

2007 – 2009 CHPP Implementation Plan

Action#	Action description	DENR	DMF	DCM	DWQ	Time frame	Comments
1.1. Enhance enforcement of, and compliance with, Coastal Resources Commission (CRC), Environmental Management Commission (EMC), and Marine Fisheries Commission (MFC) rules and permit conditions.							
1	The Department will seek funding for additional compliance positions in appropriate programs.	Yes	No	No	Yes		DWQ needs one more for Wilmington. Land Resources needs positions; CRAC sending letter of support for establishment of additional DWQ compliance positions.
2	Cross train Marine Patrol officers to take note of and report violations of EMC rules and permits in Coastal Waters to appropriate agencies.	Yes	Yes	No	Yes	Plan in FY 2007-08; train in 2008-09; implement following training.	
3	Enhance DMF habitat alteration permit review capability.	No	Yes	No	No	Establish program and staff in FY 2008-09	One position in each regional office plus one clerical position (total=5) as requested in DMF expansion budget.
4	Design an effective Inspection Program to focus more resources on areas that are critical to coastal habitat protection similar to Shellfish Sanitation shoreline survey program (Lead: DEH-SS Shoreline Survey Coordinator)	Yes	No	Yes	Yes	2007-08 (1st step)	Steps: 1-Organize a DENR interagency inspection task force to examine the issue and develop a system to accomplish the objective; 2-Produce a report with proposed new inspection regime and list of

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							additional resources necessary to execute the plan; 3-Begin implementing the plan
5	Conduct outreach to educate citizens in their jurisdictions about DWQ's Neuse and Tar-Pamlico riparian buffer rules.	No	No	No	Yes		
6	Share COE permit tracking system to address cumulative impacts.	Yes	No	Yes	No		
7	Coordinate DMF, DWQ, and Dept. of Agriculture and Consumer Services actions concerning aquaculture operations in order to protect and enhance surface waters and estuarine resources.	Yes	Yes	No	Yes	2008-09	
8	Develop permit application survey protocols for shellfish and SAV habitats for CAMA applicants to use.	No	Yes	Yes	No	2007-08	Draft protocols under review by DCM.
9	Ensure consistency in habitat definitions among agencies and commissions.	Yes	Yes	Yes	Yes		Draft rule language for SAV habitat being reviewed by MFC. CRC would change their definition to, "SAV as defined by MFC."
1.2. Coordinate and enhance water quality, physical habitat and fisheries resource monitoring (including data management) from headwaters to the nearshore ocean.							
10	Enhance dependable water quality monitoring by investing in Neuse Estuary MODMON and FerryMon.	Yes	No	No	No		Work to secure funding
11	The Department, through the Division of Environmental Health, will develop a data system for monitoring data and mapping of the closure of shellfishing waters to enhance the sharing of information among Departmental Divisions.	Yes	No	No	No		Maps available on DEH-SS and NC-One map websites
12	The Department, through the Division of Environmental Health, will continue to refine and expand the data gathered in shoreline surveys to more effectively assess	Yes	No	No	No		

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	pollution impacts to shellfish growing areas.						
13	The Department, through the Albemarle-Pamlico National Estuary Program (APNEP), will develop a comprehensive monitoring plan for the estuarine system.	Yes	Yes	Yes	Yes	End of 2008	Coordinate with data sharing processes (Action# 16 below).
14	Analyze DMF data to develop fish-based habitat indicators.	Yes	Yes	No	No	End of 2008	
15	Develop a suite of indicators of estuarine and nearshore coastal health (APNEP action).	Yes	No	No	No	Start in 2006-07; complete development by Dec 2007	
16	Work with other DENR agencies to develop data sharing processes. Specifically address data types and standards, data sharing standards, definitions, web services, scaling, integration mechanisms, administration, QA/QC, and other issues.	Yes	Yes	Yes	Yes	2007-09	Coordinate with comprehensive monitoring program (Action ID 187)
1.3. Enhance and expand educational outreach on the value of fish habitat, threats from human activities, effects of non-native species, and reasons for management measures.							
17	The Department, through the Public Information Office will coordinate with the Zoo, Aquariums, Museum of Natural Sciences, State Parks, Educational State Forests and Environmental Education Centers to integrate the relevant components of the CHPP into exhibits and programs.	Yes	No	No	No	2007-09	
18	Develop an educational outreach plan for CHPP – NERR lead.	Yes	No	Yes	No	2007-08	NC-NERR included development of the plan in its activities for FY 07-08.
19	N.C. NERR will include a segment of E-Live to focus on fish habitat.	No	No	Yes	No		E-Live has featured shell bottom and SAV in its 2007 session; 2008 session will focus on soft bottom.

