

Cooperative Research Program

CRP AWARD STATUS REPORT

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PREFACE

Cooperative research programs allow scientists and fishermen to bring valuable tools and experience to the objectives of a research project. Scientists realize that fishermen have knowledge, skills, and vessels that would not otherwise be available for research. Participating fishermen recognize that the information collected will not be used in management decisions unless it is scientifically credible. The interaction between fishermen and scientists not only improves the design and implementation of research studies, but also improves the knowledge and acceptance of scientific results that are produced by such studies. Working together, fishermen and scientists can improve our understanding of the complex interactions between fishery resources and fishing practices.

The intent of the cooperative research program in the Southeast Region is to utilize the collective experience of fishermen and scientists to provide the best advice to fishery managers based on fishing experience and sound scientific research procedures. The Cooperative Research Program (CRP) focuses upon critical management needs that have been identified by managers and the National Marine Fisheries Service (NMFS) 2001 Strategic Plan for Fisheries Research.¹ Goals one, two, and five are particularly important. As with the Marine Fisheries Initiative (MARFIN), CRP is coordinated with other programs to provide regional assessments of fishery resources. The cooperative research program provides the necessary programmatic integration through cooperative planning, accomplishment of program activities, and sharing of results.

The cooperative research program was created to utilize the total spectrum of knowledge concerning the marine fishery resources of the Southeast Region. The results of this program will improve management and the acceptance of management decisions in the southeast. Results will be disseminated and made available to managers in a timely manner. The initial focus of the program included research on life history studies of important commercial and recreational species, release mortality of red drum as influenced by hook type, characterization of the commercial catch of snapper-grouper in the south Atlantic, description and characterization of the pelagic longline fishery for highly migratory species, and fishers views in the Caribbean concerning vessel capacity and effort reduction programs. Subsequently, research directions have expanded to include bycatch reduction methodology for sea turtles and other species, development of electronic logbook systems, distributional patterns and life history characteristics of various billfish species, and cooperative shark research.

¹NMFS Strategic Research Goals:

1. Provide scientifically sound information and data to support fishery conservation and management.
2. Through conservation engineering research contribute to efforts to reduce bycatch and adverse effects on EFH, promote efficient harvest of target species, and to improve data from fishery surveys.
3. Through economic and ecological research on marine communities and ecosystems, provide scientific data and information to increase long-term economic and social benefits to the Nation from living marine resources.
4. Improve the fishery information system.
5. Improve the effectiveness of external partnerships with fishers, managers, scientists, conservationists, and other interested groups.

HISTORY OF THE COOPERATIVE RESEARCH PROGRAM (CRP)

The CRP is a competitive Federal assistance program that funds projects seeking to increase and improve the working relationship between researchers from NMFS, state fishery agencies, universities, and fishermen. Congress initiated the cooperative research funding to assist the NMFS to improve the confidence that both commercial and recreational fishermen have in the data and analyses performed in support of fisheries management. The authorizing statute for this program is 15 U.S.C. 713c-3(d). Each year a solicitation for proposals is published in the Federal Register (see Appendix 3).

The CRP's principal goal is to provide a means of involving commercial and recreational fishermen in the collection of fundamental fisheries information to support the development and evaluation of management and regulatory options. The program is sponsored by the Southeast Fisheries Science Center, assisted by the State/Federal Liaison Branch located in the Southeast Regional Office. Appendix 1 lists the State/Federal Liaison Branch personnel.

Funding for the program began in the northeast and was extended to the southeast in FY 2001 with an initial funding level of \$2.5 million for the southeastern component of the CRP. Because of the long history of cooperative research efforts between the Gulf & South Atlantic Fisheries Foundation, Inc. (Foundation) and the Southeast Fisheries Science Center (SEFSC), the SEFSC funded a project to the Foundation to hold a cooperative research constituency workshop in Tampa, Florida, on April 17-18, 2002. The purpose of the workshop was to establish objectives and research priorities for the southeastern CRP. The results of that meeting were presented in the 2003 CRP Annual Report.

As a result of the 2002 workshop, the initial focus of work was as follows:

1. Cooperative research on development of gear modifications and fishing practices to reduce turtle takes in U.S. Atlantic pelagic longline fisheries.
2. Cooperative research with the Foundation on Bycatch Reduction Device (BRD) effectiveness and on the effectiveness of high opening Turtle Excluder Devices.
3. Cooperative research to obtain reef fish biological samples from the Gulf of Mexico.
4. Cooperative research with the Southeast Area Monitoring and Assessment Program (SEAMAP).
5. Cooperative statistics data collection.
6. Cooperative research on age structure of adult red drum in the Gulf of Mexico.
7. Cooperative shark research.
8. Cooperative research on essential habitat requirements for blue and white marlin and associated species.
9. Cooperative research on characterization of shrimp and reef fishery bycatch.
10. Cooperative research to collect biological specimens from sea bass in the South Atlantic Fishery Management Council's region of concern.
11. Cooperative archival tagging of bluefin tuna.

Appendix 1. NMFS Southeast Region State/Federal Liaison Branch Staff

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Appendix 2a. Active CRP Project Summaries
(Describes the active CRP projects that have been funded but not yet completed)

NA10NMF4540110

CRP PROJECT SUMMARY

Project Title: Estimating Discard and Bycatch Rates in the Commercial Handline Fishery for Red Snapper under the IFQ Program

Project Start Date: September 1, 2010

Name, Address, and Telephone Number of Applicant:

Texas Tech University
Department of Biology
Lubbock, Texas 79409-3131

Principal Investigator(s) and Brief Statement of Qualifications:

Dr. Sandra Diamond, has over 30 years experience
Dr. Greg Stunz, has over 20 years experience

Project Goal and Objectives: To evaluate changes in discard rates for red snapper and bycatch of other species under the IFQ program compared with past management regimes; To compare discard and bycatch rates of fishermen holding different levels of quota shares in different regions of the Gulf of Mexico; To provide estimates of discard and bycatch rates and discard mortality for use in the red snapper stock assessment; To reduce the amount of discarding and bycatch and improve survival of released fish in the commercial handline fishery

Specific Priority(ies) in Solicitation to which Project Responds:

This project responds directly to priority A (Commercial Finfish); 4.

Summary of Work: This project will obtain data on discard and bycatch rates in the commercial handline fishery under the IFQ program using 1 year of onboard observations collected from cooperating vessels. While onboard, observers will document the number of fish caught and kept, as well as the fish caught and discarded. Discarded fish will be assessed for their condition, including signs of barotraumas, injury, and their response to stimuli in order to predict their probability of mortality. Fish will be tagged with passive tags before discarding to estimate movements and survival of discarded fish. At least twenty-five fish to be discarded will be measured, and hard parts obtained from a fixed proportion of the fishing lines. In addition, the recipient will test the feasibility of using descender hooks in the fishery to rapidly recompress fish by determining whether these hooks could be deployed during commercial fishing operations, and how they might be deployed in future.

Project Funding:

Federal	\$264,801
Non-Federal	\$0
Total	\$264,801

NA11NMF4540119

CRP PROJECT SUMMARY

Project Title: Stock structure of finetooth shark (*Carcharhinus isodon*) in U.S. Waters

Project Start Date: September 1, 2011

Name, Address, and Telephone Number of Applicant:

Texas A&M Research Foundation
College Station, Texas 77843-3578
979-845-8629

Principal Investigator(s) and Brief Statement of Qualifications:

Dr. John R. Gold has 34 years experience in fish genetics, including several studies of stock structure of marine fishes

Project Goal and Objectives: Experimental objectives of the proposed project are to (i) test rigorously whether juvenile finetooth sharks on three nursery grounds are the products of discrete genetic reproductive units, (ii) provide estimates of the effective number of breeders for each of the three nursery areas, and (iii) assess whether adults reproducing in the eastern Gulf of Mexico and the U.S. Atlantic coast mix off of south Florida during the winter. The overall goal of the project is to provide critical population-genetics data that will be useful in assessment and allocation of the finetooth shark resource in US waters.

Specific Priority(ies) in Solicitation to which Project Responds: The Cooperative Research Grant priority area addressed is *Commercial Finfish*. Specifically, the project proposed will address Priority 1e by providing molecular tools that can be used ‘to refine estimates of long-term biological productivity of the stock(s),’ and Priority 1f by ‘examining the feasibility of using genetic methods for tag-and-recapture of exploited species.’ The species under study (the finetooth) is listed as an HMS species of concern.

