way of life and an important daily topic at the dinner table.

After retiring in 2015, and to educate myself further, I joined an organization, the North Carolina Coastal Federation, whose primary mission is to help ensure that we leave healthy coastlines for generations to come. I have learned a great deal about the complexity of my

beautiful homeland marshes, shorelines and the bodies of water surrounding these dynamic barrier islands that form a protective buffer to the mainland for over 300 miles along the North Carolina coast and provide habitat for healthy fish and shellfish species that begin their lives in these waters.

For brevity sake, I will list (with brief summary) the comments and points I would like to make in your CHHP plan but first and foremost I would like to say “Thank You” for the opportunity to comment. In the future, please make this “standard procedure” that the taxpaying permanent residents and “native sons and daughters” of this wonderful state are given the opportunity to read and educate ourselves as to how state managers plan a strategy to manage our state resources. Please allow our voices and opinions to be heard through a public comment process when making decisions on how the natural resources of this state are managed within the confines of the most current and “peer-reviewed science available.”

Additional Comments:

- 1) North Carolina Watersheds, where so many rivers drain from the mountains, the coastal plains and join the Atlantic Ocean waters in our coastal regions, do NOT recognize state boundaries. Does the CHPP address multiple state impacts to the watersheds that drain into the Atlantic Ocean? Or from one state’s watershed to another? Is there a designated committee to work across state lines with Virginia and South Carolina to ensure the watersheds of North Carolina are not adversely impacted by pollution from neighboring states? And that we North Carolinians are ensuring that **OUR** watersheds are not adversely impacting **THEIR** watersheds?
- 2) State managers would be wise to fund regional conservation partnerships programs and efforts to collaborate on successful completion of watershed projects such as the Lake Mattamuskeet Watershed Restoration Plan. Fund and develop strategies to tackle plans to resolve issues for coastal environments, to ensure healthy habitats for the fish populations, shellfish, crustaceans and aquatic mammals that live in those habitats and that **WE** feed upon, commercially harvest and sell for the benefit of the Great North State’s economy. The good work of the Lake Mattamuskeet Watershed Restoration Plan could be a role model for a variety of other planning issues in our coastal towns and communities to ensure success.
- 3) North Carolina State agencies of all divisions would be strengthened if they work alongside the public through public-private partnerships similar to the Oyster Steering Committee to move forward water quality goals and bring the perspectives and support of many different viewpoints and coastal communities. The Governor’s Beautification Highway efforts are another example. Citizens have a vested interest in keeping our state healthy and clean. Indeed, tourism and coastal fishing harvests **DEPEND** on it for a living.
- 4) Continue and adequately fund the NC Marine Debris Action Plan for removal of unsightly and pollution abandoned vessels, fishing gear, hurricane debris and waste. With human population increases, both resident North Carolinians and the influx of people moving to North Carolina, this ever- increasing and unsightly, dangerous form of waste and trash spoils the health of the coastal shorelines as well as the viewshed for residents and visitors alike. This overload of debris, trash, plastics, is not only unsightly but pollutes our waters with slowly leaking gasoline, oil and engine grease and untold forms of chemicals for decades. The “flushing” of coastal regions from hurricanes and high, lunar tides may be a healthy way to keep the coastal habitats thriving but the leaching of chemicals for household waste and construction debris in the aftermath of hurricanes needs to be addressed in some plan to prevent further contamination of our coastal waters for future generations.
- 5) Sponsor and fund education platforms for the citizens of this State so we can become a model State for the Nation when it comes to **PREVENTING** some of these

negatives impacts of human disturbance and usage. Conservation and recycling can be accomplished, useful, and even profitable with education and entrepreneur forward thinking.

6) Support and partner (cost-share) with organizations that are building living shorelines along our coastal communities for two all-important reasons: erosion control and to improve eco-friendly wetland habitat for sealife and oysters. Support funding and education for marine contractors and realty agencies who have a vested interest in a healthy coastline.

7) Support efforts to continue the Oyster Blueprint program (2012-2025) to continue to make NC Coastal areas a productive and pristine model for the world. Clean up of watersheds draining into our coastal waters and clean-up of abandoned debris/household debris from hurricanes/industrial pollutants from companies “upstream,” unhealthy and excess waste and fertilizers from commercial farming and hog and poultry production “upstream”.....all need to be closely monitored and regulated NOW to ensure the waste/excess does not flow downstream to pollute our coastal waters if we are ever to be successful in launching a world reknown Oyster Blueprint. Algae blooms are increasingly becoming a problem with warming climate change issues. We need to get a handle on these pollutants NOW to stop them from flowing into our environments.

8) October 11-15th is NC Oyster Trail week. Our coastal economies are seeing the benefits of promoting the tourism industry to enjoy and expand the trail. There are education opportunities associated with this endeavor for our visitors as well as the promotion of recycling oyster shells to rebuild more oyster sills and beds in the North Carolina oyster sanctuaries.

9) Support the COAST Anti-drilling Act. Drilling for oil offshore of our coastlines HAS ALWAYS HAD INHERIT DANGERS OF OIL SPILLS THAT FOUL OUR SHORELINES AND RUIN OUR ECONOMIES. JUST SAY NO TO OFFSHORE DRILLING.