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20	North Carolina's Clean Marina Program and Clean Vessel Act activities will emphasize the threats to fish habitat and benefits of BMPs.	Yes	No	Yes	No		DCM has partnered with Sea Grant to revitalize the Clean Marinas Program and to assist DCM with implementation of BMPs at all coastal marinas. Clean marinas BMP manual being reviewed by DWQ. An Advisory Committee has been established to review criteria and check list (June 2007). Clean Marina workshops are scheduled for December 2007 to focus on power washing. Clean Boating Guide distributed to marinas.
21	DCM and N.C. Sea Grant will incorporate CHPP into their research and education efforts.	No	No	Yes	No		
22	Create interactive display(s) showing habitat functions and threats for use at festivals, etc.	No	Yes	No	No	2008	
23	Develop and distribute brochures about fish, fish habitat, and fishing	Yes	Yes	Yes	Yes	2007-09	To be available for general distribution by DENR staff.
1.4. Coordinate rulemaking and enforcement among regulatory commissions and agencies.							
24	The Department will hold quarterly meetings on proposed projects and enforcement cases that are or may be subject to the permitting or enforcement jurisdiction of the programs of more than one division and invite other state and federal agencies to participate as appropriate.	Yes	Yes	Yes	Yes		Divisions and agencies that will participate in meetings include Division of Coastal Management, Division of Water Quality, Division of Marine Fisheries, Division of Land Resources, Division of Environmental Health, Wildlife Resources Commission and U.S. Army Corps of Engineers. Discussion will include cumulative

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							impact and SEPA concerns
25	The NCDFR will revise its Memorandum of Agreement (MOA) documents with the NC Division of Land Resources and the NC Division of Water Quality to ensure compliance monitoring and enforcement policies are consistently practiced in a timely and seamless manner.	Yes	No	No	No	2007-09	These MOAs primarily address interdivisional communication on the nine forestry performance standards known as the Forest Practice Guidelines Related to Water Quality (FPGs) and the Riparian Buffer Rules applicable to NC's river basins. Additionally, the NCDFR will work with the US Army Corps of Engineers, Wilmington District, to create an additional guidance document for the forestry community that provides interagency consensus on what is allowable minor drainage in wetlands. Other forestry stakeholders will be involved in this guidance development process.
2.1. Evaluate potential Strategic Habitat Areas by:							
<i>a) coordinating, completing, and maintaining baseline habitat mapping (including seagrass, shellbottom, and other bottom types) using the most appropriate technology;</i>							
26	Map submerged aquatic vegetation (SAV) in coastal North Carolina.	Yes	Yes	Yes	Yes	Complete initial coastwide mapping 2007-08	APNEP will coordinate aerial photography in fall 2007.
27	Continue mapping of all shallow estuarine bottom and bottom types.	No	Yes	No	No		
28	Map deep (> 10 ft) estuarine bottoms, starting with lower Neuse River.	No	Yes	No	No	Begin 2007-08	