Summary of Work: (1) Obtain tissues (fin clips) from 75-100 young of the year and juvenile finetooth sharks sampled from three localities: one in the U.S. South Atlantic and two in eastern Gulf of Mexico; (2) Obtain tissues (fin clips) from 50-100 adult and juvenile finetooth sharks from the southern part of peninsular Florida; (3) Assay genotypes from 15-25 nuclear-encoded microsatellite for all individuals; (4) Execute data analysis to answer the following questions: (a) Are there genetically defined breeding stocks of finetooth sharks in U.S. waters? (b) Are there differences in the effective number of breeders using nursery habitat in the U.S. South Atlantic and eastern Gulf of Mexico? (c) Do adults mix in areas distinct from nursery and breeding grounds?

Project Funding:

Federal	\$93,807
Non-Federal	\$0
Total	\$93,807

NA12NMF4540082

CRP PROJECT SUMMARY

Project Title: Population genetics and demographic studies of three deep-water snapper species inside and outside of marine protected areas (MPAs) of the west coast of Puerto Rico

Project Start Date: September 1, 2012

Name, Address, and Telephone Number of Applicant:

Texas A&M Research Foundation
College Station, Texas 77843-3578
979-845-8629

Principal Investigator(s) and Brief Statement of Qualifications:

Dr. John R. Gold has 34 years experience in fish genetics, including several studies of stock structure of marine fishes

Project Goal and Objectives: The experimental objectives of the proposed project are to: (i) sample age zero individuals of three deep-water snapper species (silk snapper, blackfin snapper, and vermilion snapper) from localities inside and outside of Marine Protected Areas (MPAs) along the west coast of Puerto Rico; (ii) assess population structure and connectivity of each species across the sampling surface and document genetic demography (genetic variation, rare-allele distribution, and the effective number of breeding adults contributing to the cohort) for each species at each locality; and (iii) obtain data on juvenile abundance and other fishery parameters (catch per unit effort for each snapper species, species composition, total catch per unit effort and total weight by species) at each locality. Data on juvenile abundance and other fishery parameters will be provided to the NMFS partner for use in evaluation of spatial and temporal abundance trends of each species. Up to eight localities are projected for sampling, four of which are current MPAs. The overall goals of the project are to (i) provide critical population genetic data needed to fill the information gap on the three most important, commercially harvested deep-water snapper species in the U.S. Caribbean, (ii) assess connectivity and juvenile abundance among the MPAs and between the MPAs and non-restricted fishing grounds, (iii) assess the genetic status of the four existing MPAs, and (iv) assess whether individual localities (MPAs and non-MPAs) represent source or sink populations, as inferred from genetic variation, distribution of rare alleles, and effective number of breeding adults giving rise to cohorts at each locality.

Specific Priority(ies) in Solicitation to which Project Responds: The specific CRP priority area to which the project primarily responds is: Caribbean Fisheries (Priority #4). The Sub-priority to be addressed is 4a: 'Cooperative projects between scientists and industry members...to enhance studies of the effectiveness of MPAs.' The three species under study are deep-water snappers and are listed as 'Species of Concern' by the Caribbean Fishery Management Council and as 'Undergoing Overfishing' and are considered to be approaching an 'Overfished Condition' by NOAA Fisheries.

Summary of Work: (i) Acquire samples of 75-100, age-0 individuals for each species at eight localities along the west coast of Puerto Rico; (ii) acquire genotypes for each individual at 15-20 nuclear-encoded microsatellites; and (iii) acquire relevant fishery parameters during each trip

at each locality for use in NMFS assessments. Questions to be answered include: (a) Are there differences in each species in population structure? (b) What are the historical and present-day patterns of connectivity (migration) in each species among MPAs or between MPAs and non-restricted fishing grounds? (c) Are there significant effects on genetic variation, distribution of rare alleles, and the effective number of breeding adults contributing to cohorts due to locality, time of sampling, or species? and (d) Are there locality effects on genetic parameters that identify MPAs as source populations and distinguish MPAs from non-restricted fishing grounds?

Project Funding:

Federal	\$189,877
Non-Federal	\$0
Total	\$189,877

NA12NMF4540083

CRP PROJECT SUMMARY

Project Title: Stock structure of the smooth dogfish (*Mustelus canis*) in U.S waters

Project Start Date: September 1, 2012

Name, Address, and Telephone Number of Applicant:

Texas A&M Research Foundation
College Station, Texas 77843-3578
979-845-8629

Principal Investigator(s) and Brief Statement of Qualifications:

Dr. John R. Gold has 34 years experience in fish genetics, including several studies of stock structure of marine fishes

Project Goal and Objectives: Experimental objectives of the proposed project are to (i) test rigorously whether discrete genetic stocks of smooth dogfish sharks occur in U.S. waters, (ii) generate information on demography (growth/decline) of smooth dogfish sharks at several geographic sample localities as it might relate to both mortality and recruitment, (iii) assess patterns of long-term and contemporaneous migration of smooth dogfish sharks among geographic sample localities, and (iv) develop a straightforward, reliable, molecular-based forensics tool to differentiate among different species of smooth dogfish.

Specific Priority(ies) in Solicitation to which Project Responds: The Cooperative Research Grant priority area addressed is *Commercial and Recreational Finfish*. Specifically, the project proposed will address Priority 1e by providing a molecular assessment of population structure and demography that can be used 'to refine estimates of longterm biological productivity of the stock(s).' The species under study (the smooth dogfish) is listed as an HMS species of concern.

Summary of Work: (1) Obtain tissues (fin clips) from 50-100 juvenile and adult smooth dogfish sampled from each of five localities: three in the U.S. Atlantic and two in the Gulf of Mexico; (2) Obtain 10-20 supplementary samples from each of the following: the Florida smoothhound, *Mustelus norrisi*; the Gulf of Mexico smoothhound, *Mustelus sinusmexicanus*; and the insular subspecies, *Mustelus canis insularis*; (3) Assay genotypes from 15-20 nuclear-encoded microsatellites and a ~600 base-pair sequence of the mitochondrially encoded ND-2 gene for all individuals; (4) Execute data analysis to answer the following questions: (a) Are there genetically defined stocks of smooth dogfish sharks in U.S. waters? (b) Are there differences in genetic demography (growth/decline) among discrete sample localities and/or genetically defined stocks? (c) What are the long-term patterns of migration between discrete sample localities and/or genetically defined stocks? (d) Do patterns of migration differ by sex? and (e) What are the historical and contemporary (inbreeding) effective population sizes at each discrete sample locality and/or each genetically defined stock?; (5) Develop panels of microsatellites and/or mitochondrial DNA sequences to unequivocally differentiate among *M. canis canis*, *M. canis insularis*, *M. norrisi*, and *M. sinusmexicanus*.

Project Funding:

Federal	\$95,743
Non-Federal	\$0
Total	\$95,743

NA13NMF454054

CRP PROJECT SUMMARY

Project Title: Identification and characterization of reef fish spawning aggregations along Florida's Atlantic coast.

Project Start Date: September 1, 2013

Name, Address, and Telephone Number of Applicant:

Florida Fish and Wildlife Conservation Commission
100 8th Ave S.
St. Petersburg, FL. 33701
(727)896-8626

Principal Investigator(s) and Brief Statement of Qualifications: Dr. Cameron B. Guenther, Dr. Darin Topping, Mrs. Judy Jamison - The principal investigators have over 40 years of fisheries research and analytical experience, including the development and implementation of numerous projects to assess reef fish resources.

Project Goal and Objectives: The primary objectives of the proposed project are to 1) utilize industry knowledge to identify and characterize spawning related aggregations of red snapper, gag and scamp in the South Atlantic waters off Florida's east coast and 2) develop and test the utility of a fisheries-independent survey to monitor spawning related aggregations in the South Atlantic using nondestructive methods (hydroacoustic and ROV video surveys) coupled with biological sampling to provide key demographic data.

Specific Priority(ies) in Solicitation to which Project Responds: 1.i Projects to document the knowledge of commercial (and recreational) fishers to identify reef fish spawning aggregation (FSA) sites and develop annual monitoring of FSAs for abundance indices and efficient biological sampling to assess size and age structure in the population. 1.e Data collection projects to improve life history information on commercial and recreational finfish and elasmobranch species. Improved information about the age structure of the catch, and improved information on the reproductive characteristics of the stock.

Summary of Work: Nine species of the grouper-snapper complex are currently undergoing overfishing and are overfished or approaching overfishing along the southeastern United States coast, including red snapper, gag and scamp. Assessing the status and recovery of these stocks requires the availability of statistically-rigorous, fisheries-independent data that reflect the status of the population as a whole rather than the portion taken by the fishery. This is especially important for these species given current management restrictions as well as the potential for future management restrictions. We propose to develop and test the utility of an efficient fisheries-independent survey that takes advantage of spawning related aggregation behavior to assess the status of adult reef fish populations. The proposed survey would consist of three complementary methods: 1) a hydroacoustic survey to identify and characterize potential spawning aggregations and geomorphological characteristics of aggregation sites, 2) a ROV video survey to characterize the species composition and size structure of identified aggregations, and 3) a hooked-gear survey to provide biological material required to estimate key demographic parameters. At the completion of the proposed project, we will develop recommendations as to the implementation of a statistically-rigorous, fisheries-independent monitoring program for adult reef fish, including

consideration of overall survey design, characterization of habitat-based sampling strata, and estimated sampling effort required to detect meaningful changes in key population metrics.

