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



Project Years
July 1, 2007 – June 30, 2012

March 2008 Revised: March 2010

TABLE OF CONTENTS

1.	List of Tables	page 2
2.	Project Period	page 3
3.	Amount	page 3
4.	Project Summary	page 3
5.	Background / Need for Marine Resources Fund Funding	page 3
6.	Project Goal	page 4
7.	Statement of Work	page 5

LIST OF TABLES

1.	Table 1.	Coastal Recreational Fishing License Implementation and Support Funds for Five Years.	page 7
2.	Table 2.	Coastal Recreational Fishing License Sales and Data Support Funds for Five Years.	page 11
3.	Table 3.	Senior Stock Assessment Scientist Funds for Five Years.	page 13
4.	Table 4.	Fisheries Independent Assessment Program Funds for Five Years.	page 17
5.	Table 5.	Total Amount of CRFL Funds for Five Years for Jobs 1 – 4.	page 17

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

1. Project Period: From: 1 July 2007 To: 30 June 2012

2. <u>Amount:</u> Year 1 (1 July 2007 – 30 June 2008) - \$1,322,020

Year 2 (1 July 2008 – 30 June 2009) - \$1,343,770 Year 3 (1 July 2009 – 30 June 2010) - \$1,365,148 Year 4 (1 July 2010 – 30 June 2011) - \$1,387,069

Year 5 (1 July 2011 – 30 June 2012) - \$1,409,772

5 Year Total = \$6,827,779

3. Project 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 in the Division meeting its mission of ensuring sustainable marine and estuarine fisheries for the benefit of the people of North Carolina. Revenue from the licenses is placed in two separate funds to manage, protect, restore, develop, cultivate and enhance the marine resources of the state.

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

Two of the jobs funded in this project were mandated through legislative requirements.

4. Background/Need for Marine Resources Fund Funding:

The Coastal Recreational Fishing License 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 the Division's mission. The Coastal Recreational Fishing License 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 in this project will assist in license sales, data management, data collection, analyses, and fisheries management. Without this funding, data collection and analyses in North Carolina will be greatly jeopardized.

5. Project 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". This project's goal is to enhance coastal recreational fishing license sales, data management, data collection and analyses to ensure sustainable marine and estuarine fisheries for the benefit of the people of North Carolina.

6. Statement of Work:

JOB 1

Title: Coastal Recreational Fishing License Implementation and Support

Objective:

To provide the NCDMF the necessary technical support and infrastructure to implement the Coastal Recreational Fishing License.

Background:

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 Coastal Recreational Fishing License, effective January 1, 2007. The legislation dramatically expanded the data collection, data management and licensing requirements for the NCDMF from approximately 6,300 commercial fishermen to an additional projected 1.4 million recreational anglers (Senate Bill 1126 Fiscal Impact Report). In House Bill 831, the General Assembly provided one-time appropriations for an implementation plan to be approved in April 2005. The tremendous increase in the essential license sales of the DMF 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 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.

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

The CRFL opened a new door in North Carolina by providing a distinct list of recreational anglers which has before not been available. 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 ALVIN system will be accessed, edited and used by the supported positions to perform analysis of species catch and economic impacts to support the NC Fisheries Reform Act of 1997 requirement of producing fisheries management plans. These data also allow the NCDMF to perform detailed and accurate analyses of recreational catch and effort as mandated by the federal Magnuson-Stevens Fisheries Act and to coordinate with federal agencies on other federal initiatives such a national database, as required by the Magnuson-Stevens Act, of recreational angles and the Marine Recreational Information Program.

Location:

Morehead City, Raleigh, Wilmington, Manteo and Washington, NC

Major Product Produced:

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

Lead NCDMF Personnel:

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

Year 1 Budget Justification:

<u>Personnel</u> – The project has one Processing Assistant IV position and one Business and Technology Applications Analyst position funded from this grant. The project will also have two six-month temporary Processing Assistants. Each subsequent year beyond year 1 assumes a 3% annual legislative increase.

1 Processing Assistant IV	2,080 hours x \$13.32/hr. = \$27,698
1 Bus. & Tech. App. Analyst	2,080 hours x \$31.55/hr. = \$65,624
1 Temp. Proc. Assist. (6 mth.)	1,040 hours x \$12.26/hr. = \$12,750
1 Temp. Proc. Assist. (6 mth.)	1,040 hours x \$12.26/hr. = \$12,750

<u>Fringe Benefits</u> – Fringe benefits include Social Security, retirement and health insurance. Personnel salaries and fringe have been budgeted to account for a three percent increase each year. Fringe benefits are calculated at the rate of 7.65% of salary for Social Security and 10.51% of salary for retirement. An additional \$4,929 per employee is charged annually for health insurance. The two Temporary Processing Assistant positions will only have Social Security as a fringe.