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29	N.C. NERR will map SAV within reserve boundaries with data acquisition coordinated with multi-agency coastwide mapping effort: Repeat Rachel Carson mapping and map Masonboro and Currituck sites.	No	No	Yes	No	2007-08	
<i>b) selective monitoring of the status of those habitats;</i>							
30	Conduct cooperative DMF/NOAA research evaluating environmental conditions needed to provide suitable SAV habitat.	No	Yes	No	No	Begin summer 2007	
31	DMF and NERR will initiate SAV monitoring of sentinel sites	No	Yes	Yes	No	2008	
<i>c) assessing effects of land use and human activities on those habitats,</i>							
32	Conduct research on the effects of current dock siting practices on SAV and shell bottom, and determine design modifications that would minimize impacts.	No	Yes	Yes	No	2008-09	Possible federal aid or university research project
33	Develop and support graduate fellowship programs to address CHPP priority research needs.	No	Yes	No	No	2008-09	
2.2. Identify and designate Strategic Habitat Areas using ecologically based criteria, analyze existing rules and enact measures needed to protect Strategic Habitat Areas, and improve programs for conservation (including voluntary actions) and acquisition of areas supporting Strategic Habitat Areas.							
34	Integrate information resulting from SHA committee into DENR Divisions' guidelines, policies, and rulemaking.	Yes	Yes	Yes	Yes	Start July 2007; continue through SHA designation	
35	Conduct SHA evaluation and designation process for Albemarle Sound area.	No	Yes	No	No	2007-08	Coordinate with DENR Strategic Conservation Plan
36	<i>MFC designate Anadromous Fish Spawning Areas.</i>	No	Yes	No	No	2007-08	Part of River Herring FMP actions
37	Work with DENR to include SHA priorities within EEP and Strategic Conservation Plan.	Yes	Yes	No	No	2007-09	
38	Conduct SHA evaluation and designation process for	No	Yes	No	No	2008-09	Coordinate with DENR Strategic

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	White Oak basin.						Conservation Plan
3.1 Greatly expand habitat restoration, including:							
<i>a) creation of subtidal oyster reef no-take sanctuaries,</i>							
39	Enhance oyster sanctuaries in Pamlico Sound system. Expand several sanctuaries; plan new sites.	No	Yes	No	No		
40	Enhance Oyster Shell Recycling Program. Discourage use of shell material for landscaping or other uses besides shellfish cultch.	Yes	Yes	No	No		State law prohibits shell disposal in landfills.
41	Monitor all oyster sanctuaries for oyster recruitment, survival, and growth.	No	Yes	No	No		
42	Work with university researchers to monitor fish/invertebrate use of oyster sanctuaries and effect of oysters on local water quality.	No	Yes	No	No	Start 2007-08	
43	Cooperate with university researchers on oyster larvae distribution and movement investigations	No	Yes	No	No	2007-09	
44	DMF Resource Enhancement Section will initiate dissolved oxygen (DO) sampling in Pamlico Sound system to aid in determining suitable sites for oyster restoration.	No	Yes	No	No	2007-08	Coordinate with DWQ Rapid Response Program data collection.
45	Support funding for establishment and operation of shellfish hatcheries	Yes	Yes	Yes	Yes		
<i>b) re-establishment of riparian wetlands and stream hydrology.</i>							
46	Work with the Corps of Engineers and the Department of Transportation on innovative mitigation projects and an appropriate crediting system for them under the Ecosystem Enhancement Program (EEP). Such projects may include the protection and restoration of SAV and oyster beds, and the removal of certain dams and other aquatic organism barriers.	Yes	No	No	No		More development of mitigation credit strategy using nontraditional means, ongoing data development for coastal cataloging unit screening. EEP is incorporating CHPP priorities into its coastal cataloging unit screening process to promote