To: NC Department of Environmental Quality
Re: Comments in regards to the Coastal Habitat Protection Plan
Date: October 18, 2020

As the former mayor of the Town of Wrightsville Beach and as a resident of the town for over 40 years I have first-hand knowledge of the importance of protecting our coastal environment. I have read the draft CHPP and it does an excellent job of identifying coastal issues and offering solutions for improvement, thus I am totally supportive of the CHPP.

There is no doubt that our state's coastal waters are in decline. The CHPP offers, on paper, a "long-term strategy to improve coastal fisheries through habitat protection and enhancement efforts." It provides concrete strategies to protect and improve our coastal environment. Yet, as great as the plan is on paper, the plan will only be successful if it is properly implemented. I have two suggestions that will I feel will increase the likelihood of the plan's success.

First, it is crucial that our state legislators provide the needed funding to ensure environmental compliance. Without appropriate funding for enforcement the plan will like so many other plans, result in minimal progress, sitting on the shelf collecting dust.

Second, it is critical that a variety of stakeholders are involved, creating a public-private partnership in order to ensure the plan's success. With robust funding and public buy-in the plan will be able to meet its goals of coastal habitat protection and enhancement.

Thanks for your consideration and I greatly appreciate the opportunity to comment on the CHPP,

David Cignotti

Mr. Jimmy Johnson
North Carolina Department of Environmental Quality
217 W Jones St
Raleigh, NC 27603

Dear Jimmy Johnson,

I am a pastor and community leader in New Bern, NC. In the last decade, my community has seen impacts of climate-driven extreme weather. As a faith leader, I see firsthand the effects that climate disasters have on the physical, mental, and spiritual health of my community. With the 2021 Coastal Habitat Protection Plan, the Department of Environmental Quality and Coastal Resources Commission has the opportunity to make recommendations that will bring life, health, and wellbeing to God's people and God's planet.

For me, coastal resilience, restoration, and protection is a racial justice issue. As the pastor of a predominantly Black community, I see how disasters affect us first and hardest, and how we are often the last to receive the resources and support to recover. The CHPP's recommendation to establish stronger public-private partnerships is key to addressing the racial discrepancies of coastal resilience. By bringing folks from my community to a shared table, we can work collaboratively with local and state agencies to develop resilience strategies that are just, equitable, and sustainable.

The very fact that God chose to create this beautiful coastal creation means that the people and creatures that live there are important to God, and they should be important to us. If we don't take action to protect this creation, it could vanish before our eyes. That's why the CHPP recommendations on protecting and restoring natural habitats are indispensable. These recommendations would increase climate resilience through the restoration and protection of wetlands and living shorelines, yielding benefits for God's people and God's creation.

Sincerely,

Rev. Tangye Middleton
Pastor, You Matter 2 God Church
New Bern, NC

Healthy fisheries need healthy habitats

We know we need clean water to survive, but it's just as important for our coastal fish habitats to have clean water for their productivity and health as well. These habitats not only need clean water, but they need water characteristics that they are adapted to, like proper light clarity and the proper mix of fresh and salt waters.

North Carolina's water quality is declining

Unfortunately, North Carolina's water quality is in decline, and it's impacting our habitats. [Algae blooms are increasing](#). Some types of seagrasses, known as submerged aquatic vegetation, [are in decline](#). Fish kills were [recently reported in Pamlico Sound](#). Shellfish closures are increasing in our estuaries. Learn more about the issues facing our estuaries how the CHPP addresses them [here](#) **Healthy fisheries need healthy habitats**

We know we need clean water to survive, but it's just as important for our coastal fish habitats to have clean water for their productivity and health as well. These habitats not only need clean water, but they need water characteristics that they are adapted to, like proper light clarity and the proper mix of fresh and salt waters.

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Connie Raper

Restoration Systems, LLC
1101 Haynes St. Suite 211
Raleigh, North Carolina
Ph: (919) 755-9490
Fx: (919) 755-9492



Dear Jimmy Johnson,

I am writing to convey the support of Restoration Systems for the 2021 Coastal Habitat Protection Plan update and stakeholder workgroup appendix. Restoration Systems leads the environmental restoration and mitigation banking in the region and has more than 90 mitigation banks and restoration sites in nine states. As an organization committed to projects that promote ecosystem restoration, we are supportive of state efforts to mitigate the impacts of development on ecologically sensitive areas. We also recognize the benefits of an adaptive, multi-disciplinary approach to habitat protection/restoration.

I participated in the stakeholder workgroup convened by the Pew Charitable Trusts and the North Carolina Coastal Federation in the summer of 2021. The workgroup was a successful example of how to engage and work with a diverse set of stakeholders, many of whom have different goals and perspectives, but who share the same desire to live, work and play in a healthy coastal environment. The recommendations of the work group will increase the opportunities for people from a variety of backgrounds to support the goals of the CHPP in a timely and coordinated manner.

As a participant on the workgroup, I support the stakeholder recommendations and urge DEQ to adopt these recommendations in addition to the CHPP recommendations. The formation of a public-private partnership with oversight of the stakeholder recommendations will add significant momentum to the CHPP recommendations, and as they say, it takes a village.

To that end, we appreciate the work you all do, the natural resources our state provides, and the opportunity to comment. We look forward to contributing to the protection of our coastal resources.

