

NORTH CAROLINA'S COASTAL HABITAT PROTECTION PLAN

2012 - 2013

ANNUAL REPORT

TO THE

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AND THE

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NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES

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2012-2013 Annual Implementation Report

North Carolina's Coastal Habitat Protection Plan (CHPP) was adopted in 2004 by votes of North Carolina's Environmental Management Commission, Coastal Resources Commission, and Marine Fisheries Commission, as mandated by the Fisheries Reform Act of 1997. After the CHPP was formally adopted in December 2004, the commissions, their administrative divisions, and DENR also developed and adopted two-year implementation plans during calendar years 2005, 2007, 2009, and 2011. These implementation plans detail more than 100 specific steps the agencies involved would take to implement the CHPP recommendations during the identified fiscal years. The accomplishments of the CHPP have been reported annually since 2006 through a CHPP Annual Report. The purpose of this report is to highlight the major accomplishments associated with the CHPP over this past year.

2010 Revision

In 2009, the CHPP Team began reviewing and revising the original CHPP document, as required by the Fisheries Reform Act of 1997. The Act mandates the review of each management plan at least once every five years. With staff from the Division of Marine Fisheries as the lead writers, a revision of the CHPP was completed. Recommendations which were accomplished under the 2005 CHPP, or that were no longer significant, were removed. New scientific findings and studies, which occurred during the previous five years, have been included in the revised document. A number of new recommendations were included in the re-written plan. Also included in the 2010 CHPP are emerging issues affecting North Carolina's coastal habitats. These emerging issues include: pharmaceuticals and endocrine disruptors, climate change and sea-level rise, energy infrastructure (oil), invasive species, and alternative energy issues. The second iteration of the full plan, and updated recommendations contained in the plan, were approved by these same commissions, as well as the Wildlife Resources Commission, in 2010. The 2010 revised CHPP is currently being used by each agency to direct their coastal habitat initiatives. A timeline for the 2015 review, and possible revision, has been developed. However, the timeline will likely need to be revisited as a result of recent staffing changes within the Division of Marine Fisheries (DMF), the Division of Coastal Management (DCM), and the reorganized Division of Water Resources (DWR).

Implementation Progress

Overall, the 2005 CHPP and the 2010 revised CHPP have been largely successful in implementing plan recommendations. A large part of that success can be attributed to the fact that the implementation of the CHPP has opened up new avenues of communication among divisions, agencies, and commissions. The plan has also helped to break down many of the previous barriers to communication and to enable collaboration across the silos that had been prevalent prior to the implementation of the CHPP. To date, the overwhelming majority of accomplishments have been non-regulatory. Prior to making large programmatic changes, positions and funding were needed to assess compliance of existing environmental rules, complete mapping of fish habitats, and provide public education on environmental issues.

Over the past few years, several large grants were awarded to state agencies and universities to conduct research or projects in support of the CHPP. Recent examples of these grants include funding for the Division of Coastal Management (DCM) to develop a Beach and Inlet Management Plan (BIMP), conduct estuarine shoreline mapping, as well as funding for a project looking at shoreline stabilization which was awarded to DCM through the Cooperative Institute for Coastal and Estuarine Technology (CICEET). The Albemarle-Pamlico National Estuary Partnership (APNEP) was able to coordinate and

pool resources to map Submerged Aquatic Vegetation (SAV) coast-wide six years ago and has again led that effort this past year in the APNEP region utilizing Department Of Transportation aircraft and cameras for the photographic work. Universities received Fishery Resource Grants (FRGs) and Coastal Recreational Fishing License (CRFL) grants to collect much needed and critical habitat information. Much has been accomplished in those areas and, even with the elimination of Fishery Resource Grant funding, much work still remains.

In spite of difficult economic times, significant progress in improving and protecting coastal habitats continues as lead agencies and other collaborating agencies move forward with the recommendations found in North Carolina's Coastal Habitat Protection Plan.