Project Funding:

Federal	\$299,293
Non-Federal	\$0
Total	\$299,293

NA13NMF454056

CRP PROJECT SUMMARY

Project Title: Discard Mortality of Carcharhinid Sharks in the Florida Commercial Shark Fisher

Project Start Date: September 1, 2013

Name, Address, and Telephone Number of Applicant:

Center for Shark Research
Mote Marine Laboratory
1600 Ken Thompson Parkway
Sarasota, FL 34236
(941) 388-4441

Principal Investigator(s) and Brief Statement of Qualifications: Nicholas Whitney, Ph.D. studied shark behavioral ecology, reproduction, and population genetics for more than 14 years, and for the past five years has applied accelerometry to the study of shark activity and fine-scale behaviors. Robert E. Hueter, Ph.D. has 39 years' experience in shark biology and ecology, including the application of electronic tags to various shark species.

Project Goal and Objectives: The proposed study would be the first to quantify post-release mortality and behavioral effects of capture on sandbar (*Carcharhinus plumbeus*) and blacktip sharks (*C. limbatus*) caught in the Florida commercial shark fishery, and will integrate conventional and novel techniques that are revolutionizing the study of post-release mortality in coastal species.

Specific Priority(ies) in Solicitation to which Project Responds: This work directly fulfills NMFS priority 1. b. *Commercial and Recreational Finfish: discard mortality rates used in current assessments are generally based on small numbers of observations or are unknown. Research is needed to improve estimates of discard mortality rates and must account for the effects of fish size, gear, area, season and depth of fishing.* and also focuses on Highly Migratory Species (HMS) of concern: the sandbar shark and blacktip shark in two regions (Gulf and Atlantic Coasts of Florida).

Summary of Work: This will be accomplished by working with Florida commercial shark fishers to tag animals with acceleration data loggers (ADLs), a relatively new and innovative technique with increasing application in fisheries research. ADLs record animal movements and body posture (*i.e.*, tailbeat frequency, acceleration amplitude, rolling or inability to remain upright) at sub-second intervals, and therefore provide high-resolution information about mortality, swimming abnormalities, and recovery time. They thus provide higher resolution information than satellite tags at a fraction of the cost, and are effective in coastal animals that do not show the diving behavior used as a proxy for recovery time in satellite tagging studies. ADL data will be compared against capture indices and blood-based stress indicators (e.g., lactate, pCO₂, and blood pH among others) to close the loop between these measures and actual mortality or recovery time. We will use these integrated methods along with hook timers to quantify the effect of hooked time on physiology and post-release swimming behavior in these two important commercial species.

Project Funding:

Federal	\$235,847
Non-Federal	\$0
Total	\$235,847

NA14NMF4540061

CRP PROJECT SUMMARY

Project Title: Estimating discard mortality of shallow and deep water reef fishes using conventional and telemetry tags

Project Start Date: September 1, 2014

Name, Address, and Telephone Number of Applicant:

Department of Applied Ecology
Center for Marine Sciences and Technology
North Carolina State University
303 College Circle
Morehead City, NC 28557
Tel: (252) 222-6341
Fax: (252) 222-6311

Principal Investigator(s) and Brief Statement of Qualifications: Jeffrey A. Buckel, Professor, North Carolina State University. >20 years as a fisheries ecologist and 10 years' experience working on reef fishes. Ruoying He, Professor, North Carolina State University, >15 years' experience as a physical oceanographer.
NOAA/NMFS partner: G. Todd Kellison, Chief, Fisheries Ecosystems Branch, NOAA Fisheries. >20 years as a fisheries ecologist and >15 years experience working on reef fishes.
Cooperating fisherman: Thomas E. Burgess, Commercial Fisherman. >30 years experience commercial fishing, highliner in south Atlantic trap fishery, and former SAFMC member.

Project Goal and Objectives: We propose a pilot study to determine the efficacy of recompression for shelf-break reef fishes in the US south Atlantic. Deepwater reef fish will be caught with hook and line and recompressed using a descender device. Immediate condition upon release will be assessed at depth with a video camera and long-term mortality will be monitored through the use of telemetry tags, submersible fixed receivers, and an underwater glider fitted with a receiver.

Specific Priority(ies) in Solicitation to which Project Responds: Our research on shallow- and deep-water reef fishes will directly address the NOAA CRP priorities to: improve "estimates of discard mortality rates" and test "...the effect of rapid recompression (e.g. via descender devices) on post-release condition..." for reef fishes.

Summary of Work: To use a novel tagging approach to directly estimate discard mortality of gray triggerfish (*Balistes capriscus*) in shallow waters (29-37m) of the US south Atlantic (North Carolina). A "control" group will be caught in traps and tagged with conventional tags on the seafloor using SCUBA. Simultaneously, gray triggerfish in more "compromised" conditions (e.g., barotrauma, hook trauma) will be tagged, released at surface, and available to water-column predators when swimming back to bottom. Discard mortality will be estimated from return rates of fish in "compromised" conditions relative to return rates of "control" fish. We will control for factors such as fish size, gear, season, and depth of fishing. For deepwater (~50-175 m) reef fishes caught at the shelf break, barotrauma is thought to result in 100% discard

mortality; this is problematic for fishes that have a target fishing mortality rate of zero but where catch and discarding still occur (e.g., speckled hind, warsaw groupers).

Project Funding:

Federal	\$254,122
Non-Federal	\$0
Total	\$254,122

NA14NMF4540062

CRP PROJECT SUMMARY

Project Title: Genetic stock structure and connectivity of queen triggerfish (*Balistes vetula*)

Project Start Date: September 1, 2014

Name, Address, and Telephone Number of Applicant:

Department of Coastal Sciences
The University of Southern Mississippi Gulf Coast Research
Laboratory, Ocean Springs, MS, U.S.A.

Principal Investigator(s) and Brief Statement of Qualifications: The project will be conducted in E. Saillant's conservation genetics laboratory at the University of Southern Mississippi. Saillant's research during the past several years has focused on stock structure and genetic demography in several reef fishes in the Gulf of Mexico and Caribbean regions including several lutjanids and another Balistidae, the gray triggerfish.

Project Goal and Objectives: The proposed project will fill an important gap by providing a first assessment of genetic stock structure of queen triggerfish in U.S. waters and connectivity with other regional stocks in the Caribbean. A robust panel of microsatellite loci will be employed to achieve resolution of fine scale genetic differences during analysis of stock structure. Genetic variation among queen triggerfish from 4 localities in the U.S. Caribbean (East and West coasts of Puerto Rico, St Croix and St Thomas) and one locality on the Southeast Atlantic coast (Jupiter, FL) will be assessed. Reference samples from the French Antilles (La Martinique), Panama and Belize will be included in the study in order to evaluate connectivity between U.S. populations and other geographic stocks in the Caribbean and define a genetic stock structure model for the species in the region.

Specific Priority(ies) in Solicitation to which Project Responds: The project targets a species listed as species of concern by the Caribbean Fisheries Management Council (CFMC) and the data collected will aid in recovering, maintaining, or improving the status of fisheries stocks as listed in the CRP program priorities. The specific program priority addressed by the project is Priority 1 (Commercial and Recreational Finfish), sub-priority 1e. Data collection projects to improve life history information on commercial and recreational finfish; Improved information on the productive characteristics of the stock.

Summary of Work: We will assess possible occurrence of genetic discontinuities and barriers to gene flow indicating reproductive isolation between regions, and test for a possible isolation by distance pattern of population structure where genetic distance increases as a function of geographic distance reflecting limited dispersal capability. We will also use coalescent simulations approaches to determine rates and patterns of long term migrations in the region and test alternative hypotheses regarding directionality of gene flow, in particular examining the potential primary role of regional currents such as the Caribbean and Antilles currents in driving gene flow and connectivity in the region. The baseline genetic data will be available for future genetic monitoring of queen triggerfish and assessment of demographic dynamics and recruitment in regional stocks.

Project Funding:

Federal	\$99,979
Non-Federal	\$0
Total	\$99,979

NA14NMF4540063

CRP PROJECT SUMMARY

Project Title: Genetic monitoring and stock structure of two large coastal sharks, using high throughput next-generation sequencing

Project Start Date: September 1, 2014

Name, Address, and Telephone Number of Applicant:

Department of Life Sciences
Texas A&M University-Corpus Christi, 6300 Ocean Drive, Unit
5844, Corpus Christi, TX 78412-5844
Phone 361 – 825 - 3882.