1 Processing Assistant IV	\$ 9,959
1 Bus. & Tech. App. Analyst	\$16,846
2 Temporary Proc. Assists. (6-mth.)	\$ 1,951

<u>Travel</u> – 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. The NCDMF is charged its proportionate share of using a state-issued vehicle on a rate per mile basis. The charges include all expenses for operating, servicing, repairing and replacing vehicles under the state's jurisdiction. This also includes employee education expenses for required training.

Lodging (in-state)	\$60.00 x 15 days x 2 personnel	\$ 1,800
Meals (in-state)	\$35.00 x 15 days x 2 personnel	\$ 1,050
Use of state vehicles	7,143 miles/year x \$0.28/mile	\$ 2,000
	7,143 miles/year x \$0.28/mile	\$ 2,000
Employee Education	•	\$ 200

<u>Supplies</u> – General office supplies, postage, and renting two copiers to support the positions funded by the project. 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 project.

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

<u>Utilities</u> – During this budget period, rental charges will be incurred for office space used by the two Processing Assistant positions located in Manteo, NC, the Business & Technology Applications Analyst located in Raleigh, and the Processing Assistant positions located in Wilmington, NC. Funds will also need to cover the overhead of the facilities where staff offices are located. This includes services for electrical, telephone, water and sewer as well as insurance coverage for the contents of the building.

The office space lease does not include the cleaning of the building so funds are also needed for this expense.

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

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

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

TOTAL YEAR 3 (JOB 1)

\$393,603

Job 1 Amount for Five Years:

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

Fiscal Year												
		2007-08	2	2008-09	:	2009-10	2	2 <mark>010-11</mark>	:	2011-12	5	Yr. Totals
Personnel	\$	111,525	\$	114,852	\$	123,137	\$	118,822	\$	130,338	\$	606,531
Fringe Benefits	\$	23,733	\$	24,092	\$	25,324	\$	28,756	\$	26,320	\$	125,284
Travel	\$	7,050	\$	7,050	\$	7,050	\$	7,050	\$	7,050	\$	35,250
Equipment	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-
Supplies	\$	24,120	\$	24,120	\$	24,120	\$	24,120	\$	24,120	\$	120,600
Contractual	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-
Construction	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-
Other	\$	215,480	\$	215,480	\$	209,939	\$	214,855	\$	209,939	\$	1,060,777
Total	\$	381,908	\$	385,594	\$	389,570	\$	393,603	\$	397,767	\$	1,948,422

^{*} Each subsequent year beyond year 1 assumes a 3% annual legislative salary increase.

JOB 2

Title: Coastal Recreational Fishing License Sales and Data Support

Objectives:

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

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

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, 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 DMF could not be met by the one-time appropriation.

For this reason, the Wildlife Resources Commission and the Marine Fisheries Commission approved \$480,000 for the NCDMF to administer the license, technical infrastructure, data analysis for the license database, generation of license reports, augmentation of licenses, including licenses only sold through NCDMF offices.

Funds will be used to hire an Administrative Officer III that will assist 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 will be used to support the existing positions of Processing Unit Supervisor V and 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 equalize the balance between all funds supporting license sales support in the NCDMF.

Funds will also be used to support the existing positions of Statistician I and Business Technology Application Analyst. The CRFL opens a new door in North Carolina by providing a distinct list of recreational anglers which has before not been available. This allows the NCDMF Recreational Survey biologists and statisticians 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 ALVIN system will be accessed, edited and used by the supported positions to perform analysis of species catch and economic impacts to support the NC Fisheries Reform Act of 1997 requirement of producing fisheries management plans. These data will also allow NCDMF to perform detailed and accurate analysis of recreational catch and effort as mandated by the federal Magnuson-Stevens Fisheries and to coordinate with federal agencies on other federal initiatives such as a national database, mandated by Magnuson-Stevens, of recreational anglers and the newly initiated Marine Recreational Information Program.

Location:

Morehead City, Columbia, and Washington, NC

Major Product Produced:

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

Lead NCDMF Personnel:

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

Year 1 Budget Justification:

<u>Personnel</u> – The project has one Processing Unit Supervisor V position, one Processing Assistant IV, one Statistician I, one Business and Technology Applications Analyst position and one Administrative Officer II will be funded from this grant.

1 Processing Unit Supe	rvisor V	2,080 hours x \$16.21/hr. = \$33,725
1 Processing Assistant	IV	2,080 hours x \$13.81/hr. = \$28,734
1Statistician I		2,080 hours x \$23.79/hr. = \$49,482
1 Bus. & Tech. App. An	alyst	2,080 hours x \$36.06/hr. = \$75,000
1 Business Officer	2,080 hours x \$27.46	/hr. = \$57,113

<u>Fringe Benefits</u> – Fringe benefits include Social Security, retirement and health insurance. Personnel salaries and fringe have been budgeted to account for a three percent increase each year. Fringe benefits are calculated at the rate of 7.65% of salary for Social Security and 10.51% of salary for retirement. An additional \$4,929 per employee is charged annually for health insurance. The two Temporary Processing Assistant positions will only have Social Security as a fringe.

1 Processing Unit Supervisor V	\$ 11,054
1 Processing Assistant IV	\$ 10,147
1 Statistician I	\$ 13,915
1 Bus. & Tech. App. Analyst	\$ 18,550
1 Administrative Officer III	\$ 15,301

<u>Travel</u> – 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. The NCDMF is charged its proportionate share of using a state-issued vehicle on a rate per mile basis. The charges include all expenses for operating, servicing, repairing and replacing vehicles under the state's jurisdiction. Travel budget also includes travel expenses incurred by Marine Fisheries Commission (MFC) members when working on CRFL projects, attending advisory committee meetings, or Joint WRC & MFC Committee Meetings. This also includes employee education expenses for required training.

Use of state vehicles	7,143 miles/year x \$0.28/mile	\$ 1,500
	7,143 miles/year x \$0.28/mile	\$ 1,500
	4,286 miles/year x \$0.28/mile	\$ 800
Commission Transportation	•	\$

Commission Meals & Lodging	\$
Employee Education	\$ 2,500

<u>Supplies</u> – General office supplies, postage, and renting a copier to support the positions funded by the project. 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 project.

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

<u>Utilities</u> – During this budget period, rental charges will be incurred for office space used by the Processing Unit Supervisor I and Administrative Officer II located in Morehead City, NC, the Business & Technology Applications Analyst located in Raleigh, the Processing Assistant position located in Columbia, NC, and the Statistician 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, natural gas, and water and sewer.

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

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

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

TOTAL YEAR 1 (JOB 2) \$509,591

Job 2 Amount for Five Years:

Table 2. Coastal Recreational Fishing License Sales and Data Support Funds for Five Years.

Fiscal Year												
		2007-08	2008-09		2009-10		2010-11		2011-12		5 Yr. Totals	
Personnel	\$	206,160	\$	213,844	\$	234,251	\$	244,054	\$	247,654	\$	1,100,749
Fringe Benefits	\$	52,829	\$	53,747	\$	56,951	\$	68,967	\$	59,025	\$	273,891
Travel	\$	24,000	\$	24,000	\$	18,200	\$	6,300	\$	18,200	\$	120,000
Equipment	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-
Supplies	\$	39,400	\$	39,400	\$	39,189	\$	37,999	\$	39,189	\$	197,000
Contractual	\$	-	\$	-	\$	-	\$	-	\$	=	\$	=
Construction	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-
Other	\$	163,590	\$	163,590	\$	153,390	\$	152,271	\$	153,390	\$	817,950
Total	\$	485,979	\$	494,581	\$	501,981	\$	509,591	\$	517,458	\$	2,509,590

^{*} Each subsequent year beyond year 1 assumes a 3% annual legislative salary increase.

JOB 3

Title: Senior Stock Assessment Scientist

Objective:

To produce peer-approved quantitative stock assessments in a timely manner for inclusion in state and federal Fishery Management Plans as well as for use in daily management.

Background:

The 2007 General Assembly (HB 1473) appropriated funds for a Division Stock Assessment Scientist to head the Division's efforts at conducting stock assessments and mandated that the money come from Coastal Recreational Fishing License funds. Stock assessment 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 Division will seek to hire and retain an experienced Stock Assessment Scientist at a salary that will attract a highly qualified individual to direct the Division of Marine Fisheries' stock assessment efforts.

Location:

Morehead City, NC

Major Product Produced:

The Stock Assessment Scientist will conduct assessments of important recreational fish stocks in North Carolina, supervise and provide technical guidance to the existing Stock Assessment Scientists and biological staff, present assessment results to the North Carolina Marine Fisheries Commission (NCMFC) and to ASMFC and federal Council boards and committees. The position will serve as the "senior" North Carolina assessment person and represent the Division of Marine Fisheries in NCMFC, ASMFC and NMFS Council species Boards and assessment committees. It will perform assessments, supervise two other stock assessment biologists, and advise the Fisheries Management Chief and Director on stock matters.

Lead NCDMF Personnel:

This position is vacant at this time

Year 1 Budget Justification:

Personnel: The project will fund one permanent Stock Assessment Scientist.

1 Stock Assessment Scientist 2,080 hours x \$37.67/hr. = \$78,361

<u>Fringe Benefits:</u> Fringe benefits include social security, retirement and health insurance. Personnel salaries and fringe have been budgeted to account for a three percent increase each year. Fringe benefits are calculated at a rate of 7.65% of salary for social security and 10.51% of salary for retirement. An additional \$4,929 per employee is charged annually for health insurance.

1 Stock Assessment Scientist

\$19,160

<u>Travel:</u> The budget includes monies to be used for in-state transportation and lodging for any overnight travel.

Lodging (in-state)

\$ 2,367

Meals (in-state) \$ 1,915 Transportation-Ground (in-state) \$ 2,315

<u>Supplies:</u> General office furniture, computer equipment, printing and duplicating and telephone costs are included in this item.

Office and Data Processing Supplies

\$10,125

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

Office Space Rent

TOTAL YEAR 1 (JOB 3)

\$118,958

\$ 4,715

Job 3 Amount for Five Years:

Table 3. Senior Stock Assessment Scientist Funds for Five Years.

Fiscal Year												
	2007-08		2008-09		2009-10		2010-11		2011-12		5 Yr. Totals	
Personnel	\$	78,127	\$	80,469	\$	82,883	\$	78,361	\$	87,930	\$	414,778
Fringe Benefits	\$	15,431	\$	16,710	\$	17,211	\$	19,160	\$	18,259	\$	85,338
Travel	\$	3,252	\$	3,252	\$	3,252	\$	6,597	\$	3,252	\$	16,260
Equipment	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-
Supplies	\$	9,010	\$	9,010	\$	9,010	\$	10,125	\$	9,010	\$	45,050
Contractual	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-
Construction	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-
Other	\$	3,600	\$	3,600	\$	3,600	\$	4,715	\$	3,600	\$	18,000
Total	\$	109,420	\$	113,041	\$	115,956	\$	118,958	\$	122,051	\$	579,426

^{*} Each subsequent year beyond year 1 assumes a 3% annual legislative salary increase.

JOB 4

Title: Fisheries Independent Assessment Program

Objectives:

The Fisheries Reform Act of 1997 established a process for preparing coastal FMPs in North Carolina. The goal of these plans is to ensure the long-term viability of the state's economically important species or fisheries. The purpose of this request is to augment the NCDMF ability to collect and analyze essential data used to produce the FMPs for recreationally important species and to help determine overfishing status, levels of spawning stock biomass, mortality, recruitment and sustainable harvest levels which form the basis for all management actions recommended in FMPs. Specific objectives are:

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

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

Procedures:

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

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

The five river systems sampled are the Neuse, Pamlico, Pungo, New and Cape Fear rivers. Each system is overlaid with a one-minute by one-minute grid system (equivalent to one square nautical mile) and delineated into shallow (<6 feet) and deep (>6 feet) depth strata using bathymetric data from NOAA navigational charts and field observations. NCDMF staff also considers such factors as obstructions to fishing, safety, and accessibility when evaluating each grid for inclusion in the sampling universe. Each of the systems is further segregated into similar sized areas to insure that samples are evenly distributed throughout each system (area strata). The New and Cape Fear rivers, which are smaller rivers, will be segregated into two areas: lower and mid. Additionally the Cape Fear River will only be set for shallow strata due to flow conditions that impact the catchability of the fishing gear in the deep

water. The SAS procedure PLAN is used to randomly select sampling grids within each area (SAS Institute 1985). Within a month for the Pamlico district, 32 core samples are completed (8 areas x twice a month x 2 samples-shallow and deep). Within a month for the southern district (New and Cape Fear rivers) 24 core samples are completed (Cape Fear - 2 areas x twice a month x 1 shallow sample and New River 2 areas x twice a month x 2 samples-shallow and deep). Sampling gear consists of an array of nets consists of 30-yard segments of 3, $3\frac{1}{2}$, 4, $4\frac{1}{2}$, 5, $5\frac{1}{2}$, 6, and $6\frac{1}{2}$ inch stretched mesh webbing (240 yards of gill net). Catches from this array of gill nets, combined together, comprise a single sample. Gear is typically deployed within an hour of sunset and fished the following morning to keep all soak times at a standard 12 hours. All nets are floating and fish the entire water column.

Physical and environmental conditions, including surface and bottom water temperature (°C), salinity (ppt), dissolved oxygen (mg/L), bottom composition, as well as, a qualitative assessment of sediment size, are recorded upon retrieval of the nets on each sampling trip. 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*), striped bass, and red drum captured in good condition are tagged and released.

Atlantic Ocean

State waters in the Atlantic Ocean from the breakers out to 3 miles are sampled from New River Inlet to the South Carolina line segregated into Onslow and Long bays by Frying Pan Shoals. The ocean is overlaid with a one-minute by one-minute grid system. Areas will be delineated into known hard bottom and soft bottom habitats. Soft bottom habitats will be sampled to limit the influence of different habitat type. The SAS procedure PLAN is used to randomly select sampling grids within each area (SAS Institute 1985). Within a quarter, 16 core samples are completed (2 areas x eight a quarter). No more than 2 samples per week in an area and 4 samples per month in an area will be collected. Sampling gear consists of an array of 30-yard net segments of $2\frac{1}{2}$, 3, $3\frac{1}{2}$, 4, $4\frac{1}{2}$, 5, $5\frac{1}{2}$, and 6 inch stretched mesh webbing (240 yards of gill net). Catches from this array of gill nets, combined together, comprise a single sample. Gear is typically deployed within an hour of sunset and fished the following morning to keep all soak times at a standard 12 hours. All nets are floating and fish the entire water column.

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

Location:

Coastal counties of North Carolina

Major Product 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: Rich Carpenter, Katy West, David Taylor

Positions vacant at this time

Year 1 Budget Justification:

<u>Personnel</u>: The project will fund one permanent Biologist I and five permanent Technician IIs. It will also fund a one temporary Technician II.

1 Marine Fisheries Biologist I	2,080 hours x \$18.39/hr. = \$ 38,246
5 Marine Fisheries Tech. II	10,400 hours x \$13.86/hr= \$144,166
1 Temp. M. F. Tech. II (11 mth.)	1,907 hours x \$13.69/hr. = \$ 26,107

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

<u>Fringe Benefits:</u> Fringe benefits include social security, retirement and health insurance. Personnel salaries and fringe have been budgeted to account for a three percent increase each year. Fringe benefits are calculated at a rate of 7.65% of salary for social security and 10.51% of salary for retirement. An additional \$4,929 per employee is charged annually for health insurance. The temporary technician only has social security as fringe.

1 Marine Fisheries Biologist I	\$ 11,875
5 Marine Fisheries Technician II	\$ 50,826
1 Temp. M. F. Technician II (11 mth.)	\$ 1,997

<u>Travel:</u> The budget includes monies to be used for in-state transportation and lodging for any overnight travel.

Lodging (in-state)	\$ 5,500
Meals (in-state)	\$ 6,500

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

Office and Scientific Supplies \$ 63,232

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

Office Space Rent \$ 16,468

TOTAL YEAR 1 (JOB 4) \$ 364,917

Job 4 Amount for Five Years:

Table 4. Fisheries Independent Assessment Program Funds for Five Years.

Fiscal Year												
		2007-08	2	2008-09	008-09 2009-1		<mark>2010-11</mark>		2011-12		5 Yr. Totals	
Personnel	\$	201,217	\$	206,609	\$	212,799	\$	208,519	\$	225,775	\$	1,065,554
Fringe Benefits	\$	54,264	\$	54,713	\$	55,610	\$	64,698	\$	57,489	\$	278,607
Travel	\$	12,000	\$	12,000	\$	12,000	\$	12,000	\$	12,000	\$	60,000
Equipment	\$	-	\$	-	\$	-	\$	-	\$	-	\$	=
Supplies	\$	63,232	\$	63,232	\$	63,232	\$	63,232	\$	63,232	\$	316,160
Contractual	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-
Construction	\$	_	\$	-	\$	-	\$	_	\$	_	\$	-
Other	\$	14,000	\$	14,000	\$	14,000	\$	16,468	\$	14,000	\$	70,000
Total	\$	344,713	\$	350,554	\$	357,641	\$	364,917	\$	372,496	\$	1,790,321

^{*} Each subsequent year beyond year 1 assumes a 3% annual legislative salary increase.

Grand Total Amount for Five Years:

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

Fiscal Year										
	2007-08	2008-09	2009-10	2010-11	2011-12	Grand Total				
Jobs 1-4 Totals	\$ 1,322,020	\$ 1,343,770	\$ 1,365,148	\$ 1,387,069	\$ 1,409,772	\$ 6,827,779	-			
* Fack as because the combination of constant and constan										

^{*} Each subsequent year beyond year 1 assumes a 3% annual legislative salary increase.