

North Carolina  
Division of Marine Fisheries  
Five-Year Plan For  
Obligated Funds From  
The Marine Resources Fund



Plan Years  
July 1, 2012 – June 30, 2017

November 2011

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**North Carolina Division of Marine Fisheries  
Five-Year Plan for Recurring Obligated Funds from  
The Marine Resources Fund**

1. Plan Period: From: 1 July 2012      To: 30 June 2017
  
2. Amount:    Year 1 (1 July 2012 – 30 June 2013) - \$1,707,590  
                      Year 2 (1 July 2013 – 30 June 2014) - \$1,767,642  
                      Year 3 (1 July 2014 – 30 June 2015) - \$1,820,649  
                      Year 4 (1 July 2015 – 30 June 2016) - \$1,798,647  
                      Year 5 (1 July 2016 – 30 June 2017) - \$1,836,665

5 Year Total = \$8,931,194\*  
\*Does not include Jobs A and B.

3. Plan Summary:

The North Carolina Division of Marine Fisheries (NCDMF) supported legislation for a Coastal Recreational Fishing License (CRFL) to identify all users of the marine and estuarine finfish resource who fish recreationally. This information will assist the Division meeting its mission of ensuring sustainable marine and estuarine fisheries for the benefit of the people of North Carolina. Revenue from the licenses is placed in two separate funds to manage, protect, restore, develop, cultivate and enhance the marine resources of the state.

Funds have been allocated to the NCDMF to meet this mandate. Specifically, through this ongoing long-term funding the NCDMF will augment the ability to collect and analyze essential data used to produce the Fishery Management Plans (FMPs) for recreationally important species and to help determine overfishing status, levels of spawning stock biomass, mortality, recruitment and sustainable harvest levels. FMPs form the basis for most NCDMF management actions. Additionally, funding is needed to help administer license sales and the grant process, and support the technical infrastructure for data collection, and analyses associated with the CRFL.

The division has requested and received approval for both the Coastal Angling Program and the Minimizing Habitat Impact projects with the initial funding year of FY10. These are long term needs by the division that have now been incorporated into this plan to better reflect the ongoing need for these projects. These have been added as Jobs 3 and 4 replacing the Legislatively Mandated Jobs which have been isolated into their own section. These Legislatively Mandated Jobs are now Job A Division Infrastructure Support and Job B Senior Stock Assessment Scientist for \$391,267 and \$118,497, respectively, the first year.

The division pays the funds for the jobs covered in this plan when the expense has been met. Therefore, the funds unspent for any of the jobs remain within the Marine Resources Fund and continue to draw interest monthly. The division did not expend the total of all funds budgeted for the jobs during the previous five-year plan period. Thereby leaving these unspent funds to be obligated for other CRFL strategic plan projects.

4. Background/Need for Marine Resources Fund Funding:

CRFL completes the goal of a three-tiered licensing system for coastal fisheries (Standard Commercial Fishing License, Recreational Commercial Gear License, and CRFL) as recommended in the "Final Report

of the Fisheries Moratorium Steering Committee” and provides for a fair and structured basis for managing the State’s marine and estuarine fishing resources. The CRFL funds will equalize the support from the various users in support of NCDMF’s mission. The CRFL will greatly improve North Carolina’s fisheries data collection and analysis and allow it to remain one of the leading marine and estuarine fisheries data collection, analyses, and management agencies in the country. These positions and operational funds will assist in license sales, data management, data collection, analyses, and fisheries management. Without this funding, data collection and analyses in North Carolina would be greatly jeopardized.

5. Project Plan Goal:

As stated in the CRFL Strategic Plan “the overall goal for the use of funds is to manage and enhance the marine resources of North Carolina based on sound science and strategies”. The goal of this plan is to enhance coastal recreational fishing license sales, data management, data collection and analyses to ensure sustainable marine and estuarine fisheries for the benefit of the people of North Carolina.

## 6. Statement of Work:

### **JOB 1**

Title: Coastal Recreational Fishing License Sales and Data Support

Objectives:

To improve the NCDMF license sales and customer service capability, including improving internal and external license sales, enhancements, maintenance, supervision, etc. at NCDMF license sales offices.

To provide support for license data access and analyses of recreational angler catch and participation in fulfillment of the development of fisheries management plans as stipulated in the Fisheries Reform Act of 1997 (FRA).

To provide support for the Shallow Draft Barge to meet the specific needs of shallow water deployment of reef construction material.

Procedures:

Senate Bill 1126 (Ratified Edition) was signed into law September 2005 and requires persons who fish recreationally in North Carolina for finfish in coastal fishing waters to obtain a CRFL, effective January 1, 2007. The legislation dramatically expands the data collection and licensing requirements for the NCDMF from approximately 6,300 commercial fishermen to an additional projected 1.4 million recreational anglers (Senate Bill 1126 Fiscal Impact Report). In House Bill 831, the General Assembly provided one-time appropriations and one FTE position to NCDMF. The tremendous increase in the essential license sales of the NCDMF could not be met by the one-time appropriation.

For this reason, the Wildlife Resources Commission (WRC) and the Marine Fisheries Commission (MFC) approved \$533,544 for the NCDMF to administer the license, technical infrastructure, data analysis, generation of license reports, and augmentation of licenses, including licenses only sold through NCDMF offices.

Funds are used to fund a Business Officer that assists in managing all aspects of the CRFL projects funded from the Marine Resources and Marine Resources Endowment Funds, including receiving project proposals, coordinating and participating in project reviews, planning, documenting of projects, contract management, review of work, (technical, program, financial) and reporting.

Funds are also used to support the existing positions of a Processing Unit Supervisor V and a Processing Assistant IV. These positions are essential to successful license sales and improving customer support and were funded on commercial license receipts. Recreational license receipts are needed to fund these positions to equalize the balance between all funds supporting license sales support in the NCDMF.

Funds are also used to support the Biologist II and Business Technology Application Analyst positions. The CRFL opened a new door in North Carolina by providing a distinct list of recreational anglers which was not available before. This allows the NCDMF Recreational Survey biologists the opportunity to more accurately estimate angler participation, effort and harvest. All CRFL sales data obtained by the NCDMF and sales data downloaded from the NC Wildlife Resource Commission's (WRC) ALVIN system will be accessed, edited and used by the supported positions to perform analysis of species catch and economic impacts to support the NC Fisheries Reform Act of 1997 requirement of producing fisheries management plans. These data will also allow NCDMF to perform detailed and accurate analysis of recreational catch and effort in federally managed fisheries as mandated by the federal Magnuson-Stevens Fisheries Conservation and Management Act and to coordinate with federal agencies on other federal initiatives such as a national database of recreational anglers and the newly initiated Marine Recreational Information Program.

The Business Technology Application Analyst position funded by this job will be involved in the maintenance and support of existing systems. In addition this position will be involved in the development of applications to incorporate new data as required. The maintenance and support of the applications and centralized database systems are critical to incorporating new data and provide access to all data required by fisheries analysts. Centralized database systems for NCDMF's Fisheries Information Network (FIN) are comprised of the following types of data:

- CRFL Sales for NCDMF-issued products
- CRFL Violations and violations of other NCDMF License and Permit laws
- ALVIN-replicated database of CRFL products issued by the WRC including WRC vessel registration, and other data
- Additional NCDMF Licenses and Permits, and critical data used for the management of marine resources

The division requested and received approval for the Shallow Draft Barge with the initial funding year of FY09. The operations of this vessel require a budget to cover gasoline, diesel, maintenance and other materials. This budget has now been incorporated into this plan to better reflect the ongoing need for this project. The vessel will support expanding reef deployment activities into the productive shallow water areas fringing the Pamlico Sound.

#### Benefits:

This job funds three staff positions within the License and Statistics section; one clerk, one supervisor and one biologist. The license positions are key to providing enhanced customer service in the Manteo and Morehead City license offices and will allow us to staff the Washington license office that was closed in 2011 due to the loss of a state appropriated position. These three offices sell nearly 75% of all CRFL licenses sold by the division. The biologist position conducts all analyses of data on saltwater anglers in the ALVIN system. These analyses provide NCDMF and WRC fisheries biologists necessary data for stock assessments, information for budgetary/legislative needs and information for the public to make critical decisions and be engaged in fisheries management. The biologist is also instrumental in coordinating federal-state initiatives designed to improve recreational catch and effort statistics.

This job also funds the Business Officer located in the Administrative Services Office who serves as the CRFL Project Coordinator. This position serves as the liaison between the division and those receiving funding through CRFL receipts. The division has issued four Request for Proposals to fund projects identified in the CRFL Strategic Plan. There have been 107 proposals received over the four years which require review by both Marine Fisheries and Wildlife Resources Commission staff. This position has coordinated and participated in project reviews, planning, documenting of projects, contract management, review of work, (technical, program, financial) and reporting.