Sincerely,

Barrett Jenkins
Restoration Systems, LLC

I along with a lot of other recreational fisherman noticed the continually poor fishing and species diversity. I have been fishing in bardens inlet and had trawlers steer so close to me, I had to reel in my line to avoid losing them. They are rude and discourteous. I see the slicks of dead fish behind their boats. After they go through an area, you can't even catch a shark using a bloody menhaden. They have destroyed the inshore fishing in NC, and ultimately will cut their own throats. I sold my boat last year because it's no longer worth it. There are no fish to catch. NC had got to do something because what you are doing now isn't working.

Rob Hebert

This state has been Third World when it comes to managing and protecting our coastal fisheries and the habitat essential to fishery viability. In my 74 years of living in Carteret County I have seen a decline in virtually all species of fin fish and shellfish. It's way past time to get these trawlers and shellfish dredges out of our inshore waters. I hate to see the federal government get involved in anything but if the state continues to shirk it's responsibilities, maybe the feds should intervene.

Mick Brown

nutrient sources and control can not be monitored by once a month sampling in the chowan river basin with sample locations in the middle of the river. Sampling locations need to be located on the source feeder streams and sampling needs to be on a frequent basis. Both point and non point sources of nutrients need to be determined so they can be mitigated. These nutrients are creating a breeding ground for cyanobacteria blooms and the toxins created by such organisms. These toxins can work their way up the food chain.

Stephen Karl

I support the positive ideas in the 2021 CHPP Amendment. In addition, I support following the advice of the stakeholder workgroup on establishing a private/public partnership to increase stakeholder involvement in CHPP development, implementation, funding and decision-maker support.

Joanne McGrath

get the commercial fishermen out of our sounds

j.lyndon

Please adapt to the CHPP techniques they encompass the correct practice and procedures. This is important, thank you for listening and complying. Regards, Catherine Whitney

- 1) Why is gill netting still allowed in this state's estuaries?
- 2) Is any agency watching our inshore waters at night to gather real statistical data on unreported catches and illegal fishing activity.

We talk about protecting and improving these habitats, but are allowing uncontrolled destruction of the fish that need them to survive and reproduce.

I reside near a creek that is part of the New Topsail Creek system in Hampstead. The creek/marsh wraps around a portion of my community of Olde Point. This year, I observed unattended gill nets in the channels, and as recently as this month (October '21), have seen late-night gigging from boats in the same waters.

What good does it do to protect and improve fish habitats, while the species that need them are being overfished, or killed as bycatch?

Ken Rice
Hampstead, NC

Dear Jimmy Johnson,

My name is Sara Sutherland and I am an environmental economist at Duke University. I recently co-authored a report for the Albemarle-Pamlico National Estuary Program to evaluate the economic impact of submerged aquatic vegetation (SAV) to the state of North Carolina, and wish to submit a public comment in support of the Coastal Habitat Protection Plan's recommendations to protect and restore submerged aquatic vegetation.

Our research indicated that SAV has a significant economic impact on coastal communities through a number of avenues. SAV is a critical reproductive and nursery habitat for important recreational and commercial fisheries, including blue crab, red drum and spotted sea trout. The loss of SAV to these habitats would result in less abundance of these fisheries, resulting in decreased landings for commercial fisheries and a potential loss of revenue from recreational fisheries as recreational anglers seek better opportunities elsewhere. Total losses from the recreational fisheries for red drum and spotted sea trout over the next decade range from \$0.4 to \$3.3 million across the alternative SAV loss scenarios, while losses to the blue crab fishery range from \$0.7 to \$6.7 million.

We also found that SAV loss has an economic impact on local governments through declining property values. Our research suggests that local governments stand to lose from decreased property tax revenues, and a decline in ecosystem service provided by SAV including improved water quality and erosion control. SAV enhances property values through ecosystem services like improved water quality, increased fish and waterfowl populations, and reduced coastal erosion. We estimate coastal properties could lose \$2 to \$23 million in value over the next decade depending on the SAV loss scenario. Lower property values translates to lower property tax revenues for local governments. We conservatively estimate a decline in property tax revenues ranging from \$0.5 million to \$5 million over the next decade under different SAV loss scenarios.

SAV provides its most significant value in ecosystem services by mitigating the damages due climate change through carbon storage and sequestration. Carbon sequestration is the process of capturing and storing carbon from the atmosphere. This is particularly valuable because carbon dioxide is one of the main drivers of climate change, and SAV provides a natural vessel to sequester and store this carbon. Our recent study estimates the value of carbon stored by SAV to range from \$163 and \$419 million. We estimate reductions in SAV coverage between 5% and 50% over the next decade will result in lost carbon sequestration value ranging from \$5.5 to \$55 million over a ten year time period.

Overall, we conservatively estimated the value of SAV and found that a 0.5 percent annual decline in SAV acreage over the next decade will generate total economic losses of \$8.6 million in 2019 dollars. If SAV acreage loss were to accelerate to 5 percent per year, they estimate total economic losses of \$88.7 million.

As an environmental economist and researcher, I support the state's efforts to protect and restore SAV through water quality provisions.

