

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



Plan Years  
July 1, 2017 – June 30, 2022

January 2017

## TABLE OF CONTENTS

	<u>Page</u>
1. List of Tables	2
2. Plan Period	3
3. Amount Jobs 1 – 5 (Annual Budget totals and 5 Year Total)	3
4. Plan Summary	3
5. Background / Need for Marine Resources Fund Funding	3
6. Plan Goal	4
7. Statement of Work	5
JOB 1 Coastal Recreational Fishing License Sales and Data Support	5
JOB 2 Fisheries Independent Assessment Program	10
JOB 3 Coastal Angling Program	15
JOB 4 Minimizing Fisheries Related Habitat Impacts	20
JOB 5 Marine Patrol Officers and Temporary Tele Communicator	25
JOB A Division Infrastructure Support	32
JOB B Senior Stock Assessment Scientist	37

## List of Tables

	<u>Page</u>
Table 1. Coastal Recreational Fishing License Sales and Data Support Funds for Five Years. ....	10
Table 2. Fisheries Independent Assessment Program Funds for Five Years.....	15
Table 3. Coastal Angling Program Funds for Five Years.....	21
Table 4. Minimizing Habitat Impacts Funds for Five Years. ....	25
Table 5. 2013-2015 Marine Patrol Inspections - Statewide.....	27
Table 6. Marine Patrol Officers and Temporary Tele Communicator Positions Funds for Five Year....	30
Table 7. Total Amount of CRFL Funds for Five Years for Jobs 1 – 5.....	30
Table 8. Division Infrastructure Support Funds for Five Years. ....	37
Table 9. Senior Stock Assessment Scientist Funds for Five Years. ....	39
Table 10. Total Amount of Legislatively Mandated CRFL Funds for Five Years for Jobs A and B.....	39
Table 11. Total Amount of CRFL Funds for Five Years for Jobs 1 – 5, A and B.....	40

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

1. Plan Period: From: 1 July 2017 To: 30 June 2022

2. Amount Jobs 1 - 5:

Year 1 (1 July 2017 – 30 June 2018) - \$2,387,617

Year 2 (1 July 2018 – 30 June 2019) - \$2,335,113

Year 3 (1 July 2019 – 30 June 2020) - \$2,392,037

Year 4 (1 July 2020 – 30 June 2021) - \$2,324,345

Year 5 (1 July 2021 – 30 June 2022) - \$2,385,946

5 Year Total = \$11,825,058

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 NCDMF 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.

Furthermore, the NCDMF has requested and received approval for both the Marine Patrol Officer and Temporary Tele communicator positions with the initial funding year of FY15. These are long term needs by the NCDMF that have now been incorporated into this plan as Job 5 to better reflect the ongoing need for Marine Patrol.

The NCDMF 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.

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. 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, enforcement of management measures, 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:

1. To improve the North Carolina Division of Marine Fisheries (NCDMF) license sales and customer service capability, including improving internal and external license sales, enhancements, maintenance, supervision, etc. at NCDMF license sales offices.
2. 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 North Carolina Fisheries Reform Act (FRA).
3. 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 Coastal Recreational Fishing License (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.

NCDMF administers licenses, support technical infrastructure, generation of license reports, and augmentation of licenses, including licenses only sold through NCDMF offices with these funds. Funds are used to fund a CRFL Project Coordinator 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.

The NCDMF is implementing a Business Process Management (BPM) product to upgrade the legacy database system. This product functions in the cloud and will connect directly to the existing

database where the data is maintained. 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 licenses
- CRFL Violations and violations of other NCDMF License and Permit laws
- Business requirements for CRFL sales through the Wildlife Resources Commission (WRC) ALVIN system, including new, modifications, quality assurance, data feeds, etc.
- 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 and enforcement of marine resources

The NCDMF 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.

The NCDMF License Office, Information Technology and Administrative Services sections supported by these funds are only part of a total program budget funded by commercial receipts, state appropriations, besides the recreational revenues. The License Office has funding totaling \$694,099 with 10 permanent and two temporary positions located in the five NCDMF offices. The Information Technology section has funding totaling \$1,261,797 with seven permanent positions supporting the NCDMF's computer infrastructure. Then Administrative Services has budgeted \$200,613 to cover headquarters utilities and the Atlantic States Marine Fisheries Commission annual dues.

#### Benefits:

This job funds two staff positions within the License and Statistics section; one clerk and one supervisor. The license positions are key to providing enhanced customer service in the Manteo and Morehead City license offices and will allow us to continue 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 NCDMF.

This job also funds the CRFL Project Coordinator located in the Administrative Services Office. This position serves as the liaison between the NCDMF and those receiving funding through CRFL receipts. The NCDMF has issued nine Request for Proposals (RFP) to fund projects identified in the CRFL Strategic Plan. There have been 288 proposals received over the nine 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 through NCDMF only license sales outlets through the NCDMF Fisheries Information Network since the initial sale of the CRFL in January, 2007:

- Blanket For-Hire Captain's Coastal Recreational Fishing License
- Non-Blanket For-Hire Vessel Coastal Recreational Fishing License
- Blanket For-Hire Vessel 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
- Verification of recreational licenses by Marine Patrol via secured Internet
- 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 and Manteo, 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. Enhanced recreational license information as types of licenses are required to be changed over time either to technological advancements, quality assurance, or modification or new license products. 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:

Stephanie McInerney - Chief, License and Statistics, Morehead City  
Suzanne R. Guthrie - Chief, Administrative Services, Morehead City  
Al Schmidt - Chief, Information Technology, Morehead City

Year 1 Budget Justification:

Personnel

1 Processing Unit Supervisor V	2,080 hours x \$14.66/hr. = \$30,502
1 Processing Assistant IV	2,080 hours x \$14.85/hr. = \$30,892
1 CRFL Project Coordinator	2,080 hours x \$21.65 /hr.= \$45,031

Fringe Benefits – Fringe benefits include Social Security, retirement, health insurance and longevity (if applicable). 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, 16.67% (first year) with an additional 1% added each year (compounded) for years two through five of salary for retirement. An additional \$ 5,580 (first year) with an additional 2% added each year (compounded) for years two through five per employee is charged annually for health insurance.

1 Processing Unit Supervisor V	\$ 12,999
1 Processing Assistant IV	\$ 13,669
1 CRFL Project Coordinator	\$ 16,532

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 NCDMF 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 three positions funded by this job. This will also provide the gasoline, diesel fuel and materials for the barge operations.

General Office Supplies		\$ 6,589
Postage		\$ 12,900
Copier Rental	\$583/month x 12 months	\$ 6,996
Data Processing Supplies		\$ 3,510
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 CRFL Project Coordinator located in Morehead City, NC, and the Processing Assistant position located in Manteo, 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 @ \$ 7,800	\$ 7,800
	2 office spaces @ \$ 8,000	\$16,000
	Morehead City Office space	\$35,000
Electrical Service		\$11,000
Server Maintenance		\$65,000
Natural Gas/Propane		\$16,000
Telephone & Cellular Service		\$11,100
Water and Sewer Service		\$ 3,500

Equipment – Each of the three positions will require the purchase and replacement costs of computer equipment and printers. 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

Other Costs – The telecommunication data charges and Local Area Network service charges are required to support the computer infrastructure of the database administration functions. The NCDMF pays the Atlantic States Marine Fisheries Commission over \$51,363 annually (in the past 100% was paid from commercial license receipts) for dues as required by legislation (G.S. 113-252). More than half of the species managed by NCDMF are recreational species. Therefore, the NCDMF will pay \$20,000 of the dues from this job budget.