Principal Investigator(s) and Brief Statement of Qualifications:

Dr. David S. Portnoy (Voice:361/825-2030; e-mail: david.portnoy@tamucc.edu) has > 10 years experience working in marine systems and using molecular genetics to address conservation and management issues in long-lived marine fishes, including sharks
Dr. John R. Gold (Voice: 979-847-8778; e-mail: goldfish@tamu.edu) has > 37 years of experience in fish genetics, including several studies of stock structure of marine fishes

Project Goal and Objectives: Experimental objectives are to: (i) establish baseline data, using next-generation sequencing, for genetic monitoring of critical nursery areas for blacktip and scalloped hammerhead sharks; (ii) establish species databases of high-resolution genetic tags for individuals sampled in nursery areas; (iii) estimate effective number of breeders and minimum number of female breeders in each nursery for each of species; (v) examine pattern(s) of stock structure for both species in the Gulf of Mexico and U.S. Atlantic; and (iv) develop cutting-edge methodologies to assess of stock structure and genetic monitoring for application in other exploited sharks.

Specific Priority(ies) in Solicitation to which Project Responds: The Cooperative Research Project priority area addressed is Commercial Finfish, specifically PRIORITY 1E by providing molecular tools that can be used ‘to refine estimates of long-term biological productivity of the stock(s),’ and PRIORITY 1F by ‘examining the feasibility of using genetic methods for tag-and-recapture of exploited species.’ Both species under study are listed as HMS species of concern.

Summary of Work: (1) Obtain tissues (fin clips) from ~100 young-of-the-year blacktip and 100 young-of-the-year scalloped hammerhead sharks from each of three nursery areas; one in the U.S. Atlantic and two in the Gulf of Mexico; (2) Obtain tissues (fin clips) from ~25 adult blacktip sharks from outside of each nursery area; (3) Obtain an additional 50 young-of-the-year blacktip sharks each from two sites in the north central Gulf of Mexico and one off of Campeche Mexico; (4) Generate reduced-representation libraries for outsourced Illumina (next-generation) sequencing in order to generate a highly replicable sample of many hundreds to thousands of polymorphic (variable) genetic markers located randomly across the genome of both species; (5) Execute data analysis to accomplish the following objectives: (a) develop a baseline estimate of genetic diversity for each species-nursery area combination for use in genetic monitoring, (b) detect parent-offspring relationships, (c) estimate the effective number

of breeders and minimum number of female breeders in each sampled nursery, (d) create and archive genetic tags based on variable genetic markers for all individuals sampled, and (e) provide data for an assessment of stock structure (both species) between U.S. South Atlantic and Gulf of Mexico as well as within the Gulf of Mexico.

Project Funding:

Federal	\$157,709.00
Non-Federal	\$7,570.00
Total	\$165,279.00

NA14NMF4540064

CRP PROJECT SUMMARY

Project Title: Characterization of Reproductive Biology and Somatic Relationships of Gulf Menhaden through an Academic, Government, and Industry Partnership

Project Start Date: September 1, 2014

Name, Address, and Telephone Number of Applicant:

Nancy J. Brown-Peterson and Robert T. Leaf
Department of Coastal Sciences
The University of Southern Mississippi
703 East Beach Dr.
Ocean Springs, MS 39564
228-872-4288

Principal Investigator(s) and Brief Statement of Qualifications: Nancy J. Brown-Peterson, Research Associate at the University of Southern Mississippi (USM), is principal investigator for this project. Ms. Brown-Peterson has over 30 years of experience with fish reproduction, has served as co-PI on a previous CRP study, and has a strong publication record in fish reproduction. Robert T. Leaf, Assistant Professor at USM, will be co-PI on the project. Dr. Leaf has expertise in life-history theory, stock assessment, modeling, and the environmental drivers of fish production, and was a participant on SEDAR 32A. Mr. Joseph Smith is a research fishery biologist with NOAA Fisheries and will act as the project's NOAA Fisheries Cooperator. He has expertise in the biology and fishery of Gulf and Atlantic Menhaden, and will also coordinate ageing of the scale samples within the NMFS Beaufort Laboratory. Commercial fishing industry cooperators for the project include Mr. Ron Lukens of Omega Protein, Mr. Danny Edgar of Louisiana Bait Products, and commercial winter shrimpers in Louisiana. Thu Bui, an agricultural extension agent at Louisiana State University, will coordinate with the shrimpers to facilitate sample collections.

Project Goal and Objectives: The commercial fishery for Gulf Menhaden (*Brevoortia patronus*) is one of the most economically important fisheries in the Gulf of Mexico (GOM). The results of the most recent stock assessment for Gulf Menhaden (SEDAR 32A, August 2013) indicate that the stock is resilient to commercial harvest and is not currently overfished. However, the re-examination of reproductive characteristics using modern, state-of-the-art methods is a high priority research need for management of this stock, as stated in SEDAR 32A, because the assessment results may be sensitive to this parameter. To maintain long-term fishery sustainability, we propose to characterize the reproductive biology of Gulf Menhaden in the northern GOM to estimate size- and age-specific fecundity, the maturity schedule (using GSI and histological analysis), sex ratio, and spawning frequency.

Specific Priority(ies) in Solicitation to which Project Responds: (CRP) Program Priority 1e. Additionally, we will analyze lipid and fatty acid composition of collected fish. This will serve to develop a leading index of fish oil yield of the GOM Gulf Menhaden stock.

Summary of Work: We hypothesize that this measurement may relate to the magnitude of egg production of the stock. We will work with cooperating commercial fishers in three sectors for

collection of pre-spawning and spawning fishes, allowing us to obtain samples throughout the entire reproductive season of August through February. Our industry partners in the reduction (Omega Protein) and bait (Louisiana Bait Products) sectors will provide a sample of their catches for analysis from August through November. We will also work with the winter trawl shrimp fishery in Louisiana during the December through February spawning season to secure samples of Gulf Menhaden, which are collected as by-catch by this fishery. Sampling the adult population when it is inaccessible to the commercial reduction harvest will serve to increase the amount of at-sea observations that can be made for this stock. The data collected in this project will be compared to age-growth and reproductive biological information derived from historical data from the 1960s and 1970s and evaluated in a simulation modeling context.

Project Funding:

Federal	\$101,286.00
Non-Federal	\$0
Total	\$101,286.00

NA14NMF4540065

CRP PROJECT SUMMARY

Project Title: Red Drum Spawning Stock Size and Structure in the Eastern Gulf of Mexico

Project Start Date: September 1, 2014

Name, Address, and Telephone Number of Applicant:

Florida Fish and Wildlife Conservation Commission
100 Eighth Avenue SE
St. Petersburg, FL 33701
(727) 896-8626

Principal Investigator(s) and Brief Statement of Qualifications:

Dr. Susan Lowerre-Barbieri conducts research on reproductive dynamics and life history of marine finfish, integrating acoustic telemetry, traditional reproductive biology, and population dynamics.

Project Goal and Objectives: The objective of our project is to collect multiple years of data using a genetic tag/recapture approach, in conjunction with biotelemetry and aerial surveys, to estimate red drum spawning stock abundance and structure. Because the red drum stock in the Gulf appears to exhibit a meta-population structure, it is important to first test this method over a small spatial scale (Tampa Bay to Charlotte Harbor) and to evaluate adult movement patterns before applying it to a larger geographic region. Specifically, this project proposes to:

- 1) Build on our currently funded research by extending genetic sampling of red drum collected by purse seine for a third year. Fish will be fin clipped and released. Genetic profiles of each fin clip will be developed and checked against previously caught fish (2012: 1860 fish; 2013 target: 2,400 fish) to develop a multi-year tag/recapture database that can be used to assess spawning stock abundance.
- 2) Improve our understanding of spatial dynamics affecting the stock structure, by collecting multiple years of data on the distribution of aggregations, adult movement data, and mixing amongst spawning populations. Data would be collected through aerial surveys, genetics, and acoustic telemetry.
- 3) Improve our ability to assess natal homing by increasing the adult sample size (target: an additional 2,400 fish) used to assess genetic profiles from offshore spawning aggregations to determine if any of them match Tampa Bay sub-adults previously genetically profiled (2001 to 2007; n=8,200).

Specific Priority(ies) in Solicitation to which Project Responds:

Gulf of Mexico Fisheries Management Council (GMFMC) high priority Federally managed species. 1. Commercial and Recreational Finfish: (d) life history information including genetic material; and (e) improved information on the reproductive characteristics of the stock, including the relationship between size or age and reproductive capacity to refine estimates of long-term biological productivity of the stock.