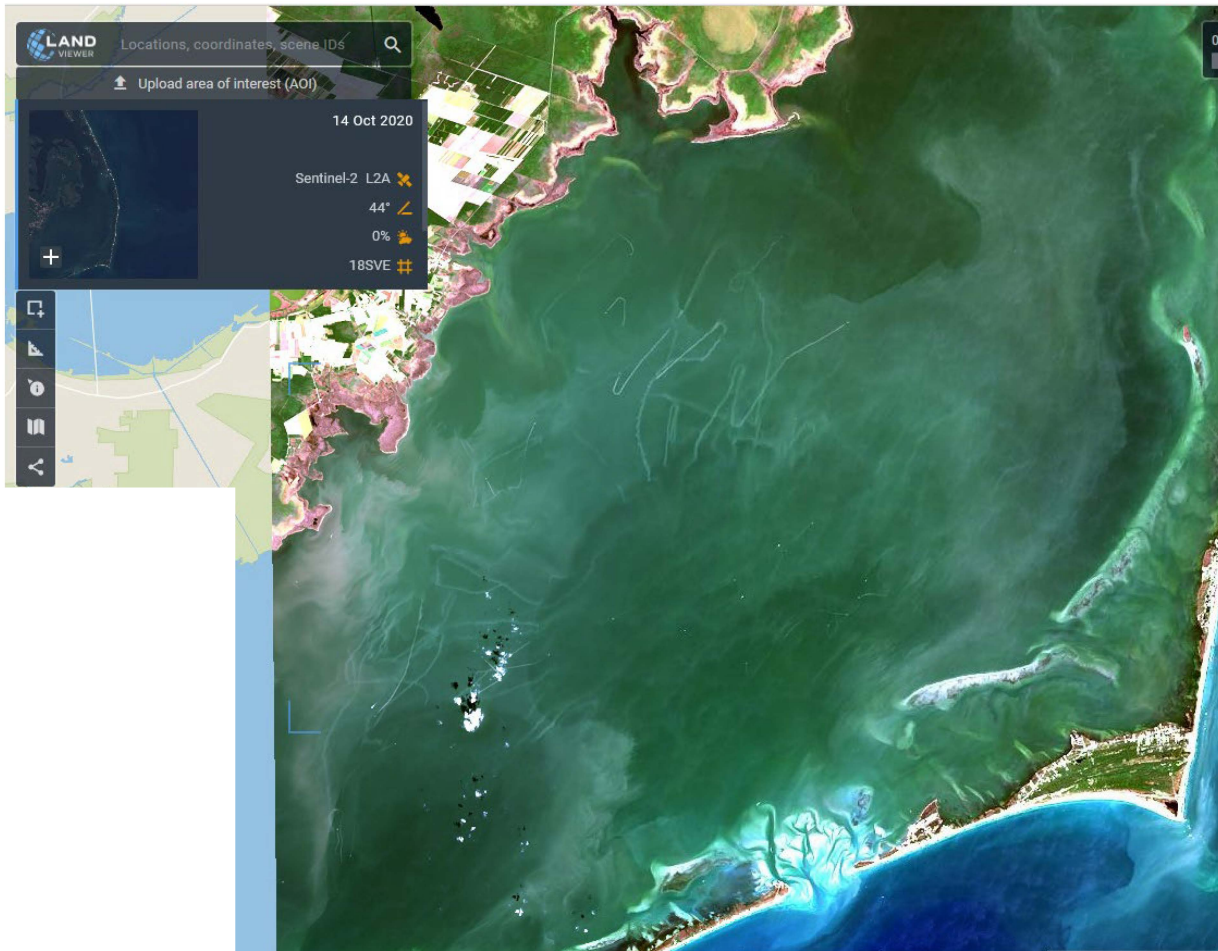
Sincerely,

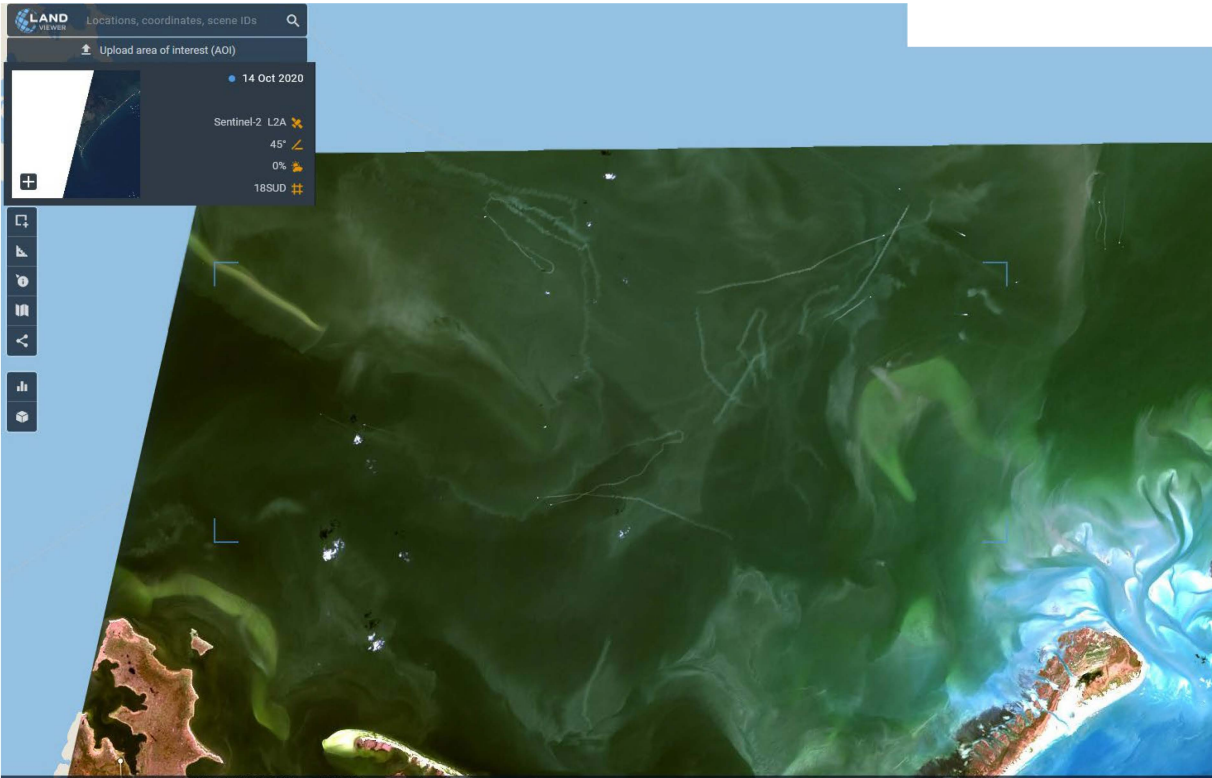
A handwritten signature in black ink, appearing to read 'Sara Sutherland', written in a cursive style.