The 2013-2014 Coastal Recreational Fishing License (CRFL) grant cycle funded three projects related to habitat outreach. They are: 1) "There's Something Fishy About Salt Marsh, Oyster Reef, and Seagrass Habitats," a grant designed to enhance DMF outreach by developing multimedia lesson plans and web content; 2) a grant incorporating stakeholder knowledge of the status and value of coastal habitats into education, outreach, and conservation initiatives; and 3) a grant promoting responsible boating practices and boater awareness of submerged aquatic vegetation. A CRFL project entitled "Development of Submerged Aquatic Vegetation Monitoring Protocol" was completed in 2012 and provides a framework for long-term monitoring of SAV to assess change.

The DMF bottom mapping program has mapped and sampled 5,782 acres in the following areas: Brunswick Co. (Beaverdam, Dutchman creeks and ICW/Oak Island), Hyde Co. (Beacon Island, Back Creek, Hog Island, Outfall Canal/N. Bluff Point), and Carteret Co. (Harlowe Creek, Davis Bay/North western cove areas, lower Core Sound).

Construction of Gibbs Shoal Oyster Sanctuary was completed using reef balls, reef cubes, rip rap, and pilings provided through CRFL funding. Long Shoal Oyster Sanctuary is a new site funded by The Nature Conservancy and mitigation money from the Navy's Department of Defense. Construction of this new site, consisting of reef balls and pilings, was completed by August 2013.

A rock ramp fish passage, funded through the U.S. Army Corps of Engineers, has been constructed adjacent to Lock and Dam 1 on the Cape Fear River to allow anadromous fish passage upstream. DMF has participated in the planning of this project. DMF, Wildlife Resources Commission, N.C. State University, and Cape Fear Riverwatch are tagging fish to monitor movement upstream.

The Division of Coastal Management (DCM) has completed mapping of the estuarine shoreline, resulting in a digital representation of the shoreline by type, modifications, and an inventory of structures. DCM contracted with East Carolina University to accomplish spatial analysis of shoreline and coastal structures. The division undertook detailed internal analysis of shoreline and coastal structures created by the Estuarine Shoreline Mapping Project (ESMP). In order to make shoreline data more functional for resource agencies and various stakeholders, ESMP data was associated with municipality and with water body or Hydrologic Unit Code (HUC) boundaries. The initial mapping effort utilized aerial photos spanning six years, but DCM is updating the recently completed Estuarine Shoreline Mapping effort using 2012 aerial photography. This new effort will result in a current snapshot of the state's estuarine shorelines and associated structures.

DCM initiated discussions with other agencies including the Wildlife Resources Commission, APNEP, Ecosystem Enhancement Program, and the Division of Water Quality (now Water Resources) to gather input for the development of a DENR-wide Living Shoreline strategy. The draft Living Shoreline Strategy identifies six short-term actions and four long-term actions for the department to consider. The strategy summarizes previous and ongoing estuarine shoreline stabilization research in the state, identifies

information gaps, highlights the need for continued staff engagement and public awareness, and investigates potential grant programs or cost reductions. The strategy also recognizes the need to promote/advocate other living shoreline strategies, to develop training programs/certification for marine contractors, and to partner with other groups such as the military to increase the number of living shoreline demonstration sites. DCM presented the draft strategy to the Estuarine Biological and Physical Processes Workgroup for additional input. The final strategy will be presented to the Coastal Resources Commission (CRC) and DENR for approval and implementation.

As part of the proposed outreach connected with the departmental strategy, the division has re-printed 1,075 copies of the “Weighing Your Options” booklet, which provides property owners with information on matching estuarine shoreline stabilization options to shoreline type. The booklet will be distributed by DCM field representatives as they meet with property owners regarding shoreline stabilization projects.

The division has been focusing on a Beach and Inlet Management Plan recommendation for regional approaches to beach and inlet management projects. Staff has met with the Carteret County Shore Protection Office, Town of Pine Knoll Shores, Town of Atlantic Beach, and Town of Emerald Isle to learn more about the development of the Bogue Banks Beach Master Nourishment Plan. DCM intends to use the Bogue Banks Plan as a model for developing a guidance document to promote regional sediment management elsewhere in the state. These initial meetings helped DCM to assess beach nourishment activities, local goals and priorities, regulatory concerns, and proposed thresholds or monitoring strategies that could be incorporated into the guidance document. The guidance document will provide strategies for local governments to address a range of anticipated beach nourishment activities that could be incorporated into a regional plan. These activities could include Atlantic Intracoastal Waterway dredging with concurrent beach disposal, other beneficial use dredging projects, inlet channel realignment projects, FEMA reimbursement projects, or beach nourishment projects.