Computer Software and Maintenance	\$ 37,825
Telecommunication Data Charges	\$ 240
Local Area Network Service Charge	\$ 1,300
Atlantic States Marine Fisheries Commission Dues	\$ 20,000
<b>TOTAL YEAR 1 (JOB 1)</b>	<b>\$448,516</b>

Job 1 Amount for Five Years (Centers 2142 1560; 2142 1561; 2142 1562; and 2147 1558):

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

	<b>Fiscal Year</b>					5 Yr. Totals
	2017-18*	2018-19	2019-20	2020-21	2021-22	
Personnel	\$ 106,425	\$ 109,617	\$ 112,906	\$ 116,293	\$ 119,782	\$ 565,023
Fringe Benefits	\$ 43,200	\$ 45,429	\$ 47,755	\$ 50,504	\$ 53,708	\$ 240,596
Travel	\$ 6,300	\$ 6,300	\$ 6,300	\$ 6,300	\$ 6,300	\$ 31,500
Equipment	\$ 14,331	\$ 14,331	\$ 14,331	\$ 14,331	\$ 14,331	\$ 71,655
Utilities	\$ 165,400	\$ 165,400	\$ 165,400	\$ 165,400	\$ 165,400	\$ 827,000
Supplies	\$ 53,495	\$ 53,495	\$ 53,495	\$ 53,495	\$ 53,495	\$ 267,475
Contractual	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Other	\$ 59,365	\$ 59,365	\$ 59,365	\$ 59,365	\$ 59,365	\$ 296,825
<b>Total</b>	<b>\$ 448,516</b>	<b>\$ 453,937</b>	<b>\$ 459,552</b>	<b>\$ 465,688</b>	<b>\$ 472,381</b>	<b>\$ 2,300,074</b>

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

## **JOB 2**

Title: Fisheries Independent Assessment Program

Objectives:

The goal is to maintain long-term fisheries independent surveys that extend current data on Catch per Unit of Effort (CPUE), catch composition, abundance, size, age, maturity and mortality in estuarine waters for important recreational fish species. Maintaining the integrity of and adding to the existing time series will provide for improved stock assessments and, through more effective Fishery Management Plans (FMP), the long-term viability of the recreational fisheries.

The Fisheries Reform Act (FRA) established a process requiring preparation of 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 North Carolina Division of Marine Fisheries' (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 the FMPs. To meet the Job goal, specific objectives include:

1. To calculate annual indices of abundance in North Carolina estuarine waters for the following target species: red drum (*Sciaenops ocellatus*), southern flounder (*Paralichthys lethostigma*), spotted seatrout (*Cynoscion nebulosus*), weakfish (*Cynoscion regalis*), bluefish (*Pomatomus saltatrix*), spot (*Leiostomus xanthurus*), Atlantic croaker (*Micropogonias undulatus*), southern kingfish (*Menticirrhus americanus*) Spanish mackerel (*Scomberomorus maculatus*), American shad (*Alosa sapidissima*), black drum (*Pogonias cromis*), sheepshead (*Archosargus probatocephalus*), and striped bass (*Morone saxatilis*). Catch per unit effort

(CPUE) data, from fishery-independent surveys that standardize effort, provide an unbiased relative index of abundance to track population trends.

2. To provide samples for age, growth, sex and maturity in order to determine age structure, sex ratios, and relative cohort size for the target species.
3. To provide supplementary samples for ongoing tagging, genetic, and reproductive studies.
4. To characterize habitat use and species distribution for targets species in estuarine waters.

Procedures:

Fishery-independent data are collected methodically in a manner designed to provide a measure of relative fish abundance where biases are minimized. On the contrary, fishery dependent data from either the recreational or commercial sector tend to provide uncertain estimates of relative abundance and their use in this fashion is not preferred. This bias comes from the evolving methodology employed by these sectors. Dependent fisheries target specific species in areas where fish densities are highest and can therefore maintain consistent catch rates even as fish stocks decline. Changes in methods (hook size, bait type, etc.) are common and fishing time and locale of fishing is not standardized. Skill also plays a key factor in fishing success. These and many other biases inherent to dependent data (targeting for size, species, changes to gear selectivity, changes in vessels and gear over time, non-reporting, seasonal closures, size and bag limit restrictions, and fluctuations in market value) make dependent data largely unreliable as an unbiased estimator of changes in populations size or age structure.

Statistically designed surveys are critical to sound fishery management decisions regarding trends in population size. Good scientific design will provide a representative sample of the overall population by providing an equal opportunity for all segments of the population (sampling universe) to be sampled. Over time, the proportion (number and or size) of fish in the samples should approximate what is in the population. This study employs a stratified-random sampling design. Strata are based on area and/or water depth.

The five river systems currently sampled include 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 ensure samples are evenly distributed throughout each system (area and depth). The Pamlico River is divided into three areas: upper, middle, and lower. The Pungo River serves as one area due to its smaller size. The Neuse River is divided into four areas: upper, upper-middle, lower-middle, and lower. The New River is divided into two areas: upper and lower and the Cape Fear River is considered one area. Additionally, the Cape Fear River is only sampled in shallow strata due to strong flow conditions that impact the catchability of the fishing gear in 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 gill nets consisting of 30-yard segments of 3, 3½, 4, 4½, 5, 5½, 6, and 6½ inch stretched mesh webbing (240 total yards of gill net). An array of nets is employed, to reduce gear selectivity bias and enable the gear to catch multiple species over a wide range of sizes. 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 of 12 hours. All nets are floating and fish the entire water column. In the New and Cape Fear rivers soak times are reduced to four hours from April through September and deployed within an hour of sunrise (sampling was modified in July 2008). This action was taken to minimize interactions with endangered and threatened sea turtles.

Physical and environmental conditions, including surface and bottom water temperature (°C), salinity (ppt), dissolved oxygen (mg/L), pH, turbidity, 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 oxyrinchus oxyrinchus*), striped bass, southern flounder, red drum, and sea turtles captured in good condition are tagged and released.

Beginning in the fall of 2017, sampling in the NCDMF's southern district will be expanded to areas from West Bay/Core Sound through the White Oak River. Sampling in these areas will follow the same sample design as in other areas described above. Adding these areas to the Fishery Independent Assessment Program (FIA) will fill in a key gap in adult finfish monitoring within the state. Improved data and information will be gained for several recreationally important species including southern flounder, red drum, spotted seatrout, and weakfish.