Below are the CRFL products implemented since the initial sale of the CRFL in January, 2007:

- Ocean Fishing Pier Blanket Coastal Recreational Fishing License
- For Hire Blanket Coastal Recreational Fishing License
- Coastal Recreational Fishing License Exemption Permit
- Blocks of 10 Ten Day Coastal Recreational Fishing Licenses

Other enhancements implemented in FIN and ALVIN-replicated databases and applications:

- FIN enhancement providing search and display of CRFL license data via the ALVIN-replicated database
- CRFL sales report summaries
- Direct access to CRFL license data to fisheries analysts via the FIN and ALVIN-replicated database

Reef material deployment in shallow areas on the sound side of the barrier islands and the protected areas of the bays surrounding Pamlico Sound have demonstrated increased recruitment and survival of many fish and shellfish species. Additionally, construction and enhancement of reefs will meet goals established in the North Carolina Coastal Habitat Protection Plan.

Location:

Morehead City, Manteo, Raleigh and Washington, NC

Major Products Produced:

Improved customer service provided by these positions includes less wait time customers endure when purchasing a license. These positions also improve coordination between NCDMF staff (IT, License sales and Marine Patrol) and the North Carolina Wildlife Resources Commission (NCWRC) by providing a single source of contact. These funds also provide the resources to ensure better data on recreational catch and effort and the impact of recreational fishing on North Carolina’s economy.

Lead NCDMF Personnel:

Don Hesselman - Chief, License and Statistics, Morehead City  
 Suzanne Guthrie - Chief, Administrative Services, Morehead City  
 Nancy Francis- Chief, Information Technology, Morehead City

Year 1 Budget Justification:

Personnel

1 Processing Unit Supervisor V	2,080 hours x \$16.41/hr. = \$34,128
1 Processing Assistant IV	2,080 hours x \$13.98/hr. = \$28,648
1 Biologist II	2,080 hours x \$26.94/hr. = \$56,031
1 Bus. & Tech. App. Analyst	2,080 hours x \$32.45/hr. = \$67,500
1 Business Officer	2,080 hours x \$27.99/hr. = \$58,223

Fringe Benefits – Fringe benefits include Social Security, retirement and health insurance. Personnel salaries and fringe have been budgeted to account for a three percent increase each year. Fringe benefits are calculated at the rate of 7.65% of salary for Social Security, 13.12% (first year) and 14.31% (years 2 through 5) of salary for retirement. An additional \$4,931(first year) and \$5,192 (years 2 through 5) per employee is charged annually for health insurance.

1 Processing Unit Supervisor V	\$ 12,019
1 Processing Assistant IV	\$ 10,881
1 Biologist II	\$ 16,569
1 Bus. & Tech. App. Analyst	\$ 18,951
1 Business Officer	\$ 17,024

Travel – The budget includes monies to be used for in-state transportation, meals and lodging for any overnight travel when working on CRFL projects. In-state transportation includes the use of two state-issued vehicles. Travel budget also includes travel expenses incurred by division staff attending advisory or CRFL Joint Committee Meetings. This also includes employee education expenses for required training.

Use of state vehicles	4,412 miles/year x \$0.34/mile	\$ 1,500
	4,412 miles/year x \$0.34/mile	\$ 1,500
	2,353 miles/year x \$0.34/mile	\$ 800
Employee Education		\$ 2,500



Supplies – General office supplies, postage, and renting a copier to support the positions funded by the job. Also, supplies are needed for the computers/printers as well as repairs on computers/printers for the five positions funded by this job. This will also provide the gasoline, diesel fuel and materials for the barge operations.

General Office Supplies		\$ 7,089
Postage		\$12,900
Copier Rental	\$625/mth. x 12 months	\$ 7,500
Data Processing Supplies		\$ 4,010
Computer/printer Repairs		\$ 1,500
Printing		\$ 5,000
Barge supplies		\$17,000

Utilities – During this budget period, rental charges will be incurred for office space used by the Processing Unit Supervisor V and Business Officer located in Morehead City, NC, the Business & Technology Applications Analyst located in Raleigh, the Processing Assistant position located in Manteo, and the Biologist II position located in Washington, NC. Funds also cover the overhead of the facilities where staff offices are located. This includes services for electrical, telephone, natural gas, and water and sewer.

Office Space Rent	1 office space @ \$ 6,000	\$ 6,000
	1 office space @ \$ 6,000	\$ 6,000
	1 office space @ \$ 7,800	\$ 7,800
	2 office spaces @ \$ 8,000	\$16,000
	Morehead City Office space	\$35,000
Electrical Service		\$11,000
Natural Gas/Propane		\$16,000
Telephone & Cellular Service		\$11,100
Water and Sewer Service		\$ 3,500

Other Costs – Each of the five positions will require the purchase and replacement costs of computer equipment and printers. The telecommunication data charges and Local Area Network service charges are required to support the computer infrastructure of the database administration functions. The division pays the Atlantic States Marine Fisheries Commission over \$40,000 annually (in the past 100% was paid from commercial license receipts) for dues as required by legislation. More than half of the species managed by NCDMF are recreational species. Therefore, the division will pay half the dues from this job budget. The Office Furniture expenditure of \$2,000 will be incurred only in the first year of the job. Since no specific increases have been requested in subsequent years for operations, the recouped \$2,000 per year will be used to offset increases in operations only (travel, supplies, and other categories).

Office Equipment	\$ 1,800
Office Furniture	\$ 2,000
Other Equipment	\$ 2,682
Computer Equipment	\$ 7,849
Computer Software	\$ 4,000
Telecommunication Data Charges	\$ 240
Local Area Network Service Charge	\$ 1,300
Atlantic States Marine Fisheries Commission Dues	\$ 20,000

**TOTAL YEAR 1 (JOB 1) \$533,544**

Job 1 Amount for Five Years (Centers 2142 1560; 2142 1561; and 2142 1562):

Table 1. Coastal Recreational Fishing License Sales and Data Support Funds for Five Years.

	Fiscal Year						5 Yr. Totals
	2012-13*	2013-14	2014-15	2015-16	2016-17		
Personnel	\$ 244,530	\$ 251,866	\$ 259,422	\$ 267,205	\$ 275,221	\$ 1,298,244	
Fringe Benefits	\$ 75,444	\$ 81,270	\$ 82,929	\$ 84,638	\$ 86,399	\$ 410,680	
Travel	\$ 6,300	\$ 6,300	\$ 6,300	\$ 6,300	\$ 6,300	\$ 31,500	
Equipment	\$ 18,331	\$ 18,331	\$ 18,331	\$ 18,331	\$ 18,331	\$ 91,655	
Supplies	\$ 54,999	\$ 54,999	\$ 54,999	\$ 54,999	\$ 54,999	\$ 274,995	
Contractual	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Construction	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Other	\$ 133,940	\$ 133,940	\$ 133,940	\$ 133,940	\$ 133,940	\$ 669,700	
<b>Total</b>	<b>\$ 533,544</b>	<b>\$ 546,706</b>	<b>\$ 555,921</b>	<b>\$ 565,413</b>	<b>\$ 575,189</b>	<b>\$ 2,776,774</b>	

\* Each subsequent year beyond year 1 assumes a 3% annual legislative salary increase.

## JOB 2

Title: Fisheries Independent Assessment Program

Objectives:

The FRA established a process requiring preparing coastal FMPs in North Carolina. The goal of these plans is to ensure the long-term viability of the state's economically important species or fisheries. The purpose of this request is to augment NCDMF's ability to collect and analyze essential data used to produce the FMPs for recreationally important species and to help determine overfishing status, levels of spawning stock biomass, mortality, recruitment and sustainable harvest levels which form the basis for all management actions recommended in FMPs. Specific objectives are:

1. To calculate annual indices of abundance in major North Carolina rivers and the Atlantic Ocean for the following target species: American shad (*Alosa sapidissima*), striped bass (*Morone saxatilis*), bluefish (*Pomatomus saltatrix*), spotted seatrout (*Cynoscion nebulosus*), weakfish (*Cynoscion regalis*), spot (*Leiostomus xanthurus*), Atlantic croaker (*Micropogonias undulatus*), southern kingfish (*Menticirrhus americanus*) red drum (*Sciaenops ocellatus*), Spanish mackerel (*Scomberomorus maculatus*), and southern flounder (*Paralichthys lethostigma*), . [Catch per unit effort (CPUE) data from fishery independent surveys that standardizes effort will provide an unbiased relative index of abundance to track stock status. Target species may vary by river system.]
2. To supplement samples for age, growth, and reproduction studies in order to determine age structure, sex ratios, and relative cohort size for the target species.
3. To evaluate catch rates and species distribution for identifying and resolving management problems in five North Carolina river systems and the Atlantic Ocean.
4. To characterize habitat use in those five river systems.