The National Oceanic and Atmospheric Administration (NOAA) National Estuarine and Research Reserve’s (NERR) Graduate Research Fellowship at the NCNERR funded a research project which began in 2011. The project examines the role that shoreline hardening and climate change have on fiddler crabs and their ability to engineer marsh ecosystems. The project will assess how this ecosystem engineering role changes based on the presence/absence of shoreline stabilization and changing water levels. This ongoing project recently had results published in the journal *Ecology*.

The reserve completed a display at the N.C. Maritime Museum in Beaufort, which describes the CHPP habitats and their importance. The display is visible to all museum patrons due to its prominent location near the front of the museum gift shop.

Estuarine Shoreline Stabilization workshops are scheduled for Sept 2013 for real estate agents to earn continuing education credits. A “Getting to Know Wetlands” workshop (with an emphasis on coastal wetland plant identification and delineation) was conducted in May 2013. The CHPP habitats are addressed during reserve K-12 student field trips, teacher/educator workshops, summer public field trips, and summer camps. Discussions include why these habitats are important to coastal North Carolina and how they benefit plants and animals.

On August 1, 2013, the Division of Water Quality merged into the Division of Water Resources (DWR). In addition, the Stormwater Permitting Program was moved into the Division of Energy, Mineral, and Land Resources (DEMLR). These organizational and programmatic changes have resulted in the shifting of a number of positions and job responsibilities. These adjustments are expected to continue into the 2014 calendar year.

Outreach and educational efforts for engineers, developers, local jurisdictions, and the general public on stormwater rules and techniques are continuing through DWR. Several stakeholder meetings have occurred to develop guidance, procedures and tools for the purpose of advancing low impact development (LID) statewide. A workshop will be held in Raleigh in March 2014 for the purpose of sharing these tools which promote low impact development. There is a strong promotional effort underway to encourage green infrastructure and LID techniques in new development, as well as remediation efforts in existing development, to reduce adverse impacts to water quality through DWR and its partners.

The Stormwater Permitting Program continues to issue and re-issue Phase II stormwater permits to coastal and non-coastal local jurisdictions and military bases. The Stormwater Permitting Program is working closely with entities to help design and develop programs to better control stormwater runoff and also develop strategies to address existing impaired waters. Specific activities include creation and implementation of a “Why Low Impact Development” campaign, updating the BMP Manual to provide credit for low impact development practices not currently in use, and working with partners to identify educational and outreach opportunities.

The Wildlife Resources Commission (WRC) has an intra-agency workgroup designed to evaluate freshwater Primary Nursery Areas (PNA), the methodology used to designate these areas, and to determine what measures may be needed to minimize impacts to the PNA resources. WRC staff serves on the N.C. Aquatic Weed Control Council and is working with other agencies (DWR, DMF) to find funding for the development a statewide Aquatic Nuisance Species Plan. The WRC has developed and installed signage at boating access areas to educate boat operators regarding the need to remove vegetation from live wells, trailers, and props in order to decrease the likelihood of spreading invasive and nuisance plant species between water bodies.

As part of their study regarding the feasibility and benefits of dam and barrier removal, the WRC is conducting a study on the effects of small dams with regards to fish and mussels in the Chowan, Neuse, Roanoke and Tar River basins. WRC and DMF staff are working together to determine definitive minimum habitat criteria and culvert design needed for river herring to successfully migrate upstream to traditional spawning habitats. When this information has been determined, a revision to the Anadromous Fish Stream-Crossing Guidelines will be written in order to enhance fish passage and access. The WRC also fully supports DMF and NCSU in hiring a Sea Grant fellow to analyze at existing spawning survey and obstruction data to specifically address these issues. The fellow is scheduled to begin in September 2013.

WRC is funding a study on endocrine-disrupting chemicals and intersex fish in North Carolina waters, including the Roanoke River. Also on the Roanoke River, the WRC is a partner in funding a series of U.S. Geological Survey gauging stations which will monitor ambient water quality conditions.

The Albemarle-Pamlico National Estuary Partnership completed and adopted a new Comprehensive Conservation and Management Plan (CCMP) this past year. APNEP has also published a newly completed Ecosystem Assessment for the Albemarle-Pamlico region.