#### Benefits:

The FIA is one of the most used fishery-independent surveys in North Carolina. The FIA survey was initiated in 2003 in the Pamlico, Pungo, and Neuse rivers, expanded in 2008 to the Cape Fear and New rivers, and in 2017 will expand to areas from West Bay/Core Sound through the White Oak River. Fishery-independent data are collected from catches from scientific resource surveys while fishery-dependent data are collected directly from the commercial or recreational catches. Fishery-independent data are collected through various types of resource surveys employing a variety of gears common to fisheries science (multiple-mesh gill nets, trawls, seines etc.). These surveys are designed to sample in an objective and consistent methodology using the same gear and techniques to provide fishery-independent indices of abundance where the changes in catch are due to changes in the abundance of a population of fish and not due to changes in methodology (as is common in fishery-dependent data). Consequently, sampling is conducted over a wide range of habitats and conditions and not necessarily done only in locations where a species is thought to be most abundant

at the time the gear is deployed. Collecting information on the population in this manner over time allows for an index that reflects the availability of the species in the areas sampled. The value of an independent survey increases with the number years sampled as the survey becomes a reflection of the long-term trends in abundance for the population in the area sampled. Fishery-independent data are not influenced by external factors (such as management measures or socioeconomics). Fishery independent surveys provide the only measure of stock condition where trends over time can be assumed to be due to population changes.

FIA survey data were and will be used in several state and federal fishery management plans and stock assessments for recreationally important species. These include (but are not limited to): striped bass, spotted seatrout, red drum, southern flounder, bluefish, black 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, and southern flounder. The aim of these programs is to describe migration patterns, mortality rates, and define stock structure and management units for state FMPs. The FIA survey data has also supported other Coastal Recreational Fishing License (CRFL)-funded projects. Some recent projects include: 1) Origin of central southern management area striped bass using otolith chemistry and recommendations for fishery management (2011-2013), 2) Diet composition of predatory fishes in North Carolina (2012-2013), 3) Multispecies tagging program (2014-present), 4) N.C. red drum cooperative tagging program , 5) Validating and updating maturation schedules for better management of North Carolina fisheries (2016-2019), and 6) Maturation and fecundity of the central southern management area striped bass stock (2014).

This survey provides important matching funds for a sister fishery-independent survey that is conducted along both the mainland and outer-banks shorelines of Pamlico Sound as part of a federal Sport Fish Restoration project. Sport Fish Restoration funds support several fishery-independent and fishery-dependent surveys and support staff working on those surveys. In total, \$1,219,484 in Sport Fish Restoration funds are used to support other surveys. CRFL funds from this survey are used to cover the 25% state-match requirement for the Sportfish Restoration project. The two gill net surveys together are identified as Program 915 and the NCDMF cannot support or fully maximize the benefits of one survey without the other.

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:

Jason Rock, Biologist Supervisor, Washington  
Chris Stewart, Biologist Supervisor, Wilmington  
Lee Paramore, Biologist Supervisor, Manteo  
Tina Moore, Biologist Supervisor, Morehead City  
Katy West, District Manager, Washington  
Kathy Rawls, Fisheries Management Section Chief, Morehead City

Year 1 Budget Justification:

To allow for the expansion of the FIA into areas from West Bay/Core Sound through the White Oak River additional funding is required. For ease of seeing where the additional funding will go it has been separated below and is denoted in parenthesis as “MHC” for Morehead City where the additional personnel will be located.

Personnel – Additional funding is being requested to hire two Marine Fisheries Technician IIs to conduct the additional sampling in areas from West Bay/Core Sound through the White Oak River. Existing staff in Morehead City are unable to conduct the sampling because they are fulfilling other sampling responsibilities. Existing technicians conducting sampling for the FIA in other areas of the state are dedicated for this project given the near year-round sampling schedule.

1 Marine Fisheries Biologist I	2,080 hours x \$19.05/hr.= \$ 39,627
6 Marine Fisheries Tech. II	12,480 hours x \$14.81/hr.= \$184,873
1 Temp. M.F. Tech. II (11-month)	1,907 hours x \$16.92/hr.= \$ 32,266
2 Marine Fisheries Tech. II (MHC)	4,160 hours x \$14.77/hr.= \$ 61,442

Fringe Benefits - Fringe benefits include Social Security, retirement, health insurance, and longevity (if applicable). 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, 16.67% (first year) with an additional 1% added each year (compounded) for years two through five of salary for retirement. An additional \$5,580 (first year) with an additional 2% added each year (compounded) for years two through five per employee is charged annually for health insurance. The temporary has Social Security and health insurance as fringe.

1 Marine Fisheries Biologist I	\$ 15,217
6 Marine Fisheries Technician II	\$ 78,442
1 Temp. M. F. Technician II (11-month)	\$ 1,416
2 Marine Fisheries Tech. II (MHC)	\$ 26,102

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

Lodging (in-state)	\$ 1,000
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Meals (in-state)	\$ 9,000
Lodging (in-state; MHC)	\$ 500
Meals (in-state; MHC)	\$ 3,000

Equipment: Includes cost to replace sampling gear such as boat trailers and boat motors if needed. Additional equipment funds are needed to outfit the new technicians in Morehead City with sampling equipment such as a boat, boat trailer, boat motor, sampling vehicle, personal protective equipment, and a water quality meter. Costs also include additional funds to purchase dissecting microscopes to aid in species identification and processing biological samples.

Equipment	\$ 20,000
Equipment (MHC)	\$ 95,000

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	\$ 33,700
Office and Scientific Supplies (MHC)	\$ 11,200

Other Costs: Charges paid to the Department of Environmental Quality for office rent.

Office Space Rent	\$ 32,000
Office Space Rent (MHC)	\$ 7,000

**TOTAL YEAR 1 (JOB 2) \$651,785**

Job 2 Amount for Five Years:

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

	Fiscal Year					5 Yr. Totals
	2017-18	2018-19	2019-20	2020-21	2021-22	
Personnel*	\$ 318,208	\$ 327,754	\$ 337,586	\$ 347,714	\$ 358,146	\$ 1,689,408
Fringe Benefits	\$ 121,177	\$ 127,241	\$ 133,565	\$ 140,159	\$ 147,035	\$ 669,177
Travel	\$ 13,500	\$ 13,500	\$ 13,500	\$ 13,500	\$ 13,500	\$ 67,500
Equipment**	\$ 115,000	\$ 10,000	\$ 10,000	\$ 35,000	\$ 35,000	\$ 205,000
Utilities	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Supplies	\$ 44,900	\$ 44,900	\$ 44,900	\$ 44,900	\$ 44,900	\$ 224,500
Contractual	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Other	\$ 39,000	\$ 40,670	\$ 42,424	\$ 44,265	\$ 46,198	\$ 212,557
<b>Total</b>	<b>\$ 651,785</b>	<b>\$ 564,065</b>	<b>\$ 581,975</b>	<b>\$ 625,538</b>	<b>\$ 644,779</b>	<b>\$ 3,068,142</b>

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

\*\* Additional equipment funds are included in years four and five to begin replacement process of sampling vehicles.

## **JOB 3**

Title: Coastal Angling Program

Objectives:

The North Carolina Fisheries Reform Act (FRA) mandates development of state-level Fisheries Management Plans (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 North Carolina Division of Marine Fisheries (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 Angling 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. Provide support and analyses of recreational angler license, catch and participation data in fulfillment of the development of fisheries management plans as stipulated in the Fisheries Reform Act of 1997.
7. Incorporate economic and sociological survey components of all recreational fisheries;
8. Use web-based tools and other Internet technologies to enhance existing survey methodology.