The goal is to maintain long-term fisheries independent surveys that will provide data on CPUE, catch composition, abundance, size, age, maturity and mortality in the Neuse, Pamlico, Pungo, New and Cape Fear rivers and Atlantic Ocean for important recreational fish. Maintaining the integrity of and adding to existing times series will provide for improved stock assessments and, through more effective FMPs, the long-term viability of the recreational finfish fisheries.

## Procedures:

Fishery-independent data are collected to provide measures of relative abundance that are not confounded by the commercial and recreational strategies of targeting areas where fish densities are highest or other biases inherent to dependent data (associated with gear selectivity, changes in vessels and gear over time, non-reporting, seasonal closures, size and bag limit restrictions, and fluctuations in market value). Statistically designed surveys provide fishery-independent data and this study employs either a stratified-random sampling design based on area and water depth or solely area.

### Rivers: Neuse, Pamlico, Pungo, New, and Cape Fear

The five river systems sampled are the Neuse, Pamlico, Pungo, New and Cape Fear. Each system is overlaid with a one-minute by one-minute grid system (equivalent to one square nautical mile) and delineated into shallow ( $\leq 6$  feet) and deep ( $> 6$  feet) *depth strata* using bathymetric data from NOAA navigational charts and field observations. NCDMF staff also consider such factors as obstructions to fishing, safety, and accessibility when evaluating each grid for inclusion in the sampling universe. Each of the systems is further segregated into similar sized areas to insure that samples are evenly distributed throughout each system (*area strata*). The New and Cape Fear rivers, which are smaller rivers, will be segregated into two areas: lower and mid. Additionally the Cape Fear River will only be set for shallow strata due to flow conditions that impact the catchability of the fishing gear in the deep water. The SAS procedure PLAN is used to randomly select sampling grids within each area (SAS Institute 2004). Each month for the Pamlico district, 32 core samples are completed (8 areas x twice a month x 2 samples-shallow and deep). Each month for the southern district (New and Cape Fear rivers) 24 core samples are completed (Cape Fear - 2 areas x twice a month x 1 shallow sample and New River - 2 areas x twice a month x 2 samples-shallow and deep). Sampling gear consists of an array of nets consists of 30-yard segments of 3, 3½, 4, 4½, 5, 5½, 6, and 6½ inch stretched mesh webbing (240 yards of gill net). Catches from this array of gill nets, combined together, comprise a single sample. Gear is typically deployed within an hour of sunset and fished the following morning to keep all soak times at a standard 12 hours. All nets are floating and fish the entire water column.

Physical and environmental conditions, including surface and bottom water temperature ( $^{\circ}\text{C}$ ), salinity (ppt), dissolved oxygen (mg/L), bottom composition, as well as, a qualitative assessment of sediment size, are recorded upon retrieval of the nets on each sampling trip. All attached submerged aquatic vegetation (SAV) in the immediate sample area is identified to species and density of coverage is estimated visually when possible. Additional habitat data are recorded including distance from shore, presence or absence of sea grass or shell, and substrate type. All species groups are enumerated and an aggregate weight (nearest 0.01 kilogram (kg)) is obtained for most species. Individuals are measured to the nearest millimeter for either fork or total length according to the morphology of the species. Selected species are retained and taken to the lab where age structures (otoliths and/or scales) are removed and sex and maturity stage of gonads are determined. Live Atlantic sturgeon (*Acipenser oxyrhincus*), striped bass, and red drum captured in good condition are tagged and released.

### Atlantic Ocean

State waters in the Atlantic Ocean from the breakers out to 3 miles are sampled from New River Inlet to the South Carolina line segregated into Onslow and Long bays by Frying Pan Shoals. The ocean is overlaid with a one-minute by one-minute grid system. Areas will be delineated into known hard bottom and soft bottom habitats. Soft bottom habitats will be sampled to limit the influence of different habitat type. The SAS procedure PLAN is used to randomly select sampling grids within each area (SAS Institute 1985). Each calendar quarter, 16 core samples are completed (2 areas x eight samples). No more than 2 samples per week in an area or 4 samples per month in an area will be collected. Sampling gear consists of an array of 30-yard net segments of 2½, 3, 3½, 4, 4½, 5, 5½, and 6 inch stretched mesh webbing (240 yards of gill net). Catches from this array of gill nets, combined together, comprise a single sample. Gear is typically deployed within an hour of sunset and fished the following morning to keep all soak times at a standard 12 hours. All nets are floating and fish the entire water column.

Physical and environmental conditions, including surface and bottom water temperature (°C), salinity (ppt), dissolved oxygen (mg/L), bottom composition, as well as, a qualitative assessment of sediment size, are recorded upon retrieval of the nets on each sampling trip. Additional habitat data are recorded including distance from shore and substrate type. All species groups are enumerated and an aggregate weight (nearest 0.01 kilogram (kg)) is obtained for most species. Individuals are measured to the nearest millimeter for either fork or total length according to the morphology of the species. Selected species are retained and taken to the lab where age structures (otoliths and/or scales) are removed and sex and maturity stage of gonads are determined. Live coastal sharks, Atlantic sturgeon, striped bass, and red drum captured in good condition are tagged and released.

Benefits:

The Fisheries Independent Assessment Program (FIA) is one of the most used fishery-independent surveys in North Carolina. Survey data were used in several state and federal fishery management plans. These include (but are not limited to): striped mullet, striped bass, spotted seatrout, blue crab, red drum, and Atlantic croaker. The FIA provides valuable fishery-independent data for areas of the state and life stages not covered by other sampling programs. These include (but are not limited to): species distribution and abundance, age, sex and maturity samples, length-frequency and length-weight data, habitat use and characteristics, and water quality. The FIA also works in conjunction with ongoing tagging programs for red drum, striped bass, Atlantic sturgeon, and endangered sea turtles. The aim of these programs is to describe migration patterns, mortality rates, and define stock structure and management units for state and federal FMPs. The FIA has also provided data concerning the proposed listing for federally protected species. The FIA has and is currently being used to support other CRFL-funded projects. These include: 1) Origin of Central Southern Management Area Striped Bass Using Otolith Chemistry and Recommendations for Fishery Management and 2) Diet Composition of Predatory Fishes in North Carolina.

Location:

Coastal counties of North Carolina

Major Products Produced:

The direct products include long-term indices of relative abundance, fisheries independent data to tune and calibrate stock assessments. Other benefits include supplementing life history information (age and growth structures and measurements, sex, maturity, length, weight), and providing mortality estimates. The data are critical components for stock assessments and are used in the development of legislatively mandated Fishery Management Plans.

Lead NCDMF Personnel:

Chip Collier, Biologist Supervisor, Wilmington  
Jason Rock, Biologist, Washington  
Rich Carpenter, District Manager, Wilmington  
Katy West, District Manager, Washington  
David Taylor, Fisheries Management Section Chief, Morehead City

Year 1 Budget Justification:

Personnel

1 Marine Fisheries Biologist I	2,080 hours x \$18.33/hr.= \$ 38,132
5 Marine Fisheries Tech. II	10,400 hours x \$13.82/hr.= \$143,735
1 Temp. M. F. Tech. II (11 month)	1,920 hours x \$14.36/hr.= \$ 27,580

[Note: NCDMF supplies from other funding sources 1 Biologist II, 1 Biologist I, 1 Fisheries Technician III, and 3 Fisheries Technician IIs that contribute to these surveys and subsequent analysis.]

Fringe Benefits - Fringe benefits include Social Security, retirement and health insurance. Personnel salaries and fringe have been budgeted to account for a three percent increase each year. Fringe benefits are calculated at the rate of 7.65% of salary for Social Security, 13.12% (first year) and 14.31% (years 2 through 5) of salary for retirement. An additional \$4,931 (first year) and \$5,192 (years 2 through 5) per employee is charged annually for health insurance. The temporary only has Social Security as a fringe.

1 Marine Fisheries Biologist I	\$ 12,851
5 Marine Fisheries Technician II	\$ 54,509
1 Temp. M. F. Technician II (11 month)	\$ 2,110

Travel - The budget includes monies to be used for in-state transportation and lodging for any overnight travel.

Lodging (in-state)	\$ 6,000
Meals (in-state)	\$ 7,000

Equipment: Includes cost to replace sampling boat, boat trailers, sampling vehicle, and a boat motor in disrepair for the Pamlico (boat and trailer), Southern (sampling vehicle), and Manteo (boat motor) districts. Current equipment requires constant repairs and has recurring safety and reliability issues due to their age.

Boat and Trailer	\$ 49,000
Trailer	\$ 4,000
Truck	\$ 26,000

Supplies: General office furniture, computer equipment, boat repairs and gasoline, scientific supplies, clothing, net materials, as well as printing and duplicating and telephone costs are included in this item.