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							internally (via its Full-Delivery and Design-Bid-Build programs) and externally (via programs like CREP) the implementation of restoration projects in hydrologic units where coastal functions can be most improved.
47	DENR review of state agency requests to the Natural Heritage Trust Fund will place a priority on those proposals that would further the protection and restoration of critical fisheries habitats.	Yes	No	No	No		Coordinate with DENR Strategic Conservation Plan
48	Make protection and restoration of critical fisheries habitats a priority part of the One North Carolina Naturally initiative, such as developing conservation plans for the twenty coastal counties that identify potential conservation focus areas.	Yes	No	No	No	2007-09	Coordinate with DENR Strategic Conservation Plan
49	The Department will assist coastal local governments in identifying navigation and stream restoration projects of particular importance to both fish and fisheries with grants from the State-Local projects program of the Division of Water Resources.	Yes	No	No	No		
50	Survey previously identified Albemarle Sound river herring spawning areas to estimate current condition and spawning function, and identify stream obstructions on river herring spawning streams.	Yes	Yes	No	No	2007-08	EPA grant through APNEP to Environmental Defense to do this in NC portion of Chowan Basin; WRC involvement needed for more comprehensive effort.
51	Include Strategic Habitat Areas as a priority area for CREP (DSWC).	Yes	No	No	No	2007-09	
52	DSWC encourage local SWCDs to include Strategic Habitat Areas and other CHPP priorities in local priority	Yes	No	No	No	2007-09	Need strong emphasis on Community Conservation Assistance

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	ranking system for the Agriculture Cost Share Program and the Community Conservation Assistance Program.						Program because it is the only retrofit program that can begin to reverse stormwater pollution.
53	Establish and maintain an inventory of restoration projects describing the location, amount, and type of habitat established in the coastal river basins. Contributors: EEP, DWQ, etc.	Yes	No	Yes	No		APNEP is conducting an inventory in northeast region; DWQ 319 Program and CWMT also have inventories.
54	The NCDFR will partner with the NCDOT and NCEEP to restore ~13,000 linear feet of stream and floodplain (Priority 2 Restoration) and create ~10-30 acres of wetlands in the Little River watershed (Neuse River Basin).	Yes	No	No	No	2007-08	
55	The NCDFR will work with other DENR agencies to start pre-construction water quality and water quantity monitoring of 'The Canal'.	Yes	No	No	No	Start 2007-08	This channelized stream runs through the Division's 700+ acre Claridge Nursery, located just west of the City of Goldsboro.
<i>c) and other habitat restoration.</i>							
56	Study the feasibility and benefits of developing an SAV Restoration Program (Lead: EEP?).	Yes	Yes	Yes	Yes		Needs further discussion among agencies regarding exotic SAV species. Note: Split into stepwise actions - much more needs doing (research, policy); could be a DENR issue. NEED DENR DECISION.
3.2 Prepare and implement a comprehensive beach and inlet management plan that addresses ecologically based guidelines, socio-economic concerns and fish habitat.							
57	Develop minimum criteria for monitoring beach nourishment projects.	Yes	Yes	Yes	Yes		Part of the Beach and Inlet Management Plan (BIMP); contractor selection has been completed.
58	Convene stakeholder group to identify data gaps, funding	No	No	Yes	No		Part of the Beach and Inlet

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	needs, and framework, and develop a timeline.						Management Plan. The Advisory Committee is comprised of appropriate state and federal agencies and members from the affected coastal communities. BIMP Advisory Committee meeting held in May 2007.
59	DCM will serve as a clearinghouse for beach nourishment monitoring data.	No	No	Yes	No		This is part of DCM CZMA section 309 program for 2006-2010; portions of this dataset already have been compiled by state and federal agencies as well as academic institutions. DCM is currently merging these datasets.
3.3. Protect Submerged Aquatic Vegetation (SAV), shell bottom, and hard bottom areas from fishing gear effects through improved enforcement, establishment of protective buffers around habitats, and further restriction of mechanical shellfish harvesting.							
60	Prepare maps identifying areas where allowed use of bottom disturbing fishing gear does or could overlap areas with sensitive estuarine habitat.	No	Yes	No	No	By December 2008	Update GIS data layers for regulated area boundaries available - analysis required
3.4. Protect fish habitat by revising estuarine and public trust shoreline stabilization rules using best available information, considering estuarine erosion rates, and the development and promotion of incentives for use of alternatives to vertical shoreline stabilization measures.							
61	Support/promote efforts to develop shoreline stabilization demonstration projects along non-ocean shorelines.	No	No	Yes	No		DCM has identified possible funding sources and will be submitting applications for assistance July 2007.
62	Encourage alternatives to vertical shoreline stabilization methods through permit requirements and fees.	Yes	No	Yes	No		The CRC is considering rule changes to its GP for shoreline stabilization that reduce the distance waterward in which bulkheads encroach into public trust areas, by moving