9. Conduct survey in Central Southern Management Area (CSMA) to obtain striped bass and shad catch rates (harvest and discard), overall species composition, size distribution, fishing location, fishing method, fishing effort, and socioeconomic data.

#### Procedures:

The Coastal Recreational Fishing License (CRFL) opened a new door in North Carolina by providing a distinct list of recreational anglers that was previously unavailable. 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 Resources Commission (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 FRA requirement of producing FMPs. These data will also allow NCDMF to perform detailed and accurate analysis of recreational catch and effort as mandated by the federal Magnuson-Stevens Act and to coordinate with federal agencies on other federal initiatives such as a national database of recreational anglers, mandated by Magnuson-Stevens, and the MRIP. The NCDMF provides updates each month of CRFL holders to NOAA as a requirement for the National Saltwater Angler Registry.

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) upper estuarine angler survey, 3) flounder gigging survey, 4) recreational shellfish survey, and 5) 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 project 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 p.m., and 8:00 p.m. to 2:00 a.m.). This new methodology was 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 upper estuarine waters are not covered through the MRIP or the coastal angling survey. 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. Socioeconomic 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. A mandatory survey to determine saltwater fishing activities is conducted by all individuals purchasing CRFLs 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 these 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. Specialized surveys and activities during the previous grant period included: fin clip collections for genetic analysis to determine the contribution of stocked striped bass; collection of otolith, caudal peduncle, and gonads of Atlantic bluefin tuna (*Thunnus thynnus*) to supplement life history studies; online collections of red snapper landings data; and additional biological samples such as carcass collections during special red snapper harvest seasons.

#### Benefits:

Analyses of CRFL and recreational fishing data will be provided to NCDMF and WRC fisheries biologists for stock assessments and management, the legislature for budgetary and informational needs, and to allow the public to be engaged in fisheries management. Staff are also instrumental in coordinating federal-state initiatives designed to improve recreational catch and effort statistics.

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 2014 recreational agents conducted 18,276 angler interviews. 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, these data provide 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 (*Callinectes sapidus*) 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 exceeding 35%. A total of 23,985 mail surveys were conducted in 2014. To improve survey response NCDMF developed a web tool to allow anglers to respond to surveys online. Approximately 20% of survey respondents chose to respond using the online survey. In addition to functioning as a platform for survey response, the web tool also provides an angler journal that can be used by individuals to report and catalogue information from their personal fishing trips.

The recreational program within License and Statistics supported by these funds are only part of a total program budget of \$1,782,548 funded by state appropriations (\$125,500), recreational receipts (\$755,874), Sport Fish Restoration Act (\$376,500), and other Federal funds (\$524,674).

Location:

Coastal and estuarine regions of North Carolina.

Major Products Produced:

Expected results include continued improvements in quality and coverage of information on recreational fisheries in 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 efforts to bolster 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  
Stephanie McInerny, License & Statistics Section Chief, Morehead City

Year 1 Budget Justification:

Personnel

1 Marine Fisheries Biologist II	2,080 hours x \$28.94/hr. = \$ 60,187
1 Marine Fisheries Statistician I	2,080 hours x \$19.48/hr. = \$ 40,518
1 Marine Fisheries Biologist I	2,080 hours x \$23.67/hr. = \$ 51,459
6 Marine Fisheries Tech. II	12,480 hours x \$14.77/hr. = \$184,326
1 Data Control Clerk IV	2,080 hours x \$13.38/hr. = \$ 27,823

3 Temp. M. F. Tech. II (11 month) 5,721 hours x \$16.92/hr. = \$ 96,798

Fringe Benefits - Fringe benefits include Social Security, retirement, health insurance, and longevity (if applicable). 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, 16.67% (first year) with an additional 1% added each year (compounded) for years two through five of salary for retirement. An additional \$ 5,580 (first year) with an additional 2% added each year (compounded) for years two through five per employee is charged annually for health insurance. The temporary has Social Security and health insurance as fringe.

1 Marine Fisheries Biologist II	\$ 19,616
1 Marine Fisheries Statistician I	\$ 15,029
1 Marine Fisheries Biologist I	\$ 17,580
6 Marine Fisheries Tech. II	\$ 76,465
1 Data Control Clerk IV	\$ 12,068
3 Temp. M. F. Tech. II (11 month)	\$ 7,405

Travel - Technicians will be required to drive their personal vehicles from their residence to the survey sites. The current reimbursement rate is \$0.54 per mile for personal vehicle use.

Travel (coastal angler survey) 13,580 miles/year x \$0.54/mile x 6 techs	\$ 44,000
Travel (CSMA striped bass) 22,222 miles/year x \$0.54/mile x 3 techs	\$ 36,000

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)	\$ 29,000
Printing and supplies (questionnaires, reminders, field intercept forms)	\$ 7,500

Equipment - Technicians working under this job will require two 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)	\$ 7,000
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Contractual – Web Service \$ 100

Other Costs - The Statistician I and the Biologist I will occupy office space in the Washington Regional Office (WARO) of DEQ.

Office Space Rent \$ 23,000

**TOTAL YEAR 1 (JOB 3) \$755,874**

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

Table 3. Coastal Angling Program Funds for Five Years.

	<b>Fiscal Year</b>					5 Yr. Totals
	2017-18*	2018-19	2019-20	2020-21	2021-22	
Personnel	\$ 461,111	\$ 474,945	\$ 489,194	\$ 503,872	\$ 518,988	\$ 2,448,110
Fringe Benefits	\$ 148,163	\$ 155,802	\$ 163,771	\$ 172,088	\$ 180,757	\$ 820,581
Travel	\$ 80,000	\$ 80,000	\$ 80,000	\$ 80,000	\$ 80,000	\$ 400,000
Equipment	\$ 7,000	\$ 7,000	\$ 7,000	\$ 7,000	\$ 7,000	\$ 35,000
Utilities	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Supplies	\$ 36,500	\$ 36,500	\$ 36,500	\$ 36,500	\$ 36,500	\$ 182,500
Contractual	\$ 100	\$ 100	\$ 100	\$ 100	\$ 100	\$ 500
Other	\$ 23,000	\$ 24,150	\$ 25,358	\$ 26,625	\$ 27,957	\$ 127,090
<b>Total</b>	<b>\$ 755,874</b>	<b>\$ 778,497</b>	<b>\$ 801,923</b>	<b>\$ 826,185</b>	<b>\$ 851,302</b>	<b>\$ 4,013,781</b>

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

## **JOB 4**

Title: Minimizing Fisheries Related Habitat Impacts

Objectives:

1. To improve the ability to minimize habitat impacts through timely, quality review of environmental permits, multi-agency development and federal consistencies in the coastal counties.
2. To track and assess habitat impacts from permitted development over time.
3. To provide support for redrafting and implementation of the NC Coastal Habitat Protection Plan (CHPP).

Procedures:

The North Carolina Division of Marine Fisheries (NCDMF) and the North Carolina Wildlife Resources Commission (NCWRC) are specifically authorized by law [(G.S.) 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, North Carolina Division of Marine Fisheries (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. The creation in 2009 of two dedicated staff members allowed for permit reviews to be conducted in a timelier and thorough manner, with more field inspections to verify information, and greater involvement with pre-application meetings and interagency coordination, which allow for possible avoidance and minimization measures to be incorporated into the project planning process at a much earlier date.