Office and Scientific Supplies	\$ 63,300
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Other Costs: Charges by the Department of Environment and Natural Resources for office rent.

Office Space Rent	\$ 28,968
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**TOTAL YEAR 1 (JOB 2) \$ 463,185**

Job 2 Amount for Five Years:

Table 2. Fisheries Independent Assessment Program Funds for Five Years.

	Fiscal Year					5 Yr. Totals
	2012-13*	2013-14	2014-15	2015-16	2016-17	
Personnel	\$ 209,447	\$ 215,730	\$ 222,202	\$ 228,868	\$ 235,734	\$ 1,111,983
Fringe Benefits	\$ 69,470	\$ 74,461	\$ 75,761	\$ 77,099	\$ 78,477	\$ 375,268
Travel	\$ 13,000	\$ 13,000	\$ 13,000	\$ 13,000	\$ 13,000	\$ 65,000
Equipment	\$ 79,000	\$ 92,000	\$ 112,000	\$ 56,000	\$ 59,000	\$ 398,000
Supplies	\$ 63,300	\$ 63,300	\$ 63,300	\$ 63,300	\$ 63,300	\$ 316,500
Contractual	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

Construction	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Other	\$ 28,968	\$ 28,968	\$ 28,968	\$ 28,968	\$ 28,968	\$ 28,968	\$ 144,840
Total	\$ 463,185	\$ 487,460	\$ 515,231	\$ 467,235	\$ 478,480	\$ 2,411,591	

\* Each subsequent year beyond year 1 assumes a 3% annual legislative salary increase.

Equipment Justification:

The Fisheries Independent Assessment Program (FIA) is part of the larger NCDMF fishery-independent sampling effort called Program 915 (Pgm 915). Pgm 915 is a fishery-independent gill net survey sampling throughout the state. Specifically, this survey samples both the mainland and outer-banks shorelines of Pamlico Sound as well as the Neuse, Pamlico, Pungo, New, and Cape Fear rivers. The Atlantic Ocean is sampled following similar protocols but is called Program 916 (Pgm 916). The data collected in Pgm 915 and Pgm 916 are used (or will be used once the time series is sufficient) in state and federal stock assessments either as a whole or in part depending on the species of interest. It is also used to help the NCDMF evaluate fishery rules and regulations and to gauge the effects pre- and post-implementation.

The sampling protocols are the same for all areas with the exception of the New and Cape Fear rivers, the outer-banks, and the Atlantic Ocean in the summer months when minor alterations in setting times and areas sampled are followed to reduce the likelihood of sea turtle interactions. Sampling for these programs is continuous from February-December each year. Technicians are in the field sampling 3-4 days each week.

The sampling of Pamlico Sound is funded from federal Sportfish Restoration Funds (USFWS Grant NC F-70). Sampling in the Neuse, Pamlico, Pungo, New, and Cape Fear rivers, and the Atlantic Ocean is funded from Coastal Recreational Fishing License (CRFL) receipts. CRFL funds for Pgm 915 and Pgm 916 are used to cover the 25% state-match requirement of NC F-70. With CRFL funds being used as a match for NC F-70, essentially we can't have one without the other. Any funds used to purchase equipment for NC F-70 sampling will count towards the 25% state-match requirement of the NC F-70 grant.

CRFL Equipment Needs:

Two crews from the Washington office sample the Pamlico, Pungo, and Neuse rivers. One crew from the Wilmington office samples the New and Cape Fear rivers and the Atlantic Ocean. All three crews are funded from CRFL receipts.

The Washington office uses two boats and two trucks to sample the Pamlico, Pungo, and Neuse rivers. The Washington office needs two new boats and trailers and one truck. The first boat and trailer will replace a 1996 21' Parker w/ a T-top, a 200hp Mercury motor (motor replaced in 2008), and a galvanized two axel trailer originally placed on surplus by Marine Patrol. The current boat has hull deterioration and stern delaminating, stress cracks, and a deck with significant signs of fatigue and will be 16 years old when replaced in Year 1. The second boat will replace a 1995 20' Jones Brothers Cape Fisher w/ a T-top, 200hp Mercury motor (motor replaced in 2006), an aluminum two axel trailer. The current boat has a deck with significant signs of fatigue, stress cracks, and has required numerous repairs and significant down time the past several years. The boat will be 19 years old when replaced in Year 3. The truck to be replaced is a 2005 Dodge Ram 2500 Crew Cab 4x4 with 95,000 miles. This truck is projected to have over 125,000 miles when replaced in Year 2. All equipment is solely dedicated to this project.

The Wilmington office uses two boats and one truck to sample the New and Cape Fear rivers and the Atlantic Ocean. The truck to be replaced is a 1996 Ford F-250 Crew Cab 4x4 with 112,000 miles. This truck is projected to have over 120,000 miles when replaced in Year 1. The first boat to be replaced is a 2000 21' Jones Brothers Bateau with a T-top, 115hp Mercury motor, and a two axel trailer. When replaced in Year 2 the boat will be 13 years old. All equipment is solely dedicated to this project.

NC F-70 Equipment Needs:

One crew from the Manteo office samples the outer-banks area of Pamlico Sound and one crew from the Washington office samples the mainland (Hyde County) area of Pamlico Sound. These two crews are funded from NC F-70.

The Manteo office uses one truck and two separate boats to sample the outer-banks. The boat used is dependent on weather conditions and the area to be sampled each day. The Manteo office is in immediate need of a replacement trailer for a 22' ft Jones Brothers Bateau. The current trailer is aluminum with dual axels purchased in 2000 and the frame is severely deteriorated. We would like to purchase this in Year 1 with a similar trailer. The Manteo office is also in need of a new 105hp jet drive motor. The current motor is an 85hp Mercury jet drive purchased in 2002. The current motor is under sized considering the size/weight of the boat and sampling gear; when replaced in Year 2 the motor will be 12 years old. The Manteo office will also need a new sampling truck in Year 3. The current truck is a 2004 Chevy Silverado 1500 4x4 with 84,000 miles; when replaced in Year 3 it is projected to have over 120,000 miles. All equipment is solely dedicated to this project.

The Washington crew uses one truck and one boat to sample the mainland areas. The Washington office is in need of a new truck in Year 3, the current sampling truck is a 2008 Ford F-250 Crew Cab 4x4 with 82,000 miles. When replaced this truck is projected to have over 160,000 miles. The Washington office will also need a new sampling boat and trailer in Year 5. The current boat is a 2002 20' Privateer with a T-top and an 115hp Mercury motor on the original trailer (dual axel). When replaced in Year 5, the current boat and trailer will be 15 years old. All equipment is solely dedicated to this project.

Equipment Cost Estimates:

All new truck costs were estimated using our recent purchase of a 2011 Ford F-250 Super Duty Crew Cab 4x4 with a cost of approximately \$24,000. A 7% annual price increase was factored into the price of all trucks.

All new boat costs were from an estimate for a 20' Jones Brothers Cape Fisher w/ T-top, 200hp motor, and two-axel trailer. The estimate was for a total 2011 cost of \$45,653. A 7% annual price increase was factored into the price of all boat purchases.

The cost for a 105hp jet drive boat motor was estimated from the recent purchase price of like motor in 2010 of \$12,600. A 7% annual price increase was factored into the price of all motors.

The cost of a replacement trailer was estimated from the recent purchase price of a similar trailer in 2010 of \$3,500. A 7% annual price increase was factored into the price of all trailers.

Due to the delay in funding availability (not available until July 2012) a 7% annual price increase was included in Year 1 prices.

