

Potential Engagement and Stewardship Action Team Projects

Action D1.1: Communicate the importance of stewardship and offer opportunities for volunteerism to further APNEP's mission. Advocating environmental stewardship and providing citizens with meaningful volunteer options improves the environment while educating the public about the Albemarle-Pamlico estuarine system.

Key Partners: NC-DENR, NC-OEEPA, VA-OEE, VA-DCR, VA-DEQ, NCCF, TNC, EPA, NOAA, PFS, IMS, CSI, VIMS, NC-NERR, NC-AQ, VA-AQ

CCMP Outcomes Supported: 1a, 1b, 1d, 1e, 2a

Output: Workshops and engagement materials on stewardship and volunteer opportunities

Results: Increase in voluntary citizen action to protect and restore the Albemarle-Pamlico estuarine system

- Current related APNEP sponsored projects:
 - NCCF Coastal Discovery Camps
- Partner projects for consideration:
 - Seeds to Shoreline (NC Sea Grant & NC Coastal Reserve/NERR)?
 - Displays at new state park facilities (Eno River / Pettigrew) / Stormwater education/etc. ?
 - Watershed Stewardship Network initiatives: grant writing workshops for local watershed groups
- Recent sponsored projects:
 - Sea Wolf at CMAST Communication Project
 - Seeds of Inspiration Family Literacy Project (Mano al Hermano & NCCF)
 - NC Aquarium-Roanoke Island We are Nature Heroes Library Program
 - Science of the NC Coast (NCCF)
 - Effects of Environment on Blue Crab Size (Duke)
 - NC Catch Placemats
- Ideas:
 - Create list of offerings in APNEP region: summarize educational opportunities from regional partners [based on feedback from DPI meeting / hard to get the word out/make teachers/educators aware of resources, field trips, workshops, etc.].
 - Possible outputs: Brochures / engagement materials / workshops / online portal on APNEP website
 - Bertie County proposed Environmental Education & Recreation facility (also meets Action D2.1)
 - Albemarle-Chowan watershed Roundtable
 - Possible outputs: Brochures / Guide to region / TBD [May 18 meeting]
 - Create summary of citizen science initiatives in the region [also meets Action E1.3] /Support local efforts
 - Possible outputs: Brochures / engagement materials / workshops / online portal on APNEP website

Citizen's Monitoring Networks

- Sentinels of the Sounds (NCSU / Marcelo Ardon)
- CoCoRaHS
- KingTides
- Hydrilla / Chowan (NCSG/Chowan Edentoon Environmental Group)
- Blue crab parasites {Coley contacted by researcher?? Needs place to host information}

Action D2.1: Provide and promote opportunities for outdoor experiences that connect individuals with the Albemarle-Pamlico ecosystem. A meaningful and educational outdoor experience can change the lens through which a person views the natural world. A person who is connected to the estuarine system is more likely to take the steps necessary to ensure that it thrives. APNEP will continue to work with its partners to provide and promote opportunities for meaningful outdoor experiences.

Key Partners: APNEP, [NC-DPR](#), [VA-DCR](#), [NC-NERR](#), [NC-WRC](#), [Pfs](#), [VA-OEE](#), [NC-OEEPA](#), [USFWS](#), [NPS](#), [NCCF](#), [NC-DOC](#), [VA-DOC](#), [NC-MNS](#), [NC-DACS](#), [NC-AQ](#), [VA-AQ](#)

CCMP Outcome Supported: 2a

Outputs: Activities for the public to become engaged in experiencing the Albemarle-Pamlico ecosystem

Results: Increased awareness and engagement in implementation of the CCMP

- Current sponsored projects:
 - Museum / Shad in the Classroom [also D2.2]
 - Sound Rivers Kids River Fest
- Partner projects for consideration:
 - State Parks: Youth Based Kayak Camps / Canoemobile / Wilderness Inquiry trips
- Recent sponsored projects:
 - Secrets of the Swamp and River Days [also D2.2]
- Other ideas:
 - Create list of offerings in APNEP region: share outdoor opportunities from regional partners
 - Bertie County EE facility / opportunities for regional collaboration with educational partners in area (Museum, USFWS Refuges, Estuarium)?

Action D2.2: Provide environmental education training opportunities for educators in the region. By teaching educators about the Albemarle-Pamlico region and its associated environmental issues and providing them with science-based resources, APNEP and its partners enrich the education of thousands of students annually.

Key Partners: [NC-NERR](#), [Pfs](#), [NCCF](#), [NC-DPR](#), [Sea Grant](#), [NC-MNS](#), [NC-OEEPA](#), [VA-OEE](#), [VIMS](#), [CSI](#), [UNC](#), [NC-AQ](#), [VA-AQ](#)

CCMP Outcome Supported: 1c, 1e, 2a, 2b, 2c, 3b

Outputs: Workshops and materials for educators

Results: Increased awareness and engagement in implementation of the CCMP

- Current sponsored projects:
 - UNC ExPLORE NC (Annual Teacher Institute)
- Partner projects for consideration:
 - Seeds to Shoreline
 - SciRen Support? [APNEP regularly participates and has provided lesson plans]
- Recent sponsored projects:
 - Project WET Facilitator Workshop/Project WET
- River Basin Booklets (NC and VA through Albemarle-Chowan Watershed Roundtable)

Action D2.3: Increase public understanding of the relationship between ecosystem health and human health advisories relating to water, fish, and game. Few citizens fully understand the relationships between human activity and health advisories. APNEP will work to help people make these connections, allowing citizens to take concrete steps to address pollution sources.

- **Key Partners:** [Sea Grant](#), [USFWS](#), [NC-WRC](#), [EPA](#), [NC-DWR](#), [NC-DMF](#), [VA-VDH](#), [NC-DPH](#)
 - **CCMP Outcome Supported:** 1a, 1b, 1d
 - **Outputs:** Outreach and educational materials
 - **Results:** Improved water quality.
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- Current sponsored projects:
 - None
 - Partner projects for consideration:
 - Safe Water: Fish Smart / Eat Smart (UNC-IE, Sound Rivers) / Eat Fish Choose Wisely (UNC-IE)
 - Recent sponsored projects:
 - Joint APNEP /Sea-Grant Fellow Project: Gathering Perceptions of Contaminant Risk in Fish / Liz Brown Pickerin / ECU
 - Other ideas:
 - Connie children's health idea / citizen science well monitoring [funding available]
 - Include fish consumption advisories in the print copies of the NC salt water fishing regulations / post information & signs at boat ramps (Liz Brown Pickerin project recommendations)
 - Educational materials / information regarding algal blooms
 - Align with APNEP bridge funding for NC DMF Recreational Water Quality Monitoring program?
 - Assist Algal Response team w/signage for Chowan Blooms:
 - Pamlico Blooms: Sound Rivers

Secondary CCMP Engagement & Stewardship Actions

CCMP Component D: ENGAGE

Action D1.2: Facilitate efforts to improve collaborations to protect and restore ecosystem processes. Homeowners, farmers, foresters, and businesses control most land in the Albemarle-Pamlico region. The interest and action of private individuals, supported by government expertise and resources, is critical to protect and restore the estuarine ecosystem.

Key Partners: [NC-OCPCA](#), [CTNC](#), [NC-DENR](#), [VA-DCR](#), [VA-DEQ](#), [NCCF](#), [TNC](#), [NRCS](#), [USACE](#), [USGS](#), [SALCC](#)

CCMP Outcomes Supported: 1a, 1b, 1c, 1d, 1e, 2a, 2b, 2c, 3a, 3b, 3c, 3d

Outputs: Workshops and engagement materials on land conservation

Results: Increase in protected lands through easements, better management, or other methods

Potential Partnerships: Needs identified by Restoration Strategies Action Team; Sentinel Landscapes

Action D1.3: Coordinate outreach and engagement efforts regarding the impacts of invasive species. Effective outreach and engagement is an important part of any integrated invasive species management effort. There are many ways citizens can help limit the spread of invasive species and informed volunteers can report on the presence and spread of these organisms. {also B2.6: Invasive removal)

Key Partners: [Sea Grant](#), [Cooperative Extension](#), [NC-DWR](#), [NC-WRC](#), [NC-DACS](#), [VA-VDACS](#), [NC-NHP](#), [VA-NHP](#), [TNC](#), [VA-DGIF](#), [NC-NERR](#)

CCMP Outcome Supported: 2c

Outputs: Coordinated outreach and engagement programs

Results: Reduced introductions of and impacts from invasive species

Potential Partnerships: Needs identified by Invasives Action Team

Action D1.4: Coordinate outreach efforts regarding the proper application of fertilizers to reduce nutrient runoff. Perhaps no everyday action affects the estuarine system as does the application of fertilizer, which contributes to eutrophication if improperly applied. The choice of product, as well as the timing, volume, and area of application are important considerations for consumers. A coordinated outreach and engagement program will be an important part of nutrient management efforts. Best practices can help save money while preserving the region's waters.

Key Partners: [Sea Grant](#), [Cooperative Extension](#), [NC-DWR](#), [VA-DCR](#), [NC-DACS](#), [VA-DEQ](#), [NC-SWC](#), [VA-DSM](#)

CCMP Outcomes Supported: 2a, 2b, 3b

Outputs: Coordinated outreach and engagement programs

Results: Nutrient reductions in the waters of the Albemarle-Pamlico estuarine system

Potential Partnerships: Needs identified by Water Quality Improvements Team; Lake Mattamuskeet partnership (USFWS, others)

Action D1.5: Increase opportunities for public access to waterways, public lands, and trails. Greenways, parks, piers, and other projects can help protect water quality and provide opportunities for experiencing and learning about the environment. As people seek out these areas for relaxation and recreation, they also support an increasingly valuable ecotourism industry.

Key Partners: NC-WRC, USACE, NC-DCM, VA-DCR, NC-PRTE, VOF, CTNC, NC-DPR, NPS, USFWS, USFS, NC-CWMTE, VA-DGIF, PfS, NC-AQ, VA-AQ

CCMP Outcome Supported: 1e

Outputs: New opportunities for the public to become engaged in experiencing the Albemarle-Pamlico ecosystem

Results: Increased awareness and engagement in implementation of the CCMP

Potential Partnerships: Needs identified by Access Action Team, or this team as related to Engagement & Stewardship actions

Action D3.1: Develop and implement a strategy to improve decision-makers' understanding of the costs and benefits of environmental protection, restoration, planning, and monitoring. While the costs of environmental protection are easy to see on a balance sheet, the benefits can be harder to quantify. APNEP will work with its partners to provide science-based information to government officials regarding the value of ecosystem services and help them incorporate this information into the decision-making process.

Key Partners: NC-DCM, NC-DWR, IOG, COGs, PDCs, APA, Sea Grant, IOG, NC-NHP

CCMP Outcomes Supported: 1a, 1b, 1d, 2a, 2b, 3a, 3c, 3d

Outputs: Communication strategy and materials on ecosystem services

Results: Informed decisions for environmental management

- Output ideas: placemats for legislature? Fact sheets and brochures for policy makers
- Output ideas: Educational materials for regional planners / local government leaders / state and federal policy makers

Potential Partnerships: Needs identified by Policy & Economics Action Team; Watershed Stewardship Network Value of Water Campaign: (2018 or later)

Action D3.3: Provide assistance to state, regional, and local governments to incorporate climate change and sea level rise considerations into their planning processes. APNEP and its partners have made significant strides predicting and mapping future climate risks, but much work remains to be done. APNEP will support government partners that choose to integrate climate information into their planning process. Additionally, APNEP will work across sectors to identify and leverage mutually beneficial climate adaptation opportunities.

Key Partners: Sea Grant, NC-DCM, NC-OCPCA, NC-DMF, NC-DEM, EPA, SALCC, VA-CZM, USFWS, NC-WRC, NOAA, NC-NCDOT, NC-DHHS, IOG

CCMP Outcomes Supported: 1a, 1b, 1c, 1d, 1e, 2a, 2b, 2c, 3a, 3b, 3c, 3d

Outputs: State, regional, and local plans that address climate change and sea level rise

Results: Improved climate resiliency for human and natural communities in the region.

- Output ideas: Educational materials for regional planners / local government leaders (awareness of resources including CCMP and Economic Valuation report)

Potential Partnerships: Needs identified by Policy & Economics team or partner projects for consideration below:

- VCAPS Implementation Needs ?? (NC Sea Grant, Town of Nags Head, Regional Coastal Communities, VASG)
- SALT (NCSU community workshops) /and other groups (Todd VanBenDor of UNC, Duke)
- NOAA Sentinel Sites Cooperative
- Monica Gregory Project (NOAA Coastal Mgmt Fellow)
- Support Letters for NOAA Coastal Resilience grant (VIMS project, Currituck Alliance, NCCF)

Other CCMP Components: B: Protect, C: Restore, and E: Monitor

Action B2.2: Develop and implement a submerged aquatic vegetation (SAV) protection strategy. APNEP will work with its partners in protecting SAV habitats through mapping efforts, examination of permitting requirements, water quality and habitat issues, and education for boaters.

Key Partners: NOAA, USFWS, NC-DCM, NC-DMF, NC-WRC, VA-VMRC, VIMS, USACE, SALCC

CCMP Outcomes Supported: 2a, 2b

Outputs: Submerged aquatic vegetation (SAV) protection strategy

Results: Improved management of water quality and ecosystem biodiversity

Potential Partnerships: Needs identified by the Submerged Aquatic Vegetation Action Team

Action B3.2: Develop and distribute educational materials encouraging landowners to protect natural shorelines. APNEP will work with its partners to continue to develop materials will describe how living shorelines are a viable alternative to hardened structures and explain the benefits natural shorelines provide. *[also integrates with C1.3 (restoration of riparian and estuarine shorelines)]*

Key Partners: NC-NERR, Sea Grant, NCCF, VIMS, NC-DWR, NC-DMF, NC-SWC, USACE, NC-WRC

CCMP Outcomes Supported: 2b, 3d

Outputs: Educational materials

Results: Improved water quality and ecological integrity while reducing shoreline erosion.

Potential Partnerships: Needs identified by partners working on Living Shorelines, D1.1: encourage community involvement? / also integration with coastal resilience

- Sponsored in past Living Shorelines Workshop & Video (NCNERR)

Action E2.2: Develop and maintain an online resource that clearly conveys regional information in support of ecosystem-based management. In addition to creating a regional database, APNEP will work to make its contents easily and readily available for all who wish to use it.

Key Partners: [SALCC](#), [NC-WRC](#), [NC-OCPCA](#), [NOAA](#)

CCMP Outcomes Supported: 1a, 1b, 1c, 1d, 1e, 2a, 2b, 2c, 3a, 3b, 3c, 3d

Outputs: Data portal

Results: More informed decisions based on current shared data

Potential Partnerships: Needs identified by Decision Support Tools Team or any others related to synthesizing information in a central / neutral location