Sara Sutherland, Ph.D.

Please include my following comments, with images, as official public comment on the Draft CHPP 2021 Amendment.

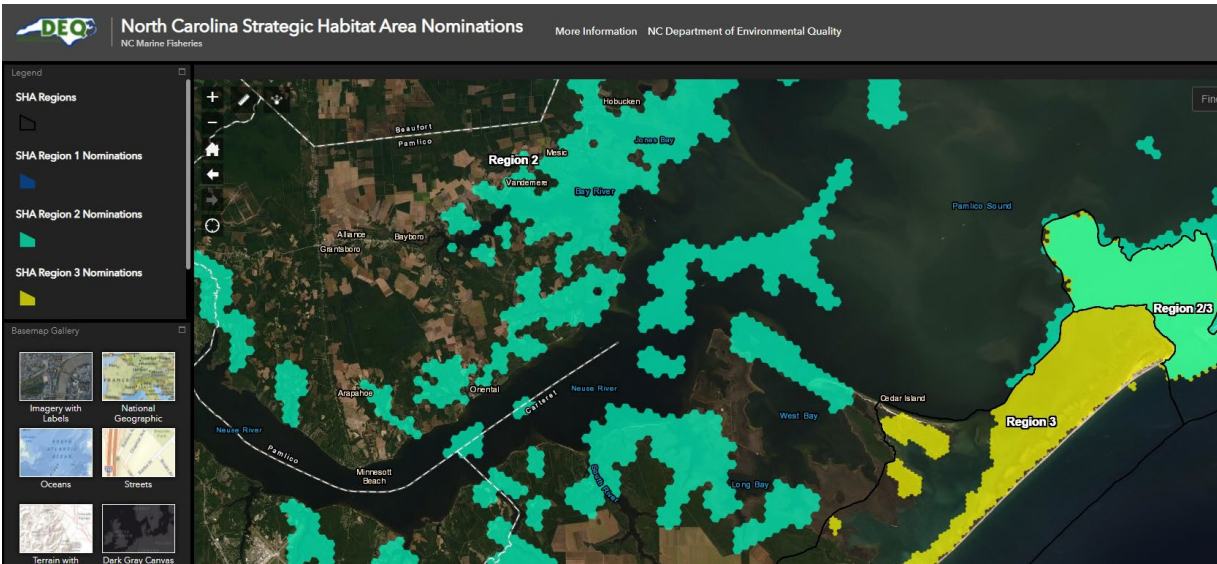
During the Tuesday, August 3rd, WebEx CHPP Steering Committee Meeting that I joined, I was disappointed that I never once heard the issue of highly destructive bottom disturbing fishing gears mentioned during the three-hour discussion. Shrimp and crab trawling, oyster dredging, clam kicking and hydraulic dredging are certainly issues that the CHPP Steering Committee should be bringing to the table in good-faith for honest discussions. The satellite images below from Oct 14, 2020 clearly show how extensive otter trawling in the Pamlico Sound is re-suspending sediment well in excess of the Secchi disk water clarity standard proposed during the August 3rd steering Committee meeting.