APNEP has designed and purchased 50 signs to be erected at WRC boating access areas regarding the importance of submerged aquatic vegetation to water quality and fisheries. As mentioned previously in this report, APNEP, in partnership with NCDOT, has funded aerial photography of the region to determine the presence of SAV and compare the current extent of coverage with the 2007-2008 results. The final flights will be in the spring of 2014 as the weather did not allow for several of the flight paths to be flown this year. APNEP provided \$34,875 for the purchase of reef balls and contracted with DMF for their placement on the newly expanded West Bluff Oyster Sanctuary in Hyde County. The reef balls were produced in Carteret County.

Local Soil and Water Conservation Districts (SWCD) have provided outreach to schools in their respective counties regarding the biodiversity of lakes, streams and estuaries. In addition, the Envirothon program contained an “aquatic ecology” study area and teams of high school and middle school students studied resource materials related to this topic in preparation for local, state and national competitions. APNEP and APNEP-funded programs for educators this year have included its annual teacher institute, Shad in the Classroom curriculum, and the Estuary Essentials summer program for libraries.

The Dept. of Agriculture and Consumer Services’ Division of Soil and Water Conservation (DSWC) is working with DMF to obtain Strategic Habitat Area (SHA) maps for SHA Regions 1 and 2 in a format that is usable for ranking cost share projects by local soil and water conservation districts. When the maps for regions 3 and 4 are complete, they will be shared with local offices as well. For fiscal year 2013, approximately \$180,000 was allocated to local soil and water conservation districts for Best Management Practice (BMP) implementation through the Community Conservation Assistance Program (CCAP). Funding is available to fund one more project for the Swine Buyout Program. The DSWC is currently working to complete the easement acquisition and then decommission the lagoons on a current project in Craven County.

North Carolina Forest Service (NCFS) personnel conducted water quality compliance site inspections on 382 active logging sites across the coastal region in calendar year 2012. The NCFS recorded more than 1,100 instances in which its agency personnel either assisted with Best Management Practice use, identified BMPs that were being used, or made recommendations for using BMPs. Collectively these activities encompassed more than 57,000 acres across eastern North Carolina. Intensive, random, statistical-backed site survey assessments were completed on logging sites in four coastal zone counties to evaluate the degree to which BMPs are being used. This BMP survey project will continue through 2013 and will include all N.C. counties. The NCFS portable logging bridgemats were used on 14 sites across the coastal plain region to establish and protect stream or ditch crossings on logging sites.

The NCFS hosted a water quality meeting that included staff members from NCFS, DEMLR, and DWR to foster better mutual understanding and communication pathways along with training provided by NCSU to learn new erosion control techniques.

The Ecosystem Enhancement Program (EEP), during the past fiscal year, initiated a mapping tool development project to support a new updated River Basin Restoration Priority (RBRP) process. The RBRP process will explicitly incorporate Significant Habitat Areas, CHPP habitat layers, and fish spawning/nursery habitat areas as “added value layers” to the restoration project evaluation module of the tool. The intent is to target the best projects that meet multiple agencies' goals for mitigation funding. A new Regional Watershed Plan in the upper Neuse began in February 2013 that expands the Wake-Johnston Collaborative Local Watershed Plan (WJCLWP) area by approximately 2.5 times. Among other elements, it will include modeling and feasibility assessment for aquatic organism passage projects, with a focus on dam removals and anadromous fish passage/nursery habitat improvement. Discussions with key stakeholders regarding barriers began in May. EEP continues working with the SAV Restoration Subcommittee of the NCSAV Partnership to develop a restoration prioritization tool.

Next steps

The divisions most closely associated with the CHPP recognize that in the last quarter of 2013, it will be imperative to educate the new members of the four commissions about the importance of North Carolina’s Coastal Habitat Protection Plan. It is critical that all understand the significance of these important habitats and the role these leaders will play regarding the protection and the enhancement of the

fisheries in coastal North Carolina. It is equally important for all to understand the valuable role of these habitats and ecosystems and how each contributes to the value of coastal North Carolina.

The CHPP team is beginning work to develop the CHPP Implementation Plan for 2013-2015. A timeline for the 2015 CHPP review, and possible revision, has been developed.

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