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							structure locations further landward of marsh vegetation to allow for marsh migration with sea level rise and to minimize construction impacts, and by promoting the benefits of rock structures.
63	Refine rule 15A NCAC 07H .2700 GP for Marsh Sills.	No	No	Yes	No	Ongoing	Included in ongoing effort of CRC Shoreline Stabilization Subcommittee.
64	Use NOAA grant to delineate estuarine shorelines; begin by developing mapping methods	No	No	Yes	No	2007-09	The Center for Geographic and Information Systems (CGIA) has been contracted to determine the methodology for delineating the shoreline and structures for North Carolina. They have evaluated techniques such as LIDAR, Feature Analyst, and digitizing from the best available aerial photography. By June 2007, CGIA will have delivered a suggested methodology report as well as a completed shoreline and delineated structures for all public trust waters in Carteret, Craven and Pamlico Counties.
65	Pursue and provide financial support for shoreline stabilization demonstration projects and studies	No	No	Yes	No		DCM has identified possible funding sources and will be submitting application for assistance July 2007.
66	Work with NOAA's Technical Advisory Committee members in their sponsored research program "Ecological Effects of Sea Level Rise" to develop information/tools to	No	Yes	Yes	No		DCM and DMF staff serving as management representatives; Presentations on SLR scheduled for

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	better forecast and manage landscape responses of critical natural resources relative to sea level rise.						July 2007 CRC (Projects Status Report). DCM participating in EPA Coastal Elevations and Sensitivity to SLR study – focuses on coastal areas of NY to NC.
67	Consider erosion rates as an additional factor in the siting of structures along estuarine and public trust shorelines.	No	No	Yes	No	2007-09	The Center for Geographic and Information Systems (CGIA) has been contracted to determine the methodology for delineating the shoreline. They have evaluated techniques such as LIDAR, Feature Analyst, and digitizing from the best available aerial photography. Recommendations expected June 2007.
3.5 Protect and enhance habitat for anadromous fishes by:							
<i>a) incorporating the water quality needs of fish in surface water use planning and rule-making</i>							
68	The Department, through the Division of Water Resources, will participate in a study of Kerr Lake with federal partners. The study will include the evaluation of modifying releases from the dam to benefit anadromous fish in the Roanoke River.	Yes	Yes	No	No	Complete study by 2012	Conduct study under section 216 of the federal Clean Water Act; include other DENR agencies with appropriate knowledge and programs.
<i>b) eliminating obstructions to fish movements, such as dams, locks, and road fills</i>							
69	The Department, through the Division of Water Resources and the Ecosystem Enhancement Program will focus on evaluation and possible removal of lock and dams 1, 2, and 3 on the Cape Fear River.	Yes	No	No	No		Being pursued by CHPP Steering Committee and FMP implementation group
70	The Department, through the Division of Water Resources and the Ecosystem Enhancement Program, will pursue dam removal projects where appropriate.	Yes	No	No	No	2007-09	