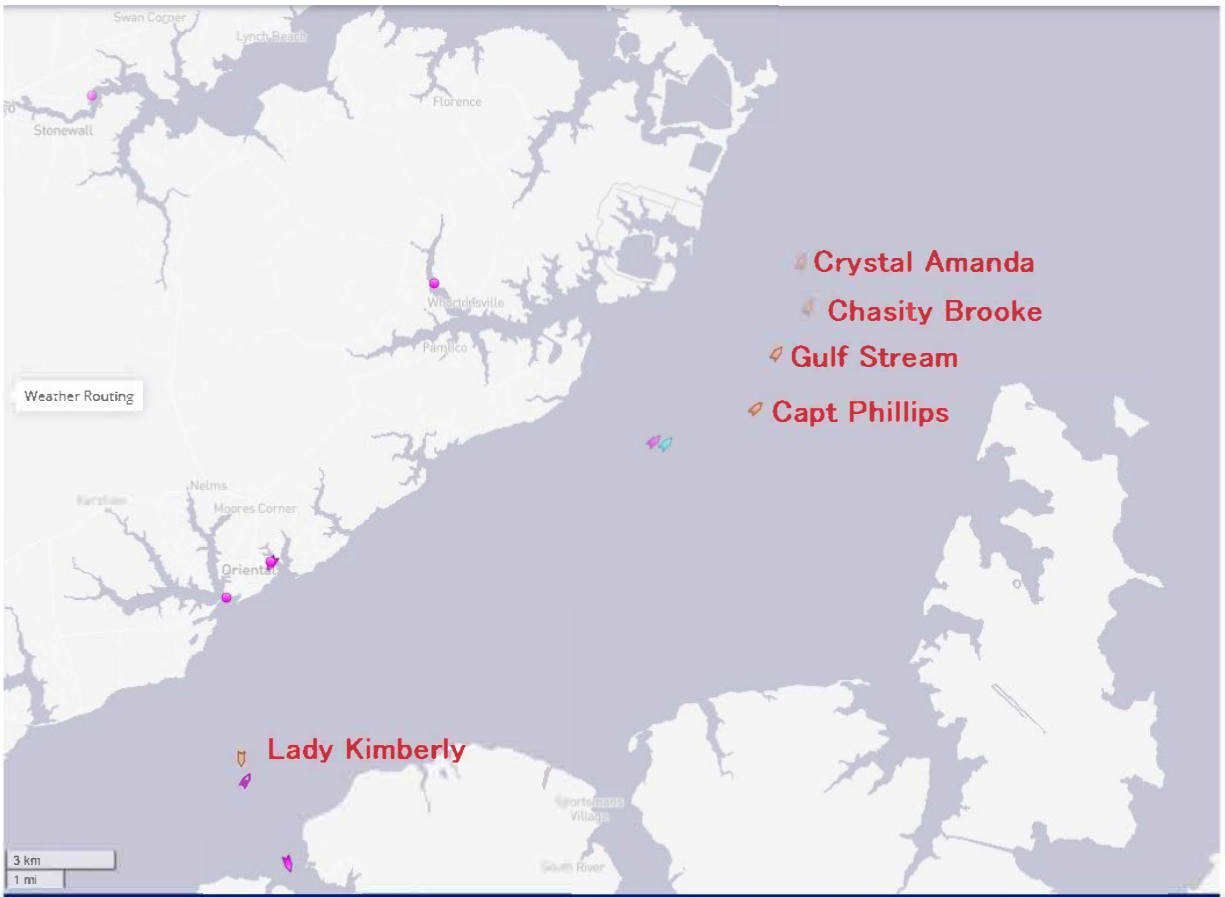


Neuse River SHAs

Below are the last CHPP nominations for Region 2. To my knowledge, none of significance were approved. Please note the nominations in the area of Adams Creek.



Excessive rain fell in Eastern North Carolina in August which will move shrimp in search of higher salinity waters. On August 5th, using AIS tracking, I watched four large industrial trawlers move from the Pamlico Sound to the Neuse River in the heart of the areas nominated for SHA protection. There was a fifth trawler, the Lady Kimberly, that had been locked on a trawl pattern at the mouth of Adams Creek, and in the creek, for three weeks.





These are large industrial ocean-going vessels capable of pulling 220-feet of headrope, four-barrel rigs, pulling very large otter doors.



Licensee Name	
R.A.C.Seafood LLC 8260 Turner Rd Henrico, VA 23231	
Ship Data	
License Type	Regular
Official Ship #	681868
Ship Name	Crystal Amanda
Gross Tonnage	99 tons
Length	24 meters



This effort is unsustainable from habitat and bycatch perspectives. CHPPs have purposefully failed to identify and delineate SHAs in the Pamlico Sound, and adjacent rivers and creeks, that serve as secondary nursery areas for many economically important finfish and forage species under 15A NCAC 03N.0101.

And, it is not just finfish. Blue crabs are both overfished with overfishing occurring. In Kevin Brown's 2009 shrimp trawl bycatch characterization study of the Pamlico Sound, blue crab was the sixth most often landed species, by weight, behind Atlantic croaker, spot, weakfish, mantis shrimp and Atlantic brief squid. Yet, in the 2018 Blue Crab stock assessment, the division failed to address the impact of shrimp trawl bycatch on the blue crab stock- deja vu our depleted weakfish stock.

From page 42 of the blue crab stock assessment-

This assessment did not include discards due to a lack of data. However, discards of blue crabs in North Carolina waters could be a significant source of mortality, especially in the commercial gill net fishery. This assessment, without discards considered, could be overestimating population size. Thus, it is important to establish data collection programs for fishery discards to help improve future stock assessments.

It is well past time for the CHPP process to actively engage and address bottom disturbing gears and nursery area protection versus giving it lip-service in plan.