Summary of Work:

We request a third year of funding to estimate red drum spawning stock abundance and structure based on a genetic tag/recapture effort, aerial aggregation surveys, and biotelemetry. This extended funding will allow us to meet the following objectives: (1) to improve our estimates of spawning

stock size by having two years to collect recaptures after genetically “tagging” 1860 fish in 2012 and an additional 2400 fish anticipated in 2013; (2) continue to track the movements of 60 fish implanted in 2012 and 40 fish implanted in 2013; (3) improve our understanding of red drum in federal waters; and (4) continue to investigate recruitment of local sub-adult red drum to offshore spawning aggregations by evaluating if any of the adult genetic profiles from Tampa Bay spawning aggregations match those of Tampa Bay sub-adults genetically profiled in 2001-2007 (n=8,200).

Project Funding:

Federal	\$140,988.00
Non-Federal	\$0
Total	\$140,988.00

Appendix 2b. Completed CRP Project Summaries
(Describes the completed/closed CRP projects)

NA04NMF4540210

CRP PROJECT SUMMARY

Project Title: Cooperative Hook and Line Sampling Project Identifying Catch Composition, Life History, and Bycatch of the Eastern Gulf of Mexico Deep Water Reef Fish Complex

Project Start Date: October 1, 2004

Name, Address, and Telephone Number of Applicant:

Fish Master Inc.
1462 Xavier Ave.
Ft. Myers, FL 33919
(239) 437-1630

Principal Investigator(s) and Brief Statement of Qualifications:

Eric Schmidt has over 20 years of fishing experience in this area.

Project Goals and Objectives: The primary goals of the project are to collect aging and reproductive materials from deep-water reef fish and to make discard and bycatch observations.

Specific Priority(ies) in Solicitation to which Project Responds:

This project responds directly to priority A (Commercial Finfish); 2(a), 2(d), and 2(f).

Summary of Work:

The project will conduct eight ten-day trips to collect samples and information from a traditional fishing area for deep-water species of the reef fish complex. Otoliths and gonads will be collected, processed, and given to the NMFS Panama City Laboratory. Standard, catch, discard, and bycatch information will be given to the NMFS and the Gulf of Mexico Fishery Management Council for use in assessments and development of fishery regulations.

Project Funding:

Federal	\$47,753
Non-Federal	\$0
Total	\$47,753

CRP PROJECT SUMMARY

Project Title: Investigating Gag Recruitment Processes Using Otolith Chemical and Genetic Markers

Project Start Date: June 1, 2004

Name, Address, and Telephone Number of Applicant:

Florida State University
Dept. of Biological Science
97 S. Woodward Ave., 3rd Floor
Tallahassee, FL 32306-4166
(850) 644-2019

Principal Investigator(s) and Brief Statement of Qualifications:

Dr. Felicia Coleman and Dr. Chris Koenig have studied and published extensively on gag and the reef fish fishery. They have over 50 years of experience and are well qualified to complete the project. Dr. David Secor has expertise in marine fisheries ecology and otolith microconstituent analysis.

Project Goal and Objectives:

The primary goal is to determine the most significant source areas (essential seagrass habitat) for juvenile recruits to the adult gag fishery. A secondary goal is to investigate patterns of genetic diversity in juvenile cohorts to detail recruitment processes. Objectives include: 1) evaluate the relative contribution of juvenile nursery areas to the adult population using chemical signatures in otoliths; 2) evaluate regional levels of parentage and relatedness of juvenile cohorts using microsatellite marks; and 3) progress toward development of a predictive juvenile index of abundance of gag off the west coast of Florida.

Specific Priority(ies) in Solicitation to which Project Responds:

This project responds directly to A (Commercial Finfish); 2(f) improve life history information and biological investigations on commercial finfish species; especially about the age-structure of the catch based on otolith or other hard-part age readings; improve information on the reproductive characteristics of the stock to provide a basis for refining estimates of long-term potential productivity of the stock; and C (Recreational and Charter Fishery) 4(c) investigations of essential fisheries habitat for gag.

Summary of Work:

The project will determine the most significant source areas for juvenile recruits to the adult gag fishery. Patterns of genetic relatedness and parentage in juveniles will be examined to add to a time-series data set that can be used to develop a fisheries-oriented model of juvenile abundance. Otoliths will be examined using inductively-coupled plasma mass spectrometry to determine origin of juveniles. Information from the project will be used to begin development of a model to estimate recruitment of juvenile gag and to determine the utility of marine protected areas.

Project Funding:

Federal	\$300,000
Non-Federal	\$0
Total	\$300,000

NA05NMF4540039

CRP PROJECT SUMMARY

Project Title: Cooperative Project Sampling of the Vertical Line Fishery Sampling Reproductive and Hard Part Tissues of Vermilion Snapper and Red Grouper in the Eastern Gulf of Mexico

Project Start Date: January 1, 2006

Name, Address, and Telephone Number of Applicant:

Fish Master Inc.
1462 Xavier Ave.
Ft. Myers, FL 33919
(239) 437-1630

Principal Investigator(s) and Brief Statement of Qualifications:

Eric Schmidt has over 20 years of fishing experience in this area.

Project Goal and Objectives:

The primary goal is to collect life history information on red grouper and vermilion snapper. The project will focus on collecting reproductive samples from red grouper and age samples from vermilion snapper. The samples will be taken from the central and southwestern shelf of west Florida, which will complement samples from other areas. Information on habitat will be collected to compare possible differences in life history parameters among different habitat types.

Specific Priority(ies) in Solicitation to which Project Responds:

This project responds directly to priority A (Commercial Finfish); 1(f).

Summary of Work:

The project will conduct 14 eight-day trips over 18 months to collect gonads and otoliths from red grouper and vermilion snapper. Samples, including length and weight of individual fish, will be collected according to NMFS protocol and delivered to NMFS for analyses. Specific sites will be sampled to allow NMFS scientists to identify potential differences between growth and reproductive rates among the selected sites.

Project Funding:

Federal	\$121,352
Non-Federal	\$0
Total	\$121,352

NA05NMF4540044

CRP PROJECT SUMMARY

Project Title: A Project to Augment the Data Collection and Development of an Electronic Logbook System (ELB) Used within the Gulf of Mexico Shrimp Fishery

Project Start Date: February 1, 2005

Name, Address, and Telephone Number of Applicant:

Gulf & South Atlantic Fisheries Foundation, Inc.
5401 W. Kennedy Blvd., Suite 740
Tampa, FL 33609
(813) 286-8390

Principal Investigator(s) and Brief Statement of Qualifications:

Judy Jamison, with over 24 years of experience.

Project Goal and Objectives:

This project will: 1) complement the current ELB study with onboard observers to collect data on fishing effort, red snapper bycatch, and shrimp landings; 2) analyze all observer collected data to further ensure that ELB landings estimates are accurate; 3) determine the spatial-temporal abundance of juvenile red snapper, compute a total mortality (Z) estimate for shrimp-trawl red snapper bycatch, and conduct a formal cohort analysis (VPA) on all observer collected red snapper data; and 4) further develop the ELB system to be more robust and usable.

Specific Priority(ies) in Solicitation to which Project Responds:

This project responds directly to priority D (Commercial Shrimp Harvest); 3.

Summary of Work:

This project will complement an existing ELB project with contracted observers. Each observer will collect shrimp total shrimp landings (no subsample) and total red snapper bycatch data. All observers will be placed randomly on vessels cooperating in the ELB project. Data collected during the project will be used to conduct a formal cohort analysis (VPA) and compute mortality estimates for all Foundation collected red snapper data (both past and present). Results will be used to validate ELB landings estimates by region (statistical zone) and to assist fisheries managers in the assessment of the red snapper stock.

Project Funding:

Federal	\$368,284
Non-Federal	\$0
Total	\$368,284

CRP PROJECT SUMMARY

Project Title: Catch characterization and discards within the snapper grouper vertical hook-and-line fishery of the south Atlantic United States

Project Start Date: June 1, 2006

Name, Address, and Telephone Number of Applicant:

Gulf and South Atlantic Fisheries Foundation
Lincoln Center, Suite 740
5401 West Kennedy Blvd.
Tampa, FL 33609
(813) 286-8390

Principal Investigator(s) and Brief Statement of Qualifications:

Judy Jamison, Executive Director, has over 25 years of administrative and grants management experience. Dr. Michael Jepson has over 20 years of experience in research on fishing communities and the social impacts of fishery policy.

Project Goals and Objectives: The objective of this project is to: 1) implement a pilot observer program within the snapper-grouper vertical hook-and-line fishery of the South Atlantic United States; 2) contract and train fishery observers to collect data to quantify total catch, effort, and discards (including fate) within the fishery; and 3) with the assistance of the South Atlantic Sustainable Fisheries Association, Inc., actively solicit the participation of cooperating vessels to ensure a random sample of vessels is included in the study, and disseminate the results of data collected during the pilot program.

Specific Priority(ies) in Solicitation to which Project Responds:

This project responds directly to priority A (Commercial Finfish); 1(a); and 1(d).