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71	Modify dam removal policy with ACE to provide for accomplishing action #s 69 and 70, above.	Yes	Yes	Yes	Yes	2007-09	
72	Survey coastal river basins systematically to locate obstructions to fish migration and prioritize sites for removal/restoration.	No	Yes	No	No		
73	Obtain funding to restore designated streams and associated wetlands designated as anadromous fish spawning areas in the Albemarle Sound area as implementation steps for the River Herring Fishery Management Plan.	Yes	Yes	No	No		APNEP also pursuing funding.
4.1 Reduce point source pollution from wastewater by:							
<i>b) providing incentives for upgrading all types of wastewater treatment systems.</i>							
74	Evaluate 15A NCAC 2H .0400 and 2B .0500 regulations for opportunities to provide incentives for upgrading all types of wastewater treatment systems and make recommendation to EMC.	No	No	No	Yes		
4.2. Adopt or modify rules or statutes to prohibit ocean wastewater discharges.							
75	Evaluate 15A NCAC 2H .0400 rules as they apply to ocean wastewater treatment systems and make recommendation to the EMC regarding modifications.	No	No	No	Yes		
4.3. Prohibit new or expanded stormwater outfalls to coastal beaches and to coastal shellfishing waters (EMC surface water classifications SA and SB) except during times of emergency when public safety and health are threatened, and continue to phase-out existing outfalls by implementing alternative stormwater management strategies.							
76	Work with DENR to prioritize stormwater outfall mapping efforts on areas near critical fisheries habitats and implement DOT's Stormwater Pilot Project on new and innovative technologies to clean up discharges from NC DOT outfalls and associated outlets (DWR action).	Yes	No	No	No		Money with DENR; "Smart sponge" experiment underway in Dare County. Note: Consider UNC-Coastal Studies Institute as another partner in research.
77	Evaluate impact of deep-water ocean outfall for	Yes	Yes	Yes	Yes	2007-09	

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	stormwater management (Lead: DWQ).						
78	Actively seek research on innovative technology to remove stormwater outfalls with 319 grant funding.	No	No	No	Yes		
79	Develop a plan to phase out municipal stormwater outfalls to sounds.	No	No	No	Yes	2007-09	All estuarine outfalls have been identified
80	Enhance DWQ coastal/state stormwater database by mid-2007	No	No	No	Yes	2007-08	Awaiting report
4.4. Enhance coordination with, and financial/technical support for, local government actions to better manage stormwater and wastewater.							
81	Provide Phase II stormwater educational & technical assistance to local governments through the DENR Runoff Pollution Campaign and through partnerships with the Division of Community Assistance and UNC Institute of Government.	No	No	No	Yes		
82	Implement Community Conservation Assistance Program with emphasis on CHPP stormwater priorities in coastal counties (DSWC action).	Yes	No	No	No	Start in 2007-08	DSWC program patterned after Agriculture cost share program. Need strong emphasis on Community Assistance Program because it is the only retrofit program that can begin to reverse stormwater pollution.
4.5. Improve land-based strategies throughout the river basins to reduce non-point pollution and minimize cumulative losses to wetlands and streams through voluntary actions, assistance, and incentives, including:							
<i>a) improved methods to reduce sediment pollution from construction sites, agriculture, and forestry;</i>							
83	The NCDFR will use additional 319 Grant (NPS Pollution Prevention) funds in 2007 to purchase five additional sets of steel bridge mats for the Division's Bridge Mat Loan & Education Project.	Yes	No	No	No		Some of these new mats will be located at coastal plain district offices and made available to local loggers. Using bridge mats for stream or ditch crossings is a

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							preferred BMP with respect to protecting water quality and improving forest operation efficiency and costs.
84	Enhance DCM education efforts such as the N.C. NERR Septic Systems Workshops.	No	No	Yes	No		DCM held grant-writing workshops (2006) introducing participants to various funding agencies that provide assistance to local communities to make environmental improvements that control stormwater runoff, improve local water quality and restore watersheds. Coastal Reserves staff conducted a workshop on Stormwater Management and Sustainable Development in Morehead City on Nov. 1, 2006. (move to 2005-2007 actions)
85	The NCDFR will complete, publish, and distribute statewide 10,000 copies of the NC Forestry BMP Quick-Reference Field Guide in 2007-08.	Yes	No	No	No	2007-08	This 140+ page color-illustrated handbook will complement the Division's 2006 release of the NC Forestry BMP Manual To Protect Water Quality. The Field Guide is a hands-on document targeted at reaching loggers including their heavy equipment operators and laborers.
86	The NCDFR will seek funding to purchase 'rehab' fire plows for five of its coastal-based district offices.	Yes	No	No	No	2007-08	Pulled by tractors or dozers, fire plows are used by the Division to install many miles of prescribed fire and wildfire control lines on an