Sincerely,
Rick Sasser

Thank you for the opportunity to comment on the CHPP. First, I would like to commend all the staff and their collaborators for the work that went into finalizing this draft plan. I have had the opportunity to observe and interact with the CHPP process since its inception and this plan, by far, has more focus and directed attention to issues demanding necessary and immediate actions more than ever demonstrated in previous CHPP plans. The previous cycle for the CHPP was extremely disappointing and I am pleased to see the significant improvements.

I wish I had the time to provide you with a comprehensive set of comments on the entire document, but that wasn't possible in the time allotted for public comments which conflicted with a busy schedule during the past month. I am encouraged to see that within the SAV Chapter and other narrative content related to SAV considerable evidence of my own contributions, in some cases, verbatim. I am, however, disappointed that my own engagement was very limited during the revision process. Soon, I do plan on providing you with a wider scope of comments on the entire document which you can consider as you see fit to adapt the plan. In the meantime, I am going to provide you with some detailed comments on the subject I am most familiar with, Submerged Aquatic Vegetation, Chapter 4. I also included a marked up copy of the draft PDF with some additional comments for your consideration.

I applaud the CHPP for the effort to address climate change and resiliency in Chapter 3. However, I strongly urge NCDEQ to consider more attention to the link between rising sea level, salt marsh stability and seagrasses regarding sediment storage and barrier island stability. The coupling of seagrasses and marshes and how sediments in our coastal waterbodies are distributed and stored is a critical element in back-barrier island dynamics and likely to be a major factor in affecting long-term resilience of our developed and undeveloped barrier islands in the face of sea level rise and increased storminess. Which, in turn, will have considerable relevance for understanding the future bio-physical conditions in our estuaries and the fish and wildlife that depend on them.

I agree that you can distinguish SAV habitat types into two salinity zones and it is very useful as a tool to spatially articulate our SAV communities for monitoring and assessment purposes. However, I would also submit that it is important to also distinguish the potential complexity and importance of the transition zones between high and low salinity. These can be very dynamic, intra- and interannually, and are very likely to become more important SAV zones in a future scenario of climate change. We are seeing this first-hand in the dynamics of the Chesapeake Bay SAV communities where once stable *Zostera marina* communities stressed by a combination high water temperatures and marginal water quality are being substituted with more ephemeral *Ruppia maritima* communities which may not provide the same scope and level of ecological services and resilience. I strongly recommend that you incorporate more thought and attention to higher frequency and greater spatial intensity of salinity monitoring in our coastal ecosystems and link these data to in-water monitoring of SAV distribution and abundance. High resolution monitoring and modelling of salinity should be a priority component of any plan that seeks to better understand how resilient SAV communities are now and what they could be in the future.

I have vigorously campaigned for decades that we should be managing potential SAV habitat and not just the habitat we identify in a snapshot. Tier 1 level maps of presence and absence of SAV habitat serve as useful tools for articulating the space where SAV occur at one point in time, but we also know from experience that this space fluctuates and moves around at intra-, interannual, and decadal scales. So, I am very pleased to see that the CHPP has adopted this concept in their delineation of known SAV

historic extent. Table 4.5 and the associated map figures codify a commitment on the part of NCDEQ to use this information to better understand the status of SAV in NC and to establish goals for conservation and restoration. I do think that the authors of this document need to define more clearly what they mean by “interim goal” as stated on page A-90. Is this goal temporary? Does this goal exceed reasonable expectations? What are the conditions with respect to whether this goal is met or not? Is there a performance standard related to time? Frankly, I don’t understand what an interim goal is.

The resilience discussion with respect to SAV on page A-83 is incomplete because it doesn’t incorporate the tropical species, Halodule, and how it may respond as a resilience factor in lieu of climate change. Halodule could very well replace Zostera in a warming scenario. The discussion in this paragraph is oversimplified and to some extent could be misleading.

The SAV research and monitoring discussion on page A-91 seems to ignore a plan already developed and approved by APNEP. Why not cite the existing collaboration?

I agree that the process by which the Chesapeake and Tampa Bay programs went about to address their SAV declines serve as good process models for NC to consider in developing a program approach. However, I would strongly recommend that DEQ take a closer critical look at the current conditions of SAV in both these waterbodies before declaring a direct relationship between process and desired outcomes. Are the most current SAV conditions in both waterbody case studies an acceptable outcome? I suggest you take a deeper dive into the current conditions in the Chesapeake and Tampa Bay.

For example, I draw your attention to some recent media reports.

Seagrass beds in Chesapeake Bay, a vital habitat for blue crabs and other species, declined by 38 percent in 2019, a trend researchers link to higher than usual river flows that year.

The federally funded Chesapeake Bay Program released findings from its annual survey July 8, reporting a mixed bag of results from across the bay region and its rivers. The overall 38 percent estimated decline is down from a 108,078-acre tally in 2018. Seagrass In Tampa Bay Declined 13 Percent In Recent Years

WUSF Public Media - WUSF 89.7 | By Cathy Carter

Published May 17, 2021 at 5:00 AM EDT

Tampa Bay Estuary Program

Between late 2019 and early 2020, Tampa Bay saw an estimated decline of 5,411 acres of seagrass, according to the Southwest Florida Water Management District.