Equipment Replacement Schedule and Costs:

	<b>2012/13</b>	<b>2013/14</b>	<b>2014/2015</b>	<b>2015/2016</b>	<b>2016/2017</b>
	<b>Yr 1</b>	<b>Yr 2</b>	<b>Yr 3</b>	<b>Yr 4</b>	<b>Yr 5</b>
<b>Washington</b>					
Replace 2005 Dodge Truck	-	\$ 28,000	-	-	-
Replace 2008 Ford Truck	-	-	\$ 30,000	-	-
Replace 1996 Parker	\$ 49,000	-	-	-	-
Replace 1995 Jones Brothers	-	-	\$ 52,000	-	-
Replace 2002 Privateer	-	-	-	-	\$ 59,000

<b>Wilmington</b>					
Replace 1996 Ford	\$ 26,000	-	-	-	-
Replace 2000 Jones Brothers	-	\$ 49,000	-	-	-
Replace 1999 Parker	-	-	-	\$ 56,000	-
<b>Manteo</b>					
Replace 2000 Trailer	\$ 4,000	-	-	-	-
Replace 2002 Jet Drive Motor	-	\$ 15,000	-	-	-
Replace 2004 Chevy Truck	-	-	\$ 30,000	-	-
<b>TOTAL*</b>	<b>\$ 79,000</b>	<b>\$ 92,000</b>	<b>\$ 112,000</b>	<b>\$ 56,000</b>	<b>\$ 59,000</b>

**\*Actual costs will most likely be less but with prices increasing need to make sure enough funds are available. All cost estimates were calculated with 7% annual price increase, including Year 1.**

### **JOB 3**

Title: Coastal Angling Program

Objectives:

The FRA mandates development of state-level FMPs. Recreational saltwater fisheries in North Carolina have an estimated economic value of 1.6 billion dollars and must be considered in the development of any FMP. The collection of recreational fisheries statistics is a primary function of the NCDMF. North Carolina has long participated in the Marine Recreational Fisheries Statistics Survey (MRFSS) to obtain estimates of recreational fishing effort and catch and integrally involved in its replacement, the Marine Recreational Information Program (MRIP). MRIP is a national survey program that gathers recreational fisheries information sufficient for use in management at regional levels (Northeast, Mid-Atlantic, South Atlantic, etc). MRIP is not intended to provide state-level estimates of catch and participation and provides little to no information on fisheries such as flounder gigging, recreational shellfishing and crabbing, or upper estuarine fisheries for anadromous species (striped bass, American shad, hickory shad). The Coastal Angler Program (CAP) provides comprehensive recreational fisheries data for the FMP process for all managed species. To achieve this goal, CAP has the following objectives:

1. Maintain and continue to develop a long-term modular platform for capturing, organizing, and processing recreational fishing data;
2. Create flexibility within the program to address future data needs;
3. Increase sample size to provide reliable estimates of recreational catch (harvest and discard) and participation for managed species;
4. Integrate existing North Carolina recreational fishing data with new survey products into a single data management system that will meet the needs of fishery managers, scientists, and fishermen;
5. Develop analytical tools to enhance the FMP process (bag limit analysis, impacts of new size and bag limits, etc.);
6. Incorporate economic and sociological survey components of all recreational fisheries; and
7. Use web-based tools and other Internet technologies to enhance existing survey methodology.
8. Conduct survey in Central Southern Management Area (CSMA) to obtain striped bass catch rates (harvest and discard), overall species composition, size distribution, fishing location, fishing method, fishing effort, and socioeconomic data.

Procedures:

The dynamic nature of North Carolina's recreational fisheries and the scope of this job require many strategies to determine the impact recreational fishers have on the coastal resources of the State. CAP



expands the function of MRIP by addressing limitations and incorporating state-specific management needs. Components of CAP include: 1) coastal angling survey, 2) assessment of night fishing, 3) upper estuarine angler survey, 4) flounder gigging survey, 5) recreational shellfish survey, and 6) specialized surveys.

The coastal angling survey will increase precision of catch and effort estimates through additional angler interviews. Interviews will be obtained through an onsite access point survey where effort is distributed according to MRIP survey procedures. Additional biological information on species managed through state-specific FMPs will also be collected to reduce variability in the production of catch at age matrices. Estimates of catch and effort across all fishing modes will continually be evaluated to determine if adjustments in sample coverage, size, and distribution are necessary.

North Carolina collaborated with the National Marine Fisheries Service on a pilot plan during 2009 and 2010 to assess methods for eliminating bias in catch rates associated with night fishing. This project focused on sampling throughout a 24 hour period in six hour time blocks (2:00 a.m. to 8:00 a.m., 8:00 a.m. to 2:00 p.m., 2:00 p.m. to 8:00 pm, and 8:00 p.m. to 2:00 a.m.). This new methodology will be incorporated in 2012 to intercept anglers fishing at night. The additional angler interviews provided by CAP will be distributed using the new MRIP survey approach to include coverage of night fishing.

Species such as American shad, hickory shad, and striped bass caught in the upper estuarine waters are not covered through the MRIP or the coastal angling survey. In the past surveys were conducted for anadromous species using funds from separate non-secure, short-term grants from ASMFC and Wallop-Breaux. The successful funding of anadromous work within North Carolina by these grant agencies is not predictable and jeopardizes the ability to maintain a long-term data series. The importance of having a long-term, uncompromised time series for these species is crucial for fisheries management. Currently this work is funded by a separate two-year CRFL grant. This proposal will combine the two-year grant so all recreational survey work will be encompassed under a single grant.

The upper estuarine survey will be conducted in the Tar, Pamlico, Pungo, Trent, and Neuse rivers to obtain catch rates (harvest and discard), overall species composition, size distribution, fishing location, fishing method, fishing effort, and socioeconomic data. This survey utilizes an access-point survey design to estimate both catch and effort and will provide key data on which to base fishery management decisions that optimize the likelihood of stock recovery. Socio-economic data collected in the surveys will be used to demonstrate the economic implications of well-managed fish stocks.

A flounder gigging survey will provide continuous coverage to assess the impact of this fishery. Previous estimates from a short-term NCDMF survey in the central and southern areas of coastal North Carolina determined flounder gigging is greater than hook-and-line catch. A mandatory survey to determine saltwater fishing activities is conducted by all individuals purchasing Coastal Recreational Fishing Licenses (CRFL) from WRC and NCDMF offices and over the Internet. Approximately 19% of North Carolina anglers participating in the CRFL Activity Survey indicated that they participated in flounder gigging. A sample frame of individuals participating in the flounder gig fishery will be created using the CRFL activity survey. Internet and mail surveys will be conducted to determine access areas, locations fished, and estimates of catch and effort.

Estimates of catch and participation from the recreational shellfish and crab fisheries will also be obtained through Internet and mail surveys. Recent FMPs have identified a need for this data as recreational harvest and effort estimates from this sector have been completely missing. The CRFL activity survey also records contact information from individuals involved with recreational shellfish (oyster, clam, and scallop) and crab harvest and indicates significant participation in recreational shellfish and crab harvesting activities.

Specialized surveys to evaluate participation in saltwater fishing activities not otherwise covered will be implemented based on management need.

#### Benefits:

Increased dockside sampling of coastal anglers improves the precision of catch estimates and obtains additional fish lengths needed for stock assessments. The initial target of 20,000 angler interviews was met and surpassed. During 2010 recreational agents conducted 21,677 angler interviews. The 2010 estimates revealed the best measures of precision recorded since NCDMF began participation in MRFSS.

Upper estuarine sampling for anadromous species provides information from inland and joint waters falling outside of the scope of MRIP and is necessary for the management of these species. In addition to providing a long-term database of effort, catch and size distribution of fish caught for stock assessment purposes, this data provides a means to evaluate enacted management strategies.

Beginning in 2010 four distinct on-going recreational mail surveys of licensed anglers have been conducted. Through these surveys estimates of recreational flounder gigging, shellfish harvest, and blue crab landings have been provided establishing a time series of catch and effort for these fisheries. Prior to the initiation of this project, information from these fisheries was not available to fisheries managers. The mail surveys have been well received with response rates of 50%. A total of 14,533 mail surveys have been conducted since 2010. To improve survey response NCDMF developed a web tool to allow anglers to respond to surveys online. Approximately 15% of survey respondents chose to respond using the online survey. In addition to functioning as a platform to respond to surveys, the web tool also provides an angler journal that can be used by individuals to report and catalogue information from their personal fishing trips.

During 2010 a local area network (LAN) server was installed to warehouse the various survey components collected and recorded through CAP. In addition to providing a secure location to house the recreational fishing data, the system has redundancies to ensure integrity of the data. Analysts are able to better share and evaluate program code through multiple user access to CAP data increasing the efficiency of completing requests for recreational fishing information by staff and the public.

Location:

Coastal and estuarine regions of North Carolina.

Major Products Produced:

Expected results include improvements in quality and coverage of information on recreational fisheries of North Carolina; increased availability of findings through a unified survey program and reporting mechanism; decreased process time between data collection and production of catch and effort estimates; and restoration of user and public confidence in angler surveys conducted in the coastal waters of North Carolina. The inability of MRIP to address specialized and emerging fisheries because of administrative obstacles is largely responsible for the fragmentation of recreational angler survey programs in North Carolina. Standardization and assemblage of the numerous recreational survey activities into a single cohesive program results in a more efficient and agile means to address specialized and emerging recreational fisheries.