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							annual basis. Rehab plows leave a more environmental-friendly footprint on the landscape by minimizing sediment release and transport, while accomplishing similar forest protection goals as traditional fire plows. Rehab plows could be used to install control lines on prescribed burns and to mitigate wildfire control lines installed in sensitive areas under emergency conditions.
87	Obtain USDA approval to expand CREP to include the Roanoke, Pasquotank, White Oak, Lumber, and Cape Fear River basins. (DSWC action)	Yes	No	No	No		Awaiting USDA approval to include Roanoke and Pasquotank basins.
88	Implement enhanced marketing strategy for CREP to include education on Neuse and Tar-Pamlico buffer rules. (DSWC action)	Yes	No	No	No		
<i>b) increased on-site filtration of stormwater;</i>							
89	The NCDFR will begin long-term water quality and water quantity monitoring of Beddingfield Creek during 2007 in anticipation of implementing a 3,000+ acre watershed restoration effort in the Neuse River Basin.	Yes	No	No	No	2007-09	The Division is using 319 Grant funds to startup this watershed monitoring. The restoration will be part of the 10-year Urban Forest Watershed Protection and Education Initiative (UFWPEI). The UFWPEI seeks to improve the water quality in urbanizing watersheds by integrating managed forests with planned and existing development and protecting and enhancing sensitive areas in the

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							watershed. Phase 1 of the project has already generated > \$4.0 million in partnership funds, primarily used for land acquisition within the watershed.
<i>c) documentation and monitoring of small but cumulative impacts to wetlands and streams from approved, un-mitigated activities;</i>							
90	Coordinate with Wetland Functional Assessment Team to determine wetland status and trends.	Yes	No	Yes	Yes		Proposed for adoption by letter 21 May 2007.
<i>d) incentives for low-impact development (LID);</i>							
91	Implement five on-the-ground projects to increase understanding of the effectiveness of low impact development in coastal and piedmont North Carolina in meeting water quality goals, develop guidance for design considerations, and provide educational opportunities.	No	No	No	Yes	Dec 2010	Four LID demonstration projects funded with Section 319 funds in Neuse, Tar-Pamlico, and Cape Fear basins
<i>g) other</i>							
92	The NCDFR will seek funding to establish two Water Quality Forester (WQF) positions in coastal-plain Districts 6 (Fayetteville) and 13 (Fairfield).	Yes	No	No	No	2007-09	The Division's WQFs provide a diversity of services including preharvest planning, onsite technical assistance, FPG compliance inspection, and forestry BMP education and training. The WQFs also engage in special projects related to forest water quality, such as the recurring Forestry BMP Implementation Survey Project.
93	The NCDFR will implement 'Tailgate BMPs for Loggers' in 2007-08, a customer education outreach project designed to take the classroom into the woods.	Yes	No	No	No	2007-09	This new service will target equipment operators and laborers that can not financially afford to take off a workday to attend forestry BMP training in a traditional

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							classroom environment.
94	The NCDFR will produce a 4th BMP video on forest operations.	Yes	No	No	No	2007-08	The video, entitled 'BMPs for Site Rehabilitation', will cover appropriate practices to use in stabilizing and closing out a harvested timber tract. Once completed, this video will be incorporated into NC Forestry Association's ProLogger Continuing Education program for water quality and other Division BMP training opportunities.
95	The NCDFR will produce a 2nd edition of the 'Riparian & Wetland Tree Planting Pocket Guide for North Carolina'.	Yes	No	No	No	2007-08	The Division produced 5,000 copies of this 77-page booklet in September 2006. The 1st edition is projected to be out-of-print by mid to late 2007.
96	Through the Division of Land Resources (DLR), work with the Sedimentation Control Commission (SCC) to include CHPP presentations on the Commission agenda and to include information on CHPP actions in SCC and DLR publications.	Yes	No	No	No		
4.6. Improve land-based strategies throughout the river basins to reduce non-point pollution and minimize cumulative losses to wetlands and streams through rule making, including:							
<i>a) increased use of effective vegetated buffers,</i>							
97	<i>EMC solicit public comment on a proposal to extend the vegetative setback for new development within the 20 CAMA Counties from 30 feet to 50 feet.</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>Yes</i>	<i>2007-08</i>	<i>The EMC has initiated rulemaking action to revise DWQ's Coastal Stormwater rules. EMC is soliciting comment on the proposal.</i>
<i>b) reduction of impervious surfaces where feasible and reduction of the level of impervious surface allowable in the absence of engineered stormwater controls,</i>							