Scientists say pollution from runoff and wastewater leaks adds nutrients to the bay, fueling algae growth that hurts seagrass beds.

Seagrasses provide shelter and food to a diverse community of animals, from small invertebrates to large fish, crabs, turtles, marine mammals and birds.

Provisional results released earlier this month by the Southwest Florida Water Management District (SWFWMD) show that Tampa Bay now harbors 35,240 acres of seagrass. That's a vast improvement from the 1990's when a plan was established to boost recovery of this vital part of the ecosystem.

But for the first time since 2012, the amount of seagrass in Tampa Bay fell short of the goal established decades ago.

WUSF's Cathy Carter spoke with Gary Raulerson, an ecologist with the Tampa Bay Estuary Program about the results of the latest seagrass survey.

The results are in from the latest seagrass survey and I understand Tampa Bay lost about 13% of its seagrass in the past few years.

That's correct, Cathy. Our partners at the Southwest Florida Water Management District do aerial reconnaissance of the seagrasses from Tampa Bay down to Charlotte Harbor every other year, and from the photo reconnaissance that they did late 2019 and early 2020, it did indicate that we experienced a significant loss of over 5,000 acres of sea grasses primarily in old Tampa Bay, which is that upper left fork of Tampa Bay proper.

You mentioned the years in which the survey was done but because of recent events, we should emphasize that this study was done before the emergency discharges from the Piney Point phosphate plant in Manatee County?

Yes, the aerial photography data that we have received was flown in late 2019, early 2020. It has no relationship with the recent releases from the Piney Point incident.

But would you say the Red Tide events of the past few years had an impact on seagrass?

We believe that's part of the issue, especially in the lower portions of the Bay. Red Tide did not get into say old Tampa Bay and in Hillsborough Bay quite significantly, but it definitely has an impact. Microscopic organisms can basically cloud the water and reduce the clarity that the seagrasses need to grow.

I draw your attention to these media reports because both examples have scientific documentation behind them in monitoring and assessment reports that you can read and review and are available on-line in both programs. They are very current. I would be extremely cautious drawing a direct line between a process to establish conservation and restoration goals and the existing outcomes. The outcomes appear to be a moving target which in both cases seem to be going in the wrong direction right now.

Related to this uncertainty regarding long-term outcomes, I agree that water quality targets should be an essential component of an SAV conservation and restoration plan and I applaud DEQ for incorporating this as a priority issue in the CHPP, as well as recognizing the need for enhanced and more comprehensive SAV and water quality monitoring programs needed to achieve the goals. However, I want to point out a need for reconsideration in setting the water quality goals as fixed targets; specifically, the two water clarity targets, 22% and 1.7 m for high salinity and 13% and 1.5 m for low salinity. Granted, these values are derived from several empirical studies using a range of observations, correspondence analysis, and experimental manipulations. However, there are also studies which demonstrate the SAV species in our system have a range of light requirements which can vary according to fluctuations in temperature and sediment composition. We also have species with complex life histories that also have different light requirements. I am concerned that these targets may constitute the "minimum requirements" for SAV under the past and perhaps, present conditions, and if the interim

goal is to expand (restore) SAV to historic extent or even something in between, then these targets may not be adequate. I would also submit that if we experience rising sea levels (deeper water column = less light) and storminess (increase turbidity + increased nutrient loads = more light attenuation) these fixed targets may not compensate for changing conditions. I recommend that you incorporate language in this section of the CHPP that recognizes a need to possibly adjust these targets as learned by future experience in the monitoring programs to ensure progress toward the interim SAV restoration and conservation goals. The targets need to be flexible (adaptive) and in favor of protecting the resource should conditions change in the future.

Preliminary information generated by the bio-optical model indicates that turbidity is a primary driver in light attenuation in high salinity SAV habitat, suggesting that we need to pay close attention to this water quality variable and recognize that there is very little allowance for chlorophyll to increase; therefore, management programs that reduce nutrient inputs into high salinity or salinity transition zones need to be prioritized. I recommend that the CHPP give this more detailed attention.

I endorse most of the recommended Actions in Chapter 4; however, I don't understand recommendation 4.5 under Mapping and Monitoring. This is already implemented under the umbrella of an approved APNEP plan. Why not specify enhancement of the existing program through more collaborative staffing and funding, rather than claim to be developing and implementing a full-scale program that already exists for a large portion of the high salinity SAV resource. This is what is really needed. I also see a significant need on the part of DEQ to become more involved and invested in the low salinity SAV monitoring and assessment program to supplement APNEP's ongoing activities. While I recognize that APNEP is housed in DEQ, it is my experience that there could be a much clearer understanding of APEPs leading role in the SAV monitoring and assessment program. APNEP, mostly working with volunteer experts, has demonstrated their capabilities and it is now time for DEQ to enhance these capabilities through commitments to funding and dedicated, competent staff and infrastructure support.

It would be helpful to all parties interested in recommendations related to Potential Rulemaking for water quality standards (4.7, 4.8) if the CHPP could explain how this process would be initiated and executed. Recommendations 4.7 and 4.8 are very important and quite ambitious and I am very encouraged by them but given where we are with the NCDP SAC process, it seems a bit premature. I can only hope that this plan and these recommendations accelerate a process that has stagnated for several months; 2022 is right around the corner.

J Kenworthy