In 2013 the two staff were transferred from the NCDMF to the North Carolina Division of Coastal Management (NCDCM) through an interagency agreement to streamline the permit review process and to provide greater access to NCDCM staff of fisheries expertise. These positions are classified as Marine Biologist II. The positions are responsible for review of permit applications within the 20 Coastal Area Management Act (CAMA) counties and 19 additional counties with rivers and streams draining to coastal waters. Division of labor is determined by permit intake numbers, with collaboration and cross review of high profile or complex projects or issues commonplace. Documents to review include CAMA major permits and some general permits with fisheries concerns, North Carolina Division of Water Resources (NCDWQ) 401 certifications and National Pollution Discharge Elimination permits, North Carolina Division of Energy, Mineral and Land Resources (NCDEMLR) Mining Permits, North Carolina Department of Transportation (NCDOT) projects and proposed mitigation, Environmental Assessments (EA) and Environmental Impact Statements (EIS) from various state and federal agencies, federal consistencies, and U.S. Army Corps of Engineers (COE) Public Notices.

#### Benefits:

The initial establishment of these positions through CRFL funding has made more time available to the NCDMF biologist supervisors to conduct mandated fishery management duties at a time when staffing had been reduced. These management obligations have not waned, but have increased over time. The current design has allowed permit reviews to be completed in a timelier and detailed manner through increased field inspections and increased involvement with pre-application meetings and interagency coordination. The streamlined process also allows for increased customer service while minimizing unavoidable impacts and preventing unnecessary habitat impacts. With the two positions within NCDCM, staff has more access to archived permits, greater access to permit staff and applicants, and the ability to present fisheries related concerns and issues at an earlier stage in the permit process that can minimize delays and challenges with complex permits. Staff routinely discusses concerns directly with applicants and provides an opportunity to modify projects which can reduce permit times and applicant costs.

The primary goal is to determine utilization of habitats by fish and shellfish as well as recreational boaters and fishermen, and to review the potential impacts of this utilization. Staff utilize literature review, state and federal resource agencies, meetings, scientific data and site investigations to gather information on each project as necessary to provide a complete review of the project and to justify any comments presented. Habitats such as submerged aquatic vegetation (SAV), primary nursery area (PNA), coastal wetlands, oyster beds, etc. are vital to the continued management of fisheries species. These habitats are vital to multiple life history stages of these species and are some of the most productive habitats in the world (NCDEQ CHPP 2015). Coastal wetlands trap nutrients, toxins and sediment, aid in shoreline erosion control, dissipate wave and storm action, and provide a barrier to flood damage. SAV is vital to the estuarine system, filtering water, stabilizing sediment (Fonseca 1996 The Role of Seagrasses in Nearshore Sedimentary Processes; Stephan and Bigford 1997 Atlantic Coastal Submerged Aquatic Vegetation), and providing refuge for juvenile finfish, crabs and shrimp (Savino and Stein 1989 Behavior of Fish Predators and Their Prey; Rooker et al. 1998 Vulnerability of Newly Settled Red Drum (*Sciaenops ocellatus*) to Predatory Fish). PNAs are estuarine waters where initial post-larval development occurs. Species within this area are early post-larval to juvenile and include finfish, crabs, and shrimp. Species inhabit PNAs because they afford food, protection, and proper environmental conditions during vulnerable periods of their life history, thus protection of these areas are imperative. As development along North Carolina's coastal and estuarine habitats continues there will be a continued need to balance the needs of that development with the conservation of habitats critical to the states recreational fisheries.

Continuation of the two permit review staff positions will enable NCDCM to:

- Fully review and comment in a timely manner on all habitat alteration permit applications that might affect coastal fish habitats, fish, and recreational and commercial fisheries.
- Minimize habitat impacts resulting from coastal development projects through suggested modifications or comments on applications.
- Attend necessary meetings concerning habitat alteration permit applications.
- Effectively coordinate with other state and federal agencies participating in the permit review process.
- Reduce the percentage of comments submitted after the comment deadline to < 5%.
- Assist DOT on specific development project and the location of potential coastal mitigation opportunities.
- Fully participate in pre-application meetings, project development team meetings for COE permitted EA and EIS documents, as well as DOT merger meetings.
- Conduct surveys to assess impacts of proposed projects and compliance with permit conditions.
- Track and annually report on program accomplishments and trends in habitat alterations associated with coastal development.
- Staff removes the need of NCDMF biologist supervisor's involvement in permitting process to focus on fishery management activities.
- Assist NCDCM field staff with fisheries related issues concerning general and major permits and permit modifications.
- Coordinate federal National Marine Fisheries Service (NMFS) consistencies and comment on any consistencies that might affect coastal fisheries habitat, fish and fisheries.



Travel - The budget includes funds to be used for in-state transportation to conduct permit site visits and participate in interagency coordination meetings. Funds for lodging for occasional overnight travel is also included.

Rent/lease motor vehicle	8,824 miles/year x \$0.34/mile x 2 Biologists	\$ 6,000
Lodging (in-state)		\$ 400
Meals (in-state)		\$ 200

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

Office and data processing supplies	\$ 4,930
Telephone	\$ 4,370
Postage and Printing	\$ 500

Other Costs - Monies needed for office lease space for the two positions located in a NCDCM and DEQ Washington Regional Office in the northern and southern coast.

Office space	\$ 8,500
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**TOTAL YEAR 1 (JOB 4) \$146,884**

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

Table 4. Minimizing Habitat Impacts Funds for Five Years.

	<b>Fiscal Year</b>					5 Yr. Totals
	2017-18*	2018-19	2019-20	2020-21	2021-22	
Personnel	\$ 89,916	\$ 92,615	\$ 95,393	\$ 98,256	\$ 101,205	\$ 477,385
Fringe Benefits	\$ 32,068	\$ 32,698	\$ 33,346	\$ 34,013	\$ 34,701	\$ 166,826
Travel	\$ 6,600	\$ 6,600	\$ 6,600	\$ 6,660	\$ 6,600	\$ 33,060
Equipment	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Utilities	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Supplies	\$ 9,800	\$ 9,800	\$ 9,800	\$ 9,800	\$ 9,800	\$ 49,000
Contractual	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Other	\$ 8,500	\$ 8,500	\$ 8,500	\$ 8,500	\$ 8,500	\$ 42,500
<b>Total</b>	<b>\$ 146,884</b>	<b>\$ 150,213</b>	<b>\$ 153,639</b>	<b>\$ 157,229</b>	<b>\$ 160,806</b>	<b>\$ 768,711</b>

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

**JOB 5**

Title: Marine Patrol Officers and Temporary Tele communicator

Objectives:

1. Funding of the Marine Patrol Officer position (120) in Dare County continuing to be supported by Coastal Recreational Fishing License (CRFL) revenues. The 120 position is located in District 1 where the majority of the fishing activity has become recreational. This position received initial CRFL funding through the Request for Proposal (RFP) process with approval effective July 1, 2015. Currently, Marine Patrol has eight officers whose salary is funded by commercial license receipts and one officer funded by CRFL receipts. The increase in recreational fishing activity and the decline in commercial fishing activity warrants the 120 position continue to be funded by CRFL. The 120 position patrol area is the outer banks in Dare County south of Oregon Inlet to Buxton. Within this work area there are two ocean piers, Rodanthe Pier and Avon Pier, and also the beach for recreational shoreline fisherman. The 120 position encounters numerous recreational fishing operations from vessels both in internal waters as well as in the Atlantic Ocean. The officer assigned to the 120 position also has a secondary assigned area of coverage that ranges from Buxton to Ocracoke Island. The majority of activity that this officer assigned to the 120 position encounters is from the recreational fishing industry. This position made 9,808 recreational inspections during 2013-2015 (calendar years), while only making 1,975 commercial inspections for the same time period.
2. Shift funds for the Marine Patrol 309 position (#60032609) from state appropriations to Coastal Recreational Fishing License (CRFL) revenues. The increase in recreational fishing activity and the decline in commercial fishing activity warrants the 309 position be funded by CRFL. The 309 position is located in the Carolina Beach area in New Hanover County. The majority of activity that this officer assigned to the 309 position encounters is from the recreational fishing industry.
3. Also, continued funding of the temporary tele communicator position in Marine Patrol which was originally approved through the RFP process with approval effective July 1, 2015. The amount of calls for service that the Marine Patrol communication center receives from the recreational fishing industry has increased significantly which justifies this request for recreational monies. During a four-month survey of calls, Marine Patrol telecommunications received 254 calls related to recreational fishing activity while during this same period, only 152 calls were received related to commercial fishing activity.

#### Procedures:

Marine Patrol has a total of 56 officers with 47 funded by state appropriations, eight funded by commercial license receipts and one funded by recreational monies. The eight positions funded by commercial receipts in FY16 totaled \$350,000 with another \$750,000 in operating budget bringing the total commercial receipt funding for Marine Patrol to \$1,100,000. State appropriations provides \$4,321,445 to Marine Patrol in both operating and position support. In comparison, the FY16 CRFL grant funded one officer's salary, equipment needs, and two patrol vessels for a total of \$204,600, with FY17 dropping to \$83,194 annually.

The majority of the Marine Patrol officer's duties in position 120 have become enforcing rules and regulations concerning recreational fishing which consists of size and creel limits of regulated

species, (i.e., red drum, spotted sea trout, black sea sass, striped bass, flounder, etc.) as well as CRFL inspections to ensure that individuals are complying with licensing requirements.

The Marine Patrol is seeking to have the 309 position in New Hanover County be funded by CRFL funds due to the demands of the work area assigned to that position. The 309 position provides primary enforcement coverage for the Carolina Beach area and the Cape Fear River as can be seen in Figure 2 below. Within this work area are two ocean piers, Kure Beach Pier and Carolina Beach Fishing Pier, and the beach for recreational shoreline fisherman. The 309 position encounters a lot of recreational fishing from vessels both in internal waters as well as in the Atlantic Ocean.

Table 5 shows the total number of commercial and recreational fishing activity inspections made from 2013 to 2015.

Table 5. 2013-2015 Marine Patrol Inspections – Statewide.

Inspections	2013		2014		2015	
	Commercial	Recreational	Commercial	Recreational	Commercial	Recreational
Standard Commercial Fishing Licenses (SCFL)	11,412	n/a	13,328	n/a	14,902	n/a
Commercial Fishing Vessel Registrations (CFVR)	10,152	n/a	11,701	n/a	13,002	n/a
Shellfish Licenses	4,137	n/a	3,232	n/a	3,523	n/a
Seafood Dealer Inspections	6,170		5,341		5,706	
Coastal Recreational Fishing Licenses (CRFL)	n/a	72,414	n/a	61,690	n/a	66,267
Ocean Fishing Pier License ( <i>Individuals fishing on a pier covered by the pier license</i> )	n/a	10,558	n/a	9,564	n/a	12,590
Recreational Vessels	n/a	22,412	n/a	20,658	n/a	24,083
Charter Vessels	n/a	2,052	n/a	1,725	n/a	1,914
<b>Total Inspections</b>	<b>31,871</b>	<b>107,436</b>	<b>33,602</b>	<b>93,637</b>	<b>37,133</b>	<b>104,854</b>

As can be seen in Table 5, from 2013 through 2015, Marine Patrol inspected 203,321 more recreational fishing operations than commercial fishing operations. This provides further evidence to justify the need for recreational license funds to continue to support Marine Patrol operations

Marine Patrol has a total of six tele communicators; and only one of them is funded by recreational monies. The remaining five tele communicators are fully funded by state appropriations.

Benefits: The monies provided by the grant will salary and equip the 120 and 309 positions and temporary tele communicator for five years and will ensure continuance of the patrol coverage necessary to ensure the compliance of all fishermen, both commercial and recreational, with all general statutes and rules and regulations governing North Carolina’s fisheries.

The Marine Patrol communications section plays a vital role to ensure officer safety as well as other sections when they are sampling at night. Communications also provide officers with the

information necessary for proper enforcement and to provide the public with uninterrupted access to quality customer service.

Location:

Avon, Dare County (120 assigned work area);  
Carolina Beach, New Hanover County (309 assigned work area);  
Tele Communicator-Morehead City

Major Products Produced:

The 120 position inspected 7,833 more recreational fishing operations compared to commercial fishing operations during 2013-2015.. The funding of this position with a CRFL grant will ensure the continuation of law enforcement efforts in these areas of increased recreational fishing activity. In addition, these positions will ensure the compliance of fishermen, both commercial and recreational, with the general statutes, rules and regulations. These rules and regulations protect the harvest of the state's fisheries, and implement the fishery management measures of Fishery Management Plans to protect fishery stocks and the various habitats supporting these stocks. These positions also provide fisheries education and customer service to the public.

The 309 position inspected 3,181 more recreational fishing operations compared to commercial fishing operations during 2015. The funding of this position with a CRFL grant will ensure the continuation of law enforcement efforts in this area of increased recreational fishing activity. In addition, this position will ensure the compliance of fishermen, both commercial and recreational, with the general statutes, rules and regulations. These rules and regulations protect the harvest of the state's fisheries, and implement the fishery management measures of Fishery Management Plans to protect fishery stocks and the various habitats supporting these stocks. This position also provides fisheries education and customer service to the public.

Most Marine Patrol officers call telecommunications in order to verify an individual's license information since recreational anglers are not required to have their CRFL on their person while fishing, With the majority of inspections being made on recreational fishing activity, it seems practical to seek funding for the temporary tele communicator position from recreational monies.

Lead NCDMF Personnel:

Forrest D. Nelson, Major of Marine Patrol, Morehead City

Year 1 Budget Justification:

Personnel

2 Marine Patrol Officers at	2,080 hours x \$22.313/hr.= \$ 92,822
1 Temporary Tele communicator (11 month)	1,907 hours X \$16.92/hr. = \$ 32,486

Fringe Benefits - Fringe benefits include Social Security, retirement, health insurance, and longevity (if applicable). Personnel salary 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, 21.67% (first year) with an additional 1% added each year (compounded) for years two through five of salary for retirement. An additional \$ 5,580 (first year) with an additional 2% added each year (compounded) for years two through five per employee is charged annually for health insurance. The temporary has Social Security and health insurance as fringe.