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98	Require the use of engineered stormwater controls for all new development within 1/2 mile and draining to Shellfishing Waters that exceeds 12% impervious surfaces and new development that is not within 1/2 mile and draining to shellfishing waters would be required to install engineered stormwater controls is the impervious surface density exceeds 24%.	No	No	No	Yes	2007-08	The EMC has initiated rulemaking action to revise DWQ's Coastal Stormwater Rules (current threshold for engineered stormwater controls is 25% within 1/2 mile of shellfishing waters and 30% beyond 1/2 mile).
<i>c) expansion of CAMA Areas of Environmental Concern (AECs) upstream and landward, and</i>							
99	Expand CAMA Areas of Environmental Concern (AECs) upstream and landward within CAMA counties.	No	No	Yes	No	2007-09	
<i>e) Other</i>							
100	Evaluate stormwater pollution control mechanisms and cumulative wetland and stream losses in the Cape Fear and White Oak River basins to determine if additional regulatory controls are needed and present findings to the EMC.	No	No	No	Yes		Study is underway.
101	Develop a mitigation policy for intermittent streams.	No	No	No	Yes		In development.
4.7. Develop and implement a comprehensive coastal marina and dock management plan and policy for the protection of shellfish harvest waters and fish habitat.							
102	Inventory docks and piers in the 20 coastal counties.	No	No	Yes	No		The Center for Geographic and Information Systems (CGIA) has been contracted to determine the methodology for delineating the shoreline and structures for North Carolina. They have evaluated techniques such as LIDAR, Feature Analyst, and digitizing from the best available aerial photography. By June 2007, CGIA will deliver a suggested methodology report as

Action#	Action description	DENR	DMF	DCM	DWQ	Time frame	Comments
							well as a completed shoreline and delineated structures for all public trust waters in Carteret, Craven and Pamlico Counties.
103	<i>Incorporate EMC's prohibition of marinas in ORWs into CRC rules.</i>	No	No	Yes	Yes	2008-09	
104	<i>Evaluate marina development standards (rule NCAC 7H .0208(b)(5)). CRC consider rule changes to implement in dock and pier management.</i>	No	No	Yes	No		
105	Improve wastewater/stormwater management at coastal marinas	No	No	No	Yes		Evaluating existing and potential water/stormwater management at coastal marinas.
4.8 Reduce non-point source pollution from large-scale animal operations by the following actions:							
<i>a) support early implementation of environmentally superior alternatives to the current lagoon and sprayfield systems as identified under the Smithfield Agreement and continue the moratorium on new/expanded swine operations until alternative waste treatment technology is implemented;</i>							
106	The Department, through the Division of Pollution Prevention and Environmental Assistance, will provide contract and independent swine farms with the technical assistance and training needed to implement effective Environmental Management Systems.	Yes	No	No	No		
107	Support early implementation of environmentally superior alternatives to lagoon and spray field systems. Encourage commissions to express their support for early implementation.	Yes	No	No	No		
<i>b) seek additional funding to phase-out large-scale animal operations in sensitive areas and relocate operations from sensitive areas;</i>							
108	Seek funding for fourth phase of voluntary program to buy out active swine operations in the 100-year floodplain (DSWC action).	Yes	No	No	No		DSWC seeking funding from CWMTF.