Summary of Work: A planning meeting will first be convened to discuss and strategically plan all aspects of the proposed work. The researchers will focus their research on quantifying the snapper-grouper vertical hook-and-line fishery through an observer based program, thereby increasing coverage and the impact of the data collected. The researchers will actively solicit the cooperation of fishing vessels and captains willing to participate in the observer program. Although vessel selection will be non-random (e.g., voluntary participation), all efforts will be made to increase the total number of vessels cooperating in the project, and the universe of vessels to which an observer can be assigned. The project will quantify effort, total catch, and discard mortality within the snapper-grouper vertical hook-and-line fishery. Sampling will occur year-round with effort proportionately distributed by season. Prior to the collection of catch data, the observer will complete a vessel characterization/ trip report form that will outline the specifics of the vessel, gear used, and dates fished. While on-site and actively fishing, the observer will then complete a catch characterization form. After all data have been entered and backed-up, the data will be archived at the Foundation's office where it will be available for use by interested parties.

Project Funding:

Federal	\$394,252
Non-Federal	\$0
Total	\$394,252

NA06NMF4540060

CRP PROJECT SUMMARY

Project Title: A Cooperative Research Approach to Estimating Atlantic and Gulf of Mexico King Mackerel Stock Mixing and Populations Dynamics Parameters

Project Start Date: June 1, 2006

Name, Address, and Telephone Number of Applicant:

University of West Florida
11000 University Parkway
Pensacola, FL 32514-5750
(850) 857-6123

Principal Investigator(s) and Brief Statement of Qualifications:

Dr. Will Patterson has 12 years of experience on research on age and growth, population dynamics, fisheries ecology, and otolith microchemistry.

Project Goals and Objectives: The overall goal of this project is to address data needs essential for effective management of Gulf and Atlantic king mackerel migratory groups. This will be accomplished through cooperative research between the researcher, commercial fisherman, charter boat captains, and the NMFS Panama City Laboratory.

Specific Priority(ies) in Solicitation to which Project Responds:

This project responds directly to priority A (Commercial Finfish); 1(f).

Summary of Work: The research will: 1) estimate the temporal and spatial variability in stock mixing with natural tags derived from otolith shape and chemistry analyses, 2) estimate stock- and sex-specific von Bertalanffy growth parameters, and 3) provide gonad samples for ongoing research aimed at updating and more precisely estimating stock-specific age at maturity, batch fecundity, and annual fecundity functions. Results of this work will include mixing and biological parameter estimates critical to king mackerel management.

Project Funding:

Federal	\$304,036
Non-Federal	\$11,084
Total	\$315,120

NA06NMF4540061

CRP PROJECT SUMMARY

Project Title: Populations structure and genetic demography of yellowtail, mutton, and lane snappers in the U.S. Caribbean fishery

Project Start Date: September 1, 2006

Name, Address, and Telephone Number of Applicant:

Texas A&M Research Foundation
3578 TAMU
College Station, TX 77843-3578
(979) 847-8778

Principal Investigator(s) and Brief Statement of Qualifications:

Dr. John R. Gold has over 30 years experience in fish genetics. Dr. Eric Salliant has over 10 years of experience in molecular populations genetics of marine fishes.

Project Goals and Objectives:

The primary objectives are: (1) to acquire molecular-genetic data from nuclear-encoded loci and mitochondrial DNA from three species of shallow-water snappers (yellowtail snapper; mutton snapper; and lane snapper) sampled from the U.S. Caribbean; and (2) to develop for each species a rigorous, genetics-based model of populations structure and demography that includes genetic variation and distinctiveness, degrees(s) of population growth or decline, parameters and levels of migration (mixing), and (genetic) effective size. The overall objective is to provide critical data that can be applied (and updated periodically) to assessment and allocation of shallow-water snapper resources in waters of the U.S Caribbean.

Specific Priority(ies) in Solicitation to which Project Responds:

This project responds directly to priority A (Commercial Finfish); 1(f), (2,a), (3,a) and Priority C (Caribbean fisheries) (2).

Summary of Work: The researchers will (i) Acquire tissues from each snapper species at four localities in the U.S. Caribbean, one locality in the British Virgin Islands, and one locality in the Florida Keys; (ii) acquire genotypes at 12-15 microsatellites from 1,350 individuals and sequences of mitochondrial DNA from 450 individuals; (iii) execute data analysis to answer four questions: (a) are there multiple 'genetic' stocks of each species in U.S. Caribbean waters, and if so, what are their geographic boundaries? (b) What are the patterns and rates of migration between or among offshore sampling localities in each of the three species? (c) What are the demographic dynamics (population growth/decline and rate(s) of growth/decline) in any of the species at any of the sampling localities? And (d) What are the effective population sizes of each species at each sampling locality and do effective sizes differ among localities?

Project Funding:

Federal	\$269,577
Non-Federal	\$45,113

Total	\$314,690
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NA06NMF4540062

CRP PROJECT SUMMARY

Project Title: Shrimp Trawl Bycatch Reduction in the western Gulf of Mexico – Federal waters

Project Start Date: May 1, 2006

Name, Address, and Telephone Number of Applicant:

Harry Davis, Jr.
209 Acorn Oak St.
Somerville, TX 77879
(979) 596-3172

Principal Investigator(s) and Brief Statement of Qualifications:

Harry Davis, Jr. has over 50 years of shrimping experience, and developed a NMFS-certified bycatch reduction device, thereby receiving two NOAA Environmental Hero Awards.

Project Goals and Objectives: The objective is to design and test several net and bycatch reduction device configurations in the western Gulf of Mexico so as to reduce bycatch.

Specific Priority(ies) in Solicitation to which Project Responds:

This project responds directly to priority A (Commercial Finfish) (3).

Summary of Work: The researcher will design and test several net and bycatch reduction device configurations (two seam balloon; four seam; Davis experimental four seam flat; Davis pre-Turtle Excluder Device; and modified Jones-Davis) using comparative experimental methodology.

Project Funding:

Federal	\$25,832
Non-Federal	\$0
Total	\$25,832

CRP PROJECT SUMMARY

Project Title: The capture depth, time and hooked survival rate for bottom longline caught large coastal sharks.

Project Start Date: May 1, 2006

Name, Address, and Telephone Number of Applicant:

Mr. George H. Burgess and Ms. Alexia C. Morgan
Florida Museum of Natural History
University of Florida
Gainesville, FL 32611
(352) 392-2360

Principal Investigator(s) and Brief Statement of Qualifications:

Mr. Burgess has over 30 years of experience with marine fisheries and has published extensively on sharks and shark fisheries. Currently, he is the Director, Florida Program for Shark Research. Ms. Alexia Morgan is a research biologist who has been the coordinator for the Commercial Shark Observer Fishery Observer Program for over 5 years.

Project Goal and Objectives:

The goal of this project is to work continue with commercial bottom long-line shark fishers to collect more detailed data pertaining to the relationship between soak time and capture depth on fishing mortality and catch per unit effort of individual shark species and shark species aggregates. Objectives include: 1) determine what length of time the fishing gear is in the water prior to a shark biting and being hooked and at what point during the fishing process, i.e., deployment, fishing or retrieval, individual sharks are hooked; 2) obtain more accurate data pertaining to the length of time individual shark species remain alive after being hooked on bottom long-line fishery gangions; and 3) using depth stratified sampling, record the accurate depths of capture of sharks and provide a description of the depth range and catch per unit effort by depth for up to 25 species of sharks. Fishers will use gear and fishing techniques currently employed in the large coastal shark fishery.

Specific Priority(ies) in Solicitation to which Project Responds:

This project responds directly to priority A (Commercial Finfish); 3 Projects are needed to develop and test gear and fishing strategies designed to reduce or eliminate unintended catch.

Summary of Work:

Scientists will work with two commercial shark long-liners to obtain catch information. Hook timers will be used to identify how long individual sharks remain on the line after being caught on hooks. Time depth recorders will be used to record the depth at which the bottom long-line is fishing and will be used to indicate the total time between the setting and retrieval of the gear. Time and depth will be recorded at one-minute intervals. Information will be delivered to NMFS for analysis and use by fishery managers to develop strategies to minimize the catch of unwanted shark species. Also, information will be distributed to commercial fishermen to assist them in reducing catch of unwanted shark species.

Project Funding:

Federal	\$97,686
Non-Federal	\$0
Total	\$97,686

NA07NMF4540075

CRP PROJECT SUMMARY

Project Title: Characterization of the Catch by Swordfish Buoy Gear in Southeast Florida

Project Start Date: 9/1/2007

Name, Address, and Telephone Number of Applicant:

Dr. David W. Kerstetter
Oceanographic Center
Nova Southeastern University
3301 College Avenue
Fort Lauderdale, FL 33314
Phone: (954) 262-3664

Principal Investigator(s) and Brief Statement of Qualifications:

Dr. David Kerstetter, with seven years conducting fisheries research at sea aboard commercial pelagic longline vessels.