2 Marine Patrol Officers	\$ 38,455
1 Temporary Tele communicator (11 month)	\$ 8,065

Travel - These Marine Patrol officers may be required to attend training that could result in overnight stays. This includes in state hotel and per diem for meals.

Lodging (in-state)	\$ 850
Meals (in-state)	\$ 450

Supplies, Uniforms- The Marine Patrol officers will need to have new uniforms on annual basis as well as supplies that are necessary for the day to day operations of a Marine Patrol officer.

Security and Safety	\$ 2,516
Janitorial	\$ 314
Carpentry and Hardware	\$ 585
Motor Vehicle Parts	\$ 2,705
Clothing and Uniforms	\$ 5,380

Vehicle Rental- Marine Patrol rents patrol vehicles from the Department of Administration. The Officers in these positions will be assigned an F-350 at a mileage rate of \$.65 cents a mile with a monthly fee of 35 dollars. The average around miles a month for officers stationed in these positions will be:

(1) at 2,050/miles month x \$.65/mile + \$35/month	\$ 16,410
(1) at 2,000/miles month x \$.65/mile + \$35/month	\$ 16,020

Vessel Gas – The average price for a gallon of gas over the last five years is \$3.43 a gallon. Estimated average of gallons used by an officer in a year is around 1,900 gallons. Inflationary increases of two hundred dollars each year for possible increase in fuel costs.

(2) at 1,900 x \$3.43/gallon	\$ 13,000
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Equipment- In addition to funding the 120 and 309 positions Marine Patrol is requesting to purchase three large patrol vessels and three flat bottom vessels from funds from this CRFL grant. One large patrol vessel and one flat bottom vessel will be purchased in each of the first three years (FY18, FY19, and FY20). These new vessels will replace vessels that have been in

service for numerous years and are in poor condition. The Marine Patrol has taken \$666,243 in permanent operating budget reductions over the past six fiscal years. Due to these recent budget cuts, Marine Patrol has not been able to replace these aging vessels. Currently, Marine Patrol has 37 vessels purchased prior to 1999 still in service. These new vessels will be issued to officers whose assigned work areas experience considerable recreational fishing activity. Vessel budget listed for FY18, FY19, and FY20 for each year of the three years (FLIR will be purchased in year one only).

23' deep v patrol vessel	\$110,000
21' flat bottom vessel	\$ 42,000
FLIR (thermal imaging device)	\$ 2,500

**TOTAL YEAR 1 (JOB 5) \$384,558**

Job 5 Amount for Five Years:

Table 6. Marine Patrol Officers and Temporary Tele Communicator Positions.

	<b>Fiscal Year</b>					5 Yr. Totals
	2017-18*	2018-19	2019-20	2020-21	2021-22	
Personnel	\$ 125,308	\$ 129,067	\$ 132,939	\$ 136,927	\$ 141,035	\$ 665,276
Fringe Benefits	\$ 46,520	\$ 48,704	\$ 50,979	\$ 53,348	\$ 55,813	\$ 255,364
Travel	\$ 1,300	\$ 1,300	\$ 1,300	\$ 1,300	\$ 1,300	\$ 6,500
Equipment	\$ 154,500	\$ 152,000	\$ 152,000	\$ -	\$ -	\$ 458,500
Utilities	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Supplies	\$ 24,500	\$ 24,900	\$ 25,300	\$ 25,700	\$ 26,100	\$ 126,500
Contractual	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Other Costs	\$ 32,430	\$ 32,430	\$ 32,430	\$ 32,430	\$ 32,430	\$ 162,150
<b>Total</b>	<b>\$ 384,558</b>	<b>\$ 388,401</b>	<b>\$ 394,948</b>	<b>\$ 249,705</b>	<b>\$ 256,678</b>	<b>\$ 1,674,290</b>

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

**Total Amount for Five Years:**

Table 7. Total Amount of CRFL Funds for Five Years for Jobs 1 – 5.

	<b>Fiscal Year</b>					5 Yr. Total
	2017-18*	2018-19	2019-20	2020-21	2021-22	
<b>Jobs 1-5 Totals</b>	<b>\$2,387,617</b>	<b>\$2,335,113</b>	<b>\$2,392,037</b>	<b>\$2,324,345</b>	<b>\$2,385,946</b>	<b>\$11,825,058</b>

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

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

July 1, 2017 – June 30, 2022

## 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 commission. 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:

1. To provide the North Carolina Division of Marine Fisheries 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 North Carolina Division of Marine Fisheries (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 (Legislatively Mandated). 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 Coastal Recreational Fishing License (CRFL) opened a new door in North Carolina by providing a distinct list of recreational anglers previously unavailable. 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 Resources Commission (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 FRA requirement of producing fisheries management plans (FMP). These data also allow the NCDMF to perform detailed and accurate analyses of recreational catch and effort as mandated by the federal Magnuson-Stevens Act and to coordinate with federal agencies on other federal initiatives such as a national database of recreational anglers, mandated by Magnuson-Stevens, and the Marine Recreational Information Program. The NCDMF provides updates each month of CRFL holders to NOAA as a requirement for the National Saltwater Angler Registry.

The Business Technology Application Analyst will be involved in the maintenance, enhancement, and support of existing systems. In addition, this position will be involved in the development of applications to incorporate new data as required. The NCDMF is implementing a Business Process Management (BPM) product to upgrade the legacy database system. This product functions in the cloud and will connect directly to the existing database where the data is maintained. 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 licenses
- CRFL Violations and violations of other NCDMF License and Permit laws
- Business requirements for CRFL sales through the Wildlife Resources Commission (WRC) ALVIN system, including new, modifications, quality assurance, data feeds, etc.
- 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 and enforcement 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. Additionally, the current legacy application will be replaced with Business Process Management (BPM) technology, complemented with Pegasystems' Certification and Licensing Framework (CLF) 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 5year 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 BPM enterprise system.

The NCDMF License Office, Information Technology and Administrative Services sections supported by these funds are only part of a total program budget funded by commercial receipts, state appropriations besides the recreational revenues. The License Office has funding totaling \$694,099 with 10 permanent and two temporary positions located in the five NCDMF offices. The Information Technology section has funding totaling \$1,261,797 with seven permanent positions supporting the NCDMF computer infrastructure.

### Benefits:

Since January 1, 2007, over four million CRFLs have been sold with over 22,000, 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. The license positions are key to providing enhanced customer service and will allow us to continue to staff the Washington license office that was closed in 2011 due to the loss of a state appropriated position.

Below are the CRFL products implemented through NCDMF only license sales outlets through the NCDMF FIN since the initial sale of the CRFL in January, 2007:

- Blanket For Hire Captain's Coastal Recreational Fishing License
- Non-Blanket For-Hire Vessel Coastal Recreational Fishing License
- Blanket For-Hire Vessel 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
- Verification of recreational licenses by Marine Patrol via secured Internet
- 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. Enhanced recreational license information as types of licenses are required to be changed over time either to technological advancements, quality assurance, modification, or new license products. These funds will also provide the resources to ensure better data on recreational catch and effort.

### Lead NCDMF Personnel:

Al Schmidt – Chief, Information Technology, Morehead City

Stephanie McInerny - Chief, License and Statistics, Morehead City

Year 1 Budget Justification:

Personnel

1 Processing Assistant IV	2,080 hours x \$13.38/hr. = \$ 27,824
1 Bus. & Tech. App. Analyst	2,080 hours x \$30.54/hr. = \$ 63,520
1 Temp. Proc. Assist. (6 month)	1,040 hours x \$14.51/hr. = \$ 15,090
1 Temp. Proc. Assist. (6 month)	1,040 hours x \$14.51/hr. = \$ 15,090

Fringe Benefits - Fringe benefits include Social Security, retirement, health insurance, and longevity (if applicable). Fringe benefits are calculated at the rate of 7.65% of salary for Social Security, 16.67% (first year) with an additional 1% added each year (compounded) for years two through five of salary for retirement. An additional \$5,580 (first year) with an additional 2% added each year (compounded) for years two through five per employee is charged annually for health insurance. The temporary has Social Security and health insurance as fringe.

1 Processing Assistant IV	\$ 12,347
1 Bus. & Tech. App. Analyst	\$ 23,595
2 – Temp. Proc. Assists. (6 month)	\$ 2,554

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)	\$ 1,800	
Meals (in-state)	\$ 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/month x 12 months	\$ 7,500
	\$625/month 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 Morehead City, 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 @ \$6,000	\$ 6,000
	1 office space @ \$6,000	\$ 6,000
	2 office spaces for \$4,200	\$ 4,200
Electrical Service		\$ 8,000
Telephone & Cellular Service		\$ 6,680
Water and Sewer Service		\$ 1,000
Insurance		\$ 1,500
Cleaning Contract		\$ 1,800

Equipment – 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.

Office Equipment	\$ 300
Office Furniture	\$ 14,000
Other Equipment	\$ 5,000
Computer Equipment	\$ 29,000
Computer Software	\$ 600

Contractual - Administrative Services will be required for specific time-limited projects needed to improve infrastructure.

Administrative Services	\$ 59,375
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Other Costs - The telecommunication data charges and Local Area Network service charges are required to support the computer infrastructure of the database administration functions.

Telecommunication Data Charges	\$ 53,200
Local Area Network Service Charge	\$ 24,000

**TOTAL YEAR 1 (JOB A) \$411,845**

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

Table 8. Division Infrastructure Support Funds for Five Years.

	<b>Fiscal Year</b>					5 Yr. Totals
	2017-18	2018-19	2019-20	2020-21	2021-22	
Personnel	\$ 121,525	\$ 125,055	\$ 128,689	\$ 132,428	\$ 136,275	\$ 643,971
Fringe Benefits	\$ 38,496	\$ 40,491	\$ 42,571	\$ 44,741	\$ 47,004	\$ 213,303
Travel	\$ 7,050	\$ 7,050	\$ 7,050	\$ 7,050	\$ 7,050	\$ 35,250
Utilities	\$ 35,180	\$ 35,180	\$ 35,180	\$ 35,180	\$ 35,180	\$ 175,900
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
Other	\$ 77,200	\$ 77,200	\$ 77,200	\$ 77,200	\$ 77,200	\$ 386,000
<b>Total</b>	<b>\$ 411,845</b>	<b>\$ 417,371</b>	<b>\$ 423,085</b>	<b>\$ 428,994</b>	<b>\$ 435,104</b>	<b>\$ 2,116,400</b>

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

## **JOB B**

Title: Senior Stock Assessment Scientist

Objective:

1. 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.

Procedures:

The 2007 General Assembly (HB 1473) appropriated funds for a North Carolina Division of Marine Fisheries (NCDMF) Stock Assessment Scientist to head the NCDMF's efforts at conducting stock assessments and mandated that the money come from Coastal Recreational Fishing License (CRFL) funds (Legislatively Mandated). 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 completed is the development of a comprehensive Stock Assessment Standard Operating Procedure (SOP) that standardizes 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 quantitative approaches to analyzing data. This employee has also maintained the NCDMF involvement with ASMFC Atlantic



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 paid to the Department of Environment and Natural Resources for office rent.

Office Space Rent \$ 3,600

**TOTAL YEAR 1 (JOB B) \$117,740**

Job B Amount for Five Years (Center 2144):

Table 9. Senior Stock Assessment Scientist Funds for Five Years.

	Fiscal Year					5 Yr. Totals
	2017-18	2018-19	2019-20	2020-21	2021-22	
Personnel	\$ 68,482	\$ 70,536	\$ 72,652	\$ 74,832	\$ 77,077	\$ 363,579
Fringe Benefits	\$ 33,396	\$ 34,936	\$ 36,540	\$ 38,210	\$ 41,433	\$ 184,515
Travel	\$ 3,252	\$ 3,252	\$ 3,252	\$ 3,252	\$ 3,252	\$ 16,260
Equipment	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Utilities	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Supplies	\$ 9,010	\$ 9,010	\$ 9,010	\$ 9,010	\$ 9,010	\$ 45,050
Contractual	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Other	\$ 3,600	\$ 3,600	\$ 3,600	\$ 3,600	\$ 3,600	\$ 18,000
<b>Total</b>	<b>\$ 117,740</b>	<b>\$ 121,334</b>	<b>\$ 125,054</b>	<b>\$ 128,904</b>	<b>\$ 134,372</b>	<b>\$ 627,404</b>

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

**Total Amount for Five Years:**

Table 10. Total Amount of Legislatively Mandated CRFL Funds for Five Years for Jobs A and B.

	Fiscal Year					5 Yr. Total
	2017-18*	2018-19	2019-20	2020-21	2021-22	
<b>Jobs A &amp; B Totals</b>	<b>\$ 529,585</b>	<b>\$ 538,705</b>	<b>\$ 548,139</b>	<b>\$ 557,898</b>	<b>\$ 569,476</b>	<b>\$ 2,743,803</b>

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

**Grand Total Amount for Five Years:**

**Table 11. Total Amount of CRFL Funds for Five Years for Jobs 1 – 5, A and B.**

	<b>Fiscal Year</b>					
	<b>2017-18*</b>	<b>2018-19</b>	<b>2019-20</b>	<b>2020-21</b>	<b>2021-22</b>	<b>Grand Total</b>
<b>Jobs 1-5 Totals</b>	<b>\$2,387,617</b>	<b>\$2,335,113</b>	<b>\$2,392,037</b>	<b>\$2,324,345</b>	<b>\$2,385,946</b>	<b>\$11,825,058</b>
<b>Jobs A &amp; B Totals</b>	<b>\$ 529,585</b>	<b>\$ 538,705</b>	<b>\$ 548,139</b>	<b>\$ 557,898</b>	<b>\$ 569,476</b>	<b>\$ 2,743,803</b>
<b>Grand Total</b>	<b>\$2,917,202</b>	<b>\$2,873,818</b>	<b>\$2,940,176</b>	<b>\$2,882,243</b>	<b>\$2,955,422</b>	<b>\$14,568,861</b>

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