The comprehensive recreational data collection program will contribute to the restoration and sustainability of North Carolina's marine resources. Healthy and sustained fishery resources will increase angler satisfaction and the economic potential of recreational fisheries in North Carolina

Lead NCDMF Personnel:

Doug Mumford, Biologist Supervisor, Washington  
Chris Wilson, Biologist II, Washington  
Don Hesselman, License & Statistics Section Chief, Morehead City

Year 1 Budget Justification:

Personnel

1 Marine Fisheries Statistician I	2,080 hours x \$16.99/hr. = \$ 35,337
1 Marine Fisheries Biologist I	2,080 hours x \$17.12/hr. = \$ 35,608
6 Marine Fisheries Tech. II	12,480 hours x \$13.78/hr. = \$171,972
1 Data Control Clerk IV	2,080 hours x \$13.91/hr. = \$ 28,941
3 Temp. M. F. Tech. II (11 month)	5,760 hours x \$14.36/hr. = \$ 82,740

Fringe Benefits - Fringe benefits include Social Security, retirement and health insurance. Personnel salaries and fringe have been budgeted to account for a three percent increase each year. Fringe benefits are calculated at a rate of 7.65% of salary for Social Security, 13.12% (first year) and 14.31% (years 2 through 5) of salary for retirement. An additional \$4,931 (first year) and \$5,192 (years 2 through 5) per employee is charged annually for health insurance. The temporary technician only has Social Security as fringe.

1 Marine Fisheries Statistician I	\$ 12,270
1 Marine Fisheries Biologist I	\$ 12,327
6 Marine Fisheries Tech. II	\$ 65,305
1 Data Control Clerk IV	\$ 10,942
3 Temp. M. F. Tech. II (11 month)	\$ 6,330

Travel - Technicians will be required to drive their personal vehicles from their residence to the survey sites. The current reimbursement rate is \$0.51 per mile for personal vehicle use.

Travel (coastal angler survey) 16,340 miles/year x \$0.51/mile x 6 techs	\$ 50,000
Travel (CSMA striped bass) 8,235 miles/year x \$0.51/mile x 3 techs	\$ 12,600

Supplies - Several long term surveys for this job will be conducted through mailings. This will require postage for survey mailings, reminders, and for business reply envelopes. Survey questionnaires and intercept forms will be printed using recycled copier paper. All mailed material will use pre-printed envelopes purchased from Correction Enterprises.

Postage (outgoing, business reply, stamps, permit fee)	\$ 36,100
Printing and supplies (questionnaires, reminders, field intercept forms)	\$ 5,900

Equipment - Technicians working under this job will require three sets of weigh scales, measuring boards, and clipboards with document storage to perform their primary task of identifying, weighing, and measuring all fish observed during the conduct of angler interviews.

Technicians currently working on this job have been supplied with laptops of varying age and condition. Laptops will be replaced when the product life cycle has been exceeded or the equipment fails. Technicians are provided all safety gear including rain gear, boots, and gloves. Shirts, caps, and magnetic vehicle signs that clearly identify them as an employee of the NCDMF are also provided.

Equipment (scales, measuring boards, clip boards, laptops, other gear)	\$ 8,000
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Other Costs - The Statistician I and the Biologist I will occupy office space in the Washington Regional Office (WARO) of DENR. The current rate for office space is \$8.28 per square foot.

Office Space Rent (469 sq ft x \$8.53)	\$ 4,000
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**TOTAL YEAR 1 (JOB 3) \$578,372**

Job 3 Amount for Five Years (Center 2F06):

Table 3. Coastal Angling Program Funds for Five Years.

**Fiscal Year**

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	2012-13*	2013-14	2014-15	2015-16	2016-17	5 Yr. Totals
Personnel	\$ 354,598	\$ 365,236	\$ 376,193	\$ 387,479	\$ 399,103	\$ 1,882,610
Fringe Benefits	\$ 107,174	\$ 114,739	\$ 116,779	\$ 118,880	\$ 121,045	\$ 578,616
Travel	\$ 62,600	\$ 62,600	\$ 62,600	\$ 62,600	\$ 62,600	\$ 313,000
Equipment	\$ 8,000	\$ 8,000	\$ 8,000	\$ 8,000	\$ 8,000	\$ 40,000
Supplies	\$ 42,000	\$ 42,000	\$ 42,000	\$ 42,000	\$ 42,000	\$ 210,000
Contractual	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Construction	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Other	\$ 4,000	\$ 4,000	\$ 4,000	\$ 4,000	\$ 4,000	\$ 20,000
<b>Total</b>	<b>\$ 578,372</b>	<b>\$ 596,575</b>	<b>\$ 609,572</b>	<b>\$ 622,959</b>	<b>\$ 636,748</b>	<b>\$ 3,044,226</b>

\* Each subsequent year beyond year 1 assumes a 3% annual legislative salary increase.

#### **JOB 4**

Title: Minimizing Habitat Impacts

Objectives:

To improve the ability of NCDMF to minimize habitat impacts through timely and quality review and commenting on environmental permits in coastal counties.

To track and assess habitat impacts from permitted development over time.

To provide support for redrafting and implementation of the NC Coastal Habitat Protection Plan (CHPP).

Procedures:

Establish two professional habitat alteration permit review staff to enhance permit review. These positions would be classified as Marine Biologist II (grade 70). One position will be responsible for review of permit applications from the Virginia line to the Neuse River. The other position will be responsible for review of permit applications from the Neuse River to the South Carolina line. Projects within the 20 Coastal Area Management Act (CAMA) counties and 19 additional counties with rivers and streams draining to coastal waters will be reviewed. Documents to review include Division of Coastal Management (DCM) major permits, Division of Water Quality (DWQ) 401 certifications and National Pollution Discharge Elimination permits, Division of Land Resources (DLR) Mining Permits, Department of Transportation (DOT) projects and proposed mitigation, Environmental Assessments (EA) and Environmental Impact Statements (EIS) from various state and federal agencies, and U.S. Army Corps of Engineers (COE) Public Notices.

The NCDMF and the WRC are specifically authorized by law [(GS) 113-131(b)] to “comment on and object to permit applications submitted to State agencies which may affect the public trust resources in the land and water areas ... to conserve and protect the public trust rights in such land and water areas.” In addition, the Fisheries Reform Act of 1997 states that the legislative goal of the CHPP is to enhance the coastal fisheries associated with each habitat. Two CHPP goals to achieve this are 1) Improve effectiveness of existing rules and programs protecting coastal fish habitats; and 2) Enhance habitat and protect it from physical impacts. Adequate review of permit applications and coordination among permitting and resource agencies is the primary mechanism used in North Carolina to minimize and avoid habitat impacts and enforce existing habitat protection rules. Until 2009, NCDMF review of these permit applications was an additional job responsibility of fishery biologist supervisors in four regional offices, who also were responsible for fisheries management field sampling, data analysis, reporting requirements and employee supervision.

Benefits:



and participate in interagency coordination meetings. Monies for lodging for occasional overnight travel is also included.

Rent/lease motor vehicle	\$10,731
Lodging (in-state)	\$ 1,700
Meals (in-state)	\$ 700

Supplies - Monies needed for office lease space charges, telephone costs, computer equipment, general office supplies, data processing supplies books, postage and printing expenses.

Office and data processing supplies, telephone, postage, printing	\$ 4,600
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Other Costs - Monies needed for office lease space for the two positions located in a NCDMF or DENR Regional Office in the northern and southern coast.

Office space	\$ 8,000
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**TOTAL YEAR 1 (JOB 4) \$ 132,489**

Job 4 Amount for Five Years (Center 2F09):

Table 4. Minimizing Habitat Impacts Funds for Five Years.

	Fiscal Year					5 Yr. Totals
	2012-13*	2013-14	2014-15	2015-16	2016-17	
Personnel	\$ 80,232	\$ 82,639	\$ 85,118	\$ 87,672	\$ 90,302	\$ 425,963
Fringe Benefits	\$ 26,526	\$ 28,532	\$ 29,076	\$ 29,637	\$ 30,214	\$ 143,985
Travel	\$ 13,131	\$ 13,131	\$ 13,131	\$ 13,131	\$ 13,131	\$ 65,655
Equipment	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Supplies	\$ 4,600	\$ 4,600	\$ 4,600	\$ 4,600	\$ 4,600	\$ 23,000
Contractual	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Construction	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Other	\$ 8,000	\$ 8,000	\$ 8,000	\$ 8,000	\$ 8,000	\$ 40,000
<b>Total</b>	<b>\$ 132,489</b>	<b>\$ 136,901</b>	<b>\$ 139,925</b>	<b>\$ 143,039</b>	<b>\$ 146,247</b>	<b>\$ 698,603</b>

\* Each subsequent year beyond year 1 assumes a 3% annual legislative salary increase.

**Total Amount for Five Years:**

**Table 5. Total Amount of CRFL Funds for Five Years for Jobs 1 – 4.**

	Fiscal Year					Total
	2012-13*	2013-14	2014-15	2015-16	2016-17	
<b>Jobs 1-4</b>						
<b>Totals</b>	<b>\$1,707,590</b>	<b>\$1,767,642</b>	<b>\$1,820,649</b>	<b>\$1,798,647</b>	<b>\$1,836,665</b>	<b>\$8,931,194</b>

\* Each subsequent year beyond year 1 assumes a 3% annual legislative salary increase.

North Carolina  
Division of Marine Fisheries  
Legislatively Mandated Jobs From  
The Marine Resources Fund

July 1, 2012 – June 30, 2017

## Legislatively Mandated CRFL Jobs

The following two jobs were expressly mandated through legislation and therefore should not be subject to the approval process of the two commissions. In spite of the legislative mandate, these jobs do not represent a diversion of the funds as the Marine Fisheries Director supports the use of these funds to manage North Carolina's Marine Recreational Fishing Program. However, CRFL funds need to be obligated to pay for these jobs.

### **JOB A**

Title: Division Infrastructure Support

Objective:

To provide the NCDMF the necessary technical support and infrastructure to ensure better data on recreational catch and effort.

Procedures:

Senate Bill 1126 (Ratified Edition) was signed into law September 2005 and persons who fish recreationally in North Carolina for finfish in coastal fishing waters to obtain a CRFL, effective January 1, 2007. The legislation dramatically expanded the data collection, data management and licensing requirements for the NCDMF from approximately 6,300 commercial fishermen to an additional projected 1.4 million recreational anglers (Senate Bill 1126 Fiscal Impact Report). In House Bill 831, the General Assembly provided one-time appropriations for an implementation plan to be approved in April 2005. The tremendous increase in the essential license sales of the NCDMF could not be met by the one-time appropriation.

This new license greatly increases the amount of license sales, which in turn results in an increased need for technological, and customer sales support. These funds will be used to retain positions to provide direct customer support and sales, data entry, and to support the development and implementation phase of the license, including database administration and overall data administration and any augmentation to the licenses, as required.

To initially meet this need, the 2006 General Assembly approved \$375,000 as a one-time appropriation and then transferred the budget to the revenues deposited in the Marine Resources Fund. Funds will be used to maintain: (1) a Processing Assistant IV, two six-month Temporary Processing Assistant IVs to meet the demands of increased license sales and customer support, and (2) a Business Technology Applications Analyst to provide the necessary technological support to maintain data integrity and provide data access. These funds will also be used to provide additional space for customers and staff, computers and infrastructure to support the positions.

The CRFL opened a new door in North Carolina by providing a distinct list of recreational anglers which was not available before. This allows NCDMF Recreational Survey biologists the opportunity to more accurately estimate angler participation, effort and harvest. All CRFL sales data obtained by the NCDMF and sales data downloaded from the NC Wildlife Resource Commission's (WRC) ALVIN system will be accessed, edited and used by the supported positions to perform analysis of species catch and economic impacts to support the NC Fisheries Reform Act of 1997 requirement of producing fisheries management plans. These data also allow the NCDMF to perform detailed and accurate analyses of recreational catch and effort as mandated by the federal Magnuson-Stevens Fisheries Act and to coordinate with federal agencies on other federal initiatives such a national database, as required by the Magnuson-Stevens Act, of recreational angles and the Marine Recreational Information Program.

The Business Technology Application Analyst will be involved in the maintenance and support of existing systems. In addition this position will be involved in the development of applications to incorporate new data as required. The maintenance and support of the applications and centralized database systems are critical



to incorporating new data and provide access to all data required by fisheries analysts. Centralized database systems for the Fisheries Information Network (FIN) and the Fisheries Information Management and Support System (FIMSS) are comprised of the following types of data:

- CRFL Sales for NCDMF-issued products
- CRFL Violations and violations of other NCDMF License and Permit laws
- ALVIN-replicated database of CRFL products issued by the WRC including WRC vessel registration, and other data
- Additional NCDMF Licenses and Permits, and critical data used for the management of the Marine Resources
- Data collected by biologists in independent and dependent surveys

Funds will assist in the recurring costs needed to maintain the server infrastructure that supports applications, databases, and documents. In addition, NCDMF web/application, database, and file servers will require refreshing during this 5 year period. Funds will assist with one-time implementation costs. Additionally, the current legacy applications will be re-written in .NET on an enterprise system planned for implementation using the server farm environment at WDC (OITS Western Data Center) and EDC (OITS Eastern Data Center). There will be a window of time during the 5 year plan where servers at NCDMF HQ and WDC will coexist while the legacy systems at NCDMF HQ are phased out. An increase in the monthly recurring operational costs is anticipated during the period where the legacy system is phased out and applications are implemented on the new .NET Enterprise system.

#### Benefits:

Since January 1, 2007, nearly two million CRFLs have been sold with over 12,000 sold at NCDMF license offices. NCDMF license offices have been shown to be an effective outlet as customers can also register vessels, obtain bag and size limits, educational materials and other items of interest to recreational anglers.

Maintaining license offices at traditional locations ensure customers have continued access to these materials. Unfortunately, in June 2011, the NC legislature eliminated the state appropriated license clerk position at the NCDMF Regional Office in Washington NC and closed the Columbia office. Although these actions have reduced customer services, we will be able to reopen the Washington license office using funds from this job by transferring the funded position from Manteo to Washington.

Below are the CRFL products implemented since the initial sale of the CRFL in January, 2007:

- Ocean Fishing Pier Blanket Coastal Recreational Fishing License
- For Hire Blanket Coastal Recreational Fishing License
- Coastal Recreational Fishing License Exemption Permit
- Blocks of 10 Ten Day Coastal Recreational Fishing Licenses

Other enhancements implemented in FIN and ALVIN-replicated databases and applications:

- FIN enhancement providing search and display of CRFL license data via the ALVIN-replicated database
- CRFL sales report summaries
- Direct access to CRFL license data to fisheries analysts via the FIN and ALVIN-replicated database

#### Location:

Morehead City and Washington, NC

#### Major Products Produced:

Improved customer service will include less wait time customers endure when purchasing a license and less distance travelled to interact with NCDMF license staff. These funds will also provide the resources to ensure better data on recreational catch and effort.

Lead NCDMF Personnel:

Nancy Francis – Chief, Information Technology, Morehead City  
 Don Hesselman - Chief, License and Statistics, Morehead City

Year 1 Budget Justification:

Personnel

1 Processing Assistant IV	2,080 hours x \$13.28/hr. = \$27,615
1 Bus. & Tech. App. Analyst	2,080 hours x \$29.69/hr. = \$61,753
1 Temp. Proc. Assist. (6 month)	1,040 hours x \$12.26/hr. = \$12,750
1 Temp. Proc. Assist. (6 month)	1,040 hours x \$12.26/hr. = \$12,750

Fringe Benefits - Fringe benefits include Social Security, retirement and health insurance. Fringe benefits are calculated at the rate of 7.65% of salary for Social Security, 13.12% (first year) and 14.31% (years 2 through 5) of salary for retirement. An additional \$4,931 (first year) and \$5,192 (years 2 through 5) per employee is charged annually for health insurance. The two Temporary Processing Assistant positions will only have Social Security as a fringe.

1 Processing Assistant IV	\$10,667
1 Bus. & Tech. App. Analyst	\$17,757
2 – Temp. Proc. Assists. (6 month)	\$ 1,951

Travel - The budget includes monies to be used for in-state transportation, meals and lodging for any overnight travel. In-state transportation includes the use of two state-issued vehicles. This also includes employee education expenses for required training.

Lodging (in-state)	\$60 x 15 days x 2 personnel	\$ 1,800
Meals (in-state)	\$35 x 15 days x 2 personnel	\$ 1,050
Use of state vehicles	5,882 miles/year x \$0.34/mile	\$ 2,000
	5,882 miles/year x \$0.34/mile	\$ 2,000
Employee Education		\$ 200

Supplies - General office supplies, postage, and renting two copiers to support the positions funded by the. Also, supplies are needed for the computers/printers as well as repairs on computers/printers for the two full-time and two temporary positions funded by this job.

General Office Supplies		\$ 5,620
Postage		\$ 2,000
Copier Rental	\$625/mth. x 12 months	\$ 7,500
	\$625/mth. x 12 months	\$ 7,500
Data Processing Supplies		\$ 500
Computer/printer Repairs		\$ 1,000

Utilities - During this budget period, rental charges will be incurred for office space used by the Business & Technology Applications Analyst located in Raleigh, and the Processing Assistant position located in Washington, NC. Funds will also need to cover the overhead of the facilities where staff offices are located. This includes services for electrical, telephone, water and sewer as well as insurance coverage for the contents of the building. The office space lease does not include the cleaning of the building so funds are also needed for this expense.

Office Space Rent	1 office space @ \$4,500	\$ 4,500
	1 office space @ \$4,500	\$ 4,500
	2 office spaces for \$2,200	\$ 2,200
Electrical Service		\$ 8,000
Telephone & Cellular Service		\$ 6,680
Water and Sewer Service		\$ 1,000
Insurance		\$ 1,500
Cleaning Contract		\$ 1,000

Other Costs -The budget includes funds to procure needed office furniture and equipment for the positions supported by the job. Each of the four positions will require the purchase and replacement costs of computer equipment and printers. The telecommunication data charges and Local Area Network service charges are required to support the computer infrastructure of the database administration functions. Administrative Services will be required for specific time-limited projects needed to improve infrastructure.

Office Equipment	\$ 300
Office Furniture	\$ 14,000
Other Equipment	\$ 5,000
Computer Equipment	\$ 29,000
Computer Software	\$ 600
Telecommunication Data Charges	\$ 53,200
Local Area Network Service Charge	\$ 24,000
Administrative Services	\$ 59,375

**TOTAL YEAR 1 (JOB A) \$391,267**

Job A Amount for Five Years (Centers 2145 1551 and 2145 1552):

Table 6. Division Infrastructure Support Funds for Five Years.

	Fiscal Year					
	2012-13*	2013-14	2014-15	2015-16	2016-17	5 Yr. Totals
Personnel	\$ 114,868	\$ 118,314	\$ 121,863	\$ 125,519	\$ 129,284	\$ 609,848
Fringe Benefits	\$ 30,374	\$ 32,607	\$ 33,274	\$ 33,961	\$ 34,668	\$ 164,884
Travel	\$ 7,050	\$ 7,050	\$ 7,050	\$ 7,050	\$ 7,050	\$ 35,250
Equipment	\$ 48,900	\$ 48,900	\$ 48,900	\$ 48,900	\$ 48,900	\$ 244,500
Supplies	\$ 24,120	\$ 24,120	\$ 24,120	\$ 24,120	\$ 24,120	\$ 120,600
Contractual	\$ 59,375	\$ 59,375	\$ 59,375	\$ 59,375	\$ 59,375	\$ 296,875
Construction	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Other	\$ 106,580	\$ 106,580	\$ 106,580	\$ 106,580	\$ 106,580	\$ 532,900
Total	\$ 391,267	\$ 396,946	\$ 401,162	\$ 405,504	\$ 409,977	\$ 2,004,857

\* Each subsequent year beyond year 1 assumes a 3% annual legislative salary increase.

## **JOB B**

Title: Senior Stock Assessment Scientist

Objective:

To produce peer reviewed quantitative stock assessments in a timely manner for inclusion in state and federal fishery management plans as well as for use in daily management.

Background:

The 2007 General Assembly (HB 1473) appropriated funds for a NCDMF Stock Assessment Scientist to head the NCDMF's efforts at conducting stock assessments and mandated that the money come from CRFL funds. Stock assessments are conducted for state FMPs as well as Atlantic States Marine Fisheries Commission (ASMFC) and National Marine Fisheries Service (NMFS) Council Plans, which are of increasing complexity and importance. Stock assessments are the first step in state-mandated FMPs and help determine the management measures necessary to improve or sustain fish stocks. The NCDMF will seek to hire and retain an experienced Stock Assessment Scientist at a salary that will attract a highly qualified individual to direct the NCDMF's stock assessment efforts.

Benefits:

The NCDMF was able to hire a Senior Stock Assessment Scientist in January 2011. One of the primary tasks this employee has been working on is a comprehensive Stock Assessment SOP to standardize the way in which all aspects of stock assessments are prepared for, conducted and presented within the NCDMF. This employee has worked on multiple stock assessments while training staff on assessing species using indices to determine relative condition of the stock. This employee has also maintained the NCDMF involvement with Atlantic States Marine Fisheries Commission River Herring stock assessment subcommittee and chairs the American Eel Assessment Committee. The Senior Stock Assessment Scientist will also assist NCDMF staff with the ASMFC American Shad Sustainable Fishing Plan for NC. Finally, this employee has been a great asset in advising and teaching staff about analytical issues that arise in their work.

Location:

Morehead City, NC

Major Product Produced:

The Stock Assessment Scientist conducts assessments of important recreational fish stocks in North Carolina, supervises and provides technical guidance to the existing Stock Assessment Scientists and biological staff, presents assessment results to the MFC, ASMFC and federal council boards and committees. The position serves as the senior North Carolina assessment person and represents the Division of Marine Fisheries in MFC, ASMFC and NMFS councils, species boards and assessment committees. The Stock Assessment Scientist performs assessments, supervises two other stock assessment biologists, and advises the Fisheries Management Chief and Director on stock matters.

Lead NCDMF Personnel:

Laura Lee, Senior Stock Assessment Scientist

Year 1 Budget Justification:

Personnel

1 Stock Assessment Scientist 2,080 hours x \$38.89/hr. = \$80,901

Fringe Benefits - Fringe benefits include Social Security, retirement and health insurance. Personnel salaries and fringe have been budgeted to account for a three percent increase each year. Fringe benefits are calculated at a rate of 7.65% of salary for Social Security, 13.12% (first year) and 14.31% (years 2 through 5) of salary for retirement. An additional \$4,931 (first year) and \$5,192 (years 2 through 5) per employee is charged annually for health insurance.

1 Stock Assessment Scientist \$21,734

Travel - The budget includes monies to be used for in-state transportation and lodging for any overnight travel.

Lodging (in-state) \$ 1,252  
 Meals (in-state) \$ 800  
 Transportation-Ground (in-state) \$ 1,200

Supplies - General office furniture, computer equipment, printing and duplicating and telephone costs are included in this item.

Office and Data Processing Supplies \$ 9,010

Other Costs - Charges by the Department of Environment and Natural Resources for office rent.

Office Space Rent \$ 3,600

**TOTAL YEAR 1 (JOB B) \$118,497**

Job B Amount for Five Years (Center 2144):

Table 7. Senior Stock Assessment Scientist Funds for Five Years.

	Fiscal Year					5 Yr. Totals
	2012-13*	2013-14	2014-15	2015-16	2016-17	
Personnel	\$ 80,901	\$ 83,328	\$ 85,828	\$ 88,403	\$ 91,055	\$ 429,514
Fringe Benefits	\$ 21,734	\$ 23,491	\$ 24,040	\$ 24,605	\$ 25,188	\$ 119,058
Travel	\$ 3,252	\$ 3,252	\$ 3,252	\$ 3,252	\$ 3,252	\$ 16,260
Equipment	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Supplies	\$ 9,010	\$ 9,010	\$ 9,010	\$ 9,010	\$ 9,010	\$ 45,050
Contractual	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Construction	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Other	\$ 3,600	\$ 3,600	\$ 3,600	\$ 3,600	\$ 3,600	\$ 18,000
<b>Total</b>	<b>\$ 118,497</b>	<b>\$ 122,681</b>	<b>\$ 125,730</b>	<b>\$ 128,870</b>	<b>\$ 132,104</b>	<b>\$ 627,882</b>

\* Each subsequent year beyond year 1 assumes a 3% annual legislative salary increase.

**Total Amount for Five Years:**

Table 8. Total Amount of Legislatively Mandated CRFL Funds for Five Years for Jobs A and B.

	Fiscal Year					Total
	2012-13*	2013-14	2014-15	2015-16	2016-17	
<b>Jobs A and B Totals</b>	<b>\$ 509,764</b>	<b>\$ 519,627</b>	<b>\$ 526,892</b>	<b>\$ 534,374</b>	<b>\$ 542,082</b>	<b>\$2,632,740</b>

\* Each subsequent year beyond year 1 assumes a 3% annual legislative salary increase.

**Grand Total Amount for Five Years:**

**Table 9. Total Amount of CRFL Funds for Five Years for Jobs 1 – 4, A, and B.**

	<b>Fiscal Year</b>					<b>Grand Total</b>
	<b>2012-13*</b>	<b>2013-14</b>	<b>2014-15</b>	<b>2015-16</b>	<b>2016-17</b>	
<b>Jobs 1-4 Totals</b>	<b>\$1,707,590</b>	<b>\$1,767,642</b>	<b>\$1,820,649</b>	<b>\$1,798,647</b>	<b>\$1,836,665</b>	<b>\$ 8,931,194</b>
<b>Jobs A and B Totals</b>	<b>\$ 509,764</b>	<b>\$ 519,627</b>	<b>\$ 526,892</b>	<b>\$ 534,374</b>	<b>\$ 542,082</b>	<b>\$ 2,632,740</b>
<b>Grand Total</b>	<b>\$2,217,354</b>	<b>\$2,287,268</b>	<b>\$2,347,541</b>	<b>\$2,333,021</b>	<b>\$2,378,746</b>	<b>\$11,563,934</b>

\* Each subsequent year beyond year 1 assumes a 3% annual legislative salary increase.