Project Goal and Objectives: To characterize the swordfish buoy gear fishery in the Florida Straits.

Specific Priority(ies) in Solicitation to which Project Responds:

This project responds directly to Priority B (Bycatch), 2 (a) and 2(b).

Summary of Work: This award will study the catch and bycatch of swordfish buoy gear (SBG) during 56 nights of fishing. The research will use electronic monitoring equipment to determine the effective fishing depths and times of operation for the SBG gear.

Project Funding:

Federal	\$147,284
Non-Federal	\$0
Total	\$147,284

NA07NMF4540076

CRP PROJECT SUMMARY

Project Title: Seasonal Movement and Mixing Rates of Greater Amberjack in the Gulf of Mexico and Assessment of Exchange with the South Atlantic Spawning Stock

Project Start Date: August 1, 2007

Status: Active

Name, Address, and Telephone Number of Applicant:

Dr. Debra Murie
Department of Fisheries & Aquatic Sciences
University of Florida
7922 NW 71st Street
Gainesville, FL 32653
(352) 392-9617

Principal Investigator(s) and Brief Statement of Qualifications:

Dr. Debra Murie, with over 20 years of fisheries-related experience, including collaboration on stock assessments, estimating population abundance using stratified population analyses based on mark recapture, and general fisheries ecology.

Project Goal and Objectives:

The goal is to examine the seasonal pattern and rates of movement of greater amberjack in the Gulf of Mexico and to determine the potential mixing rate of the Gulf of Mexico greater amberjack stock with the South Atlantic greater amberjack stock, especially in known spawning areas off southern Florida.

Specific Priority(ies) in Solicitation to which Project Responds:

This project responds directly to priority A (Commercial Finfish).

Summary of Work:

This work will: 1) capture and externally tag greater amberjack with anchor tags, determine sexual status, and collect fin rays for aging and tissue samples for genomic fingerprinting (using Amplified Fragment Length Polymorphisms or AFLPs) in four geographic regions; 2) Determine presence and timing of any seasonal dispersal or migration patterns of Gulf greater amberjack through analysis of tag recaptures; 3) through tag recaptures, estimate potential mixing rate of Gulf greater amberjack with greater amberjack from known spring spawning areas of the South Atlantic stock off south Florida; 4) determine the location(s) of potential spawning of greater amberjack in the Gulf by tagging large, sexually mature fish with pop-off archival transmitting tags during the late fall in the northern Gulf of Mexico and set the tags to pop-off during the peak of the presumed spawning period (late April/May). Through geolocations up-loaded from these tags, determine whether greater amberjack in the northern Gulf migrate south to spawn or remain in the northern Gulf during the spawning season. Along with recaptures of external anchor tags during the spawning season (with location information supplied), this would determine the presence and potential location of spawning aggregations of Gulf greater amberjack; 5) develop 300-500 nuclear amplified fragment length polymorphisms and mitochondrial DNA sequence markers of greater amberjack; 6) integrate the results of the

tagging portion of the study (Objectives 1-4) with the genomic picture of Gulf stock structure (Objective 5) to estimate movement and mixing rates of Gulf greater amberjack. Assess whether the tagging and genetic results are complementary and result in the same interpretation of what constitutes the Gulf of Mexico greater amberjack stock; and 7) collaborate with the NMFS partner (Panama City, Florida) and stock assessment scientists at the NMFS Southeast Fisheries Science Center to provide tagging and genetic analyses.

Project Funding:

Federal	\$321,940
Non-Federal	\$ 0
Total	\$321,940

NA07NMF4540077

CRP PROJECT SUMMARY

Project Title: A Program to Enhance Industry Evaluations of Complex Bycatch Reduction Devices within the Gulf of Mexico Shrimp Trawl Fishery

Project Start Date: August 1, 2007

Name, Address, and Telephone Number of Applicant:

Gulf & South Atlantic Fisheries Foundation, Inc.
5401 W. Kennedy Blvd., Suite 740
Tampa, FL 33609
(813) 286-8390

Principal Investigator(s) and Brief Statement of Qualifications:

Ms. Judy Jamison, with over 24 years of experience.

Project Goal and Objectives: To reduce the fishing mortality of juvenile red snapper being incidentally harvested during shrimp trawl operations, the National Marine Fisheries Service (NMFS) has implemented regulations specifying the use of BRDs. However, effective implementation of new BRD requirements requires outreach in the shrimp trawling industry over a large geographical range. Through this project, a more efficient conversion to improved BRDs can be accomplished through outreach within the fishing industry.

Specific Priority(ies) in Solicitation to which Project Responds:

This project responds directly to priority A (Commercial Finfish); 4.

Summary of Work: This research will: 1) embolden fishermen to utilize more complex and sophisticated BRDs, hence creating a paradigm shift in gear utilization; 2) obtain informal, objective industry evaluations of new BRD designs over a broad spectrum of areas and species fished and provide input back to NMFS; 3) create a level of industry trust regarding new BRDs, thus providing for a more effective and efficient transition to potentially new BRD mandates; and 4) begin training selected net shops and related personnel in the construction of new BRDs.

Project Funding:

Federal	\$177,207
Non-Federal	\$ 0
Total	\$\$177,207

NA07NMF4540078

CRP PROJECT SUMMARY

Project Title: Reducing discard mortality in red snapper recreational fisheries using descender hooks and rapid recompression

Project Start Date: August 1, 2007

Name, Address, and Telephone Number of Applicant:

Texas Tech University
Department of Biology
Lubbock, TX 79409-313
(806) 742-1999

Principal Investigator(s) and Brief Statement of Qualifications:

Dr. Sandra Diamond, with over 20 years of experience in marine fisheries, including seven years of experience working for the California Department of Fish and Game, and eight years as a faculty member at Texas Tech University.

Project Goal and Objectives:

The goals of this project are to: 1) reduce mortality of undersized red snapper discarded regulations in the recreational fisheries; 2) quantify mortality due to predation of discarded red snapper, and 3) determine whether rapid recompression can reduce the mortality of discarded red snapper.

Specific Priority(ies) in Solicitation to which Project Responds:

This project responds directly to A (Commercial Finfish) 1.

Summary of Work:

This work will: 1) test a fishhook (the Shelton Fish Descender or SFD hook) that will reduce discard mortality by allowing discarded red snapper to be released at depth instead of at the surface; 2) compare discard mortality of fish released at the surface with discard mortality of fish that are released at depth; 3) quantify predation rates of red snapper released at the surface compared to fish released at depth; 4) evaluate the effects of rapid recompression on red snapper mortality, physiology, and behavior; 5) determine whether the Sheldon Fish Descender hooks are effective during normal operating procedures on headboats; and 6) educate fishermen on the use of SFD hooks.

Project Funding:

Federal	\$262,369
Non-Federal	\$ 0
Total	\$262,369

NA07NMF4540079

CRP PROJECT SUMMARY

Project Title: Batch fecundity and spawning frequency as a function of size, age, and season for black sea bass and red porgy in the U.S. South Atlantic

Project Start Date: August 1, 2007

Name, Address, and Telephone Number of Applicant:

Department of Biology and Marine Biology
University of North Carolina at Wilmington
601 South College Rd.
Wilmington, NC 28403-5915
(910) 962-7796

Principal Investigator(s) and Brief Statement of Qualifications:

Dr. Fredrick Scharf, with over 14 years of fisheries experience.

Project Goal and Objectives:

The project goal is to utilize the expertise and vessels of experienced commercial fishermen to collect black sea bass and red porgy throughout their winter/spring spawning seasons for the purposes of estimating batch fecundity and spawning frequency. In addition, a range of sizes/ages of each species needs to be collected throughout the spawning season to accurately evaluate the effects of size, age, and time of year on batch size and frequency. The data collected as part of this proposed research will allow assessment biologists to incorporate accurate information on female reproductive output into population models to more thoroughly evaluate current metrics used as management reference points and explore the potential for current and future harvest practices to influence the population dynamics of two protogynous members of the snapper-grouper complex.

Specific Priority(ies) in Solicitation to which Project Responds:

This project responds directly to priority A (Commercial Finfish).1.f.

Summary of Work:

The researchers will collect black sea bass in traps, and collect red porgy using bandit reels, and hook-and-line. Experienced commercial fishermen will harvest these two protogynous species during the winter/spring spawning seasons. This research will evaluate the effects of size, age, and time of year on batch size and frequency, and will provide information on female reproductive output data for incorporation into the population models for black sea bass and red porgy.

Project Funding:

Federal	\$222,716
Non-Federal	\$ 0
Total	\$222,716

NA07NMF4540080

CRP PROJECT SUMMARY

Project Title: A pilot program to assess ParFish, an alternative stock assessment program approach using limited data sources, for commercial fisheries of Puerto Rico

Project Start Date: August 1, 2007

Name, Address, and Telephone Number of Applicant:

MRAG Americas, Inc.
10051 5th St. N, Suite 105
St. Petersburg, FL 33702
(727) 563-9070

Principal Investigator(s) and Brief Statement of Qualifications:

Dr. Robert J. Trumble has over 35 years of experience in marine fishery science and management. He has extensive experience working with governmental agencies, fisheries groups, and national and international advisory groups.

Project Goal and Objectives:

To provide data for the assessment models being prepared for the deepwater snapper resource, so as to provide recommendations for data collection and fishery management measures.

Specific Priority(ies) in Solicitation to which Project Responds:

This project responds directly to priority A (Commercial Finfish); 2.

Summary of Work:

The researchers will obtain interviews with deepwater snapper fishermen to provide data for the assessment models being prepared for those species. The researchers then will develop recommendations for data collection to reduce uncertainty of assessment results, and develop recommendations for fishery management.

Project Funding:

Federal	\$101,365
Non-Federal	\$0
Total	\$101,365

NA07NMF4540084

CRP PROJECT SUMMARY

Project Title: Quantity and quality of trap-caught black seabass (*Centropristis striata*) off the central North Carolina coast, including elemental analyses of otoliths to determine individual migration histories

Project Start Date: August 1, 2007

Name, Address, and Telephone Number of Applicant:

Anthony Austin
276 Goose Creek Road
Hubert, NC 28539
(910) 326-1293

Principal Investigator(s) and Brief Statement of Qualifications:

Anthony Austin, with over 35 years of fulltime commercial fishing experience.

Project Goal and Objectives:

To determine the numbers and quality (catch and disposition) of trapped black sea bass relative to the amount of soak time and to surface conditions.

Specific Priority(ies) in Solicitation to which Project Responds:

This project responds directly to priority A (Commercial Finfish); 1.

Summary of Work:

The researcher will use black sea bass traps off North Carolina to determine the cumulative catch as a function of soak time, and characterize the size and species composition of bycatch in the traps. Otolith elemental analyses on the black sea bass caught in the traps will study the morphological differences between black sea bass, and describe the seasonal and annual migration of individual adults.

Project Funding:

Federal	\$55,300
Non-Federal	\$0
Total	\$55,300

NA07NMF4540085

CRP PROJECT SUMMARY

Project Title: Behavior, Habitat, and Abundance of the Goliath Grouper (*Epinephelum itajara*) in the Central Eastern Gulf of Mexico

Project Start Date: August 1, 2007

Name, Address, and Telephone Number of Applicant:

Florida Fish and Wildlife Conservation Commission
100 Eighth Avenue SE
St. Petersburg, FL 33701
(727) 896-8626

Principal Investigator(s) and Brief Statement of Qualifications:

Angela Collins, with over 4 years of marine fisheries research experience.

Project Goals and Objectives:

This project will: 1) characterize size structure, spawning and non-spawning behaviors, and spatial and temporal variations in habitat associations; 2) determine relative abundances of goliath grouper based on habitat type, depth and season in the central eastern Gulf of Mexico; 3) quantify site fidelity for goliath grouper and characterize whether this changes with fish size, depth, season or habitat type; and 4) synthesize fisheries information and life history parameters for Florida's goliath grouper population with other regions in the western Atlantic, Caribbean Sea, and Gulf of Mexico.

Specific Priority(ies) in Solicitation to which Project Responds:

This project responds directly to priority C (Essential Fish Habitat).4.c.

Summary of Work:

The researchers will conduct extensive in situ observations of goliath grouper. Tags will be attached to the observed goliath grouper, using a modified spear gun. Otoliths and gonad samples will be collected when available during field observations, as well as from fish kills reported to the recipient.

Project Funding:

Federal	\$206,096
Non-Federal	\$0
Total	\$206,096

NA08NMF4540389

CRP PROJECT SUMMARY

Project Title: Investigation of Essential Fish Habitat of Adult Dusky (*Carcharhinus obscurus*) and silky (*Carcharhinus falciformis*) sharks in the northern Gulf of Mexico using Pop-up Satellite Archival Tag Technology

Project Start Date: July 1, 2008

Name, Address, and Telephone Number of Applicant:

The University of Southern Mississippi
703 East Beach Drive
Ocean Springs, MS 39564

Principal Investigator(s) and Brief Statement of Qualifications:

Jim Franks, with over 42 years of marine fisheries research experience. Eric Hoff Mayer, with over 9 years of marine fisheries research experience.

Project Goals and Objectives:

GOAL: Develop scientific data critical to the identification of essential fish habitat (EFH) of adult dusky and silky sharks in the northern Gulf of Mexico.

OBJECTIVE: To determine habitat use, seasonal movement patterns, and environmental preferences of adult dusky and silky sharks in the northern Gulf of Mexico using pop-up satellite archival tag (PSAT) technology.

Specific Priority(ies) in Solicitation to which Project Responds:

This project responds directly to priority A (Commercial Finfish); 1

Summary of Work:

This study will further advance the cooperative working relationship developed between GCRL researchers and NOAA Fisheries, Pascagoula Laboratory shark biologists Mark Grace and Dr. William Driggers. This study will enable GCRL and NMFS biologists to work cooperatively with northern Gulf of Mexico charter fishing captains and the charter fishing industry. This is particularly beneficial to the charter vessel operators in the post-Hurricane Katrina era. This study will advance existing working relationships between the researchers and the recreational fishing community by working cooperatively, to collect valuable, fundamental data and information useful for the development and evaluation of management and regulatory options for dusky and silky sharks in the region.

Project Funding:

Federal	\$148,040
Non-Federal	\$0
Total	\$148,040

NA08NMF4540392

CRP PROJECT SUMMARY

Project Title: Bottom longline survey in the northeastern Gulf of Mexico for abundance and collection of biological data from tilefishes and deepwater groupers

Project Start Date: July 1, 2008

Name, Address, and Telephone Number of Applicant:

Captain Curtis Summers
450 Adkinson Road
Newton, AL 36352

Principal Investigator(s) and Brief Statement of Qualifications:

Captain Curtis Summers, with over 40 years experience.

Project Goals and Objectives:

- (1) Projects are needed to collect detailed information on the composition and disposition of bycatch and discards.
- (2) Investigations are needed to determine more efficient methods to record catches accurately on a real-time basis during fishing operations (e.g. electronic logbooks).
- (3) Projects are needed to develop methods to increase the amount of at-sea observations utilizing imaging systems.
- (4) Projects are needed to utilize fully scientific observers on-board vessels as a means of collecting detailed catch, effort and disposition data.
- (5) Data collection projects are needed to improve life history information on commercial finfish species. Improved information about the age-structure of the catch, based on otolith or other hard-part aging techniques. Improve information on the reproductive characteristics of the stock will provide information to refine estimates of long-term biological productivity of the stock.

Specific Priority(ies) in Solicitation to which Project Responds:

This project responds directly to priority A (Commercial Finfish); 1.

Summary of Work:

This project will conduct a randomized and stratified by depth bottom longline survey to estimate abundances of tilefish and deepwater grouper and conduct site-specific monthly sampling to characterize the spawning season of tilefish and other deepwater groupers. We will classify the composition and status of the catch and use advanced digital sampling devices to describe and record site-specific capture information. Commercial fishing vessel operations will be observed at-sea to enhance the digital reporting of data and biological sampling efforts. Otoliths and gonads will be collected from all species caught. Our results will include complete age, growth and reproductive analysis for all tilefish and deepwater grouper collected for use in future assessments and management purposes.

Project Funding:

Federal	\$114,058
Non-Federal	\$0
Total	\$114,058

NA08NMF4540398

CRP PROJECT SUMMARY

Project Title: Industry/NMFS Bycatch Reduction Device Workshop

Project Start Date: July 1, 2008

Name, Address, and Telephone Number of Applicant:

Gulf & South Atlantic Fisheries Foundation, Inc.
5401 W. Kennedy Blvd., Suite 740
Tampa, FL 33609
(813) 286-8390

Principal Investigator(s) and Brief Statement of Qualifications:

Ms. Judy Jamison, with over 24 years of experience.

Project Goals and Objectives:

An industry/NMFS workshop will be convened to cooperatively discuss the current state of knowledge regarding BRD research, technology, and regulations in a roundtable format. Specific objectives/topics to be addressed at this workshop are:

Results of in situ field tests of currently certified and promising BRDs;
Current studies investigating finfish reduction from shrimp trawl nets;
BRD regulatory changes and the impact of these regulations on the shrimp fishery; and industry priorities for reducing finfish bycatch within the shrimp fishery.

Specific Priority(ies) in Solicitation to which Project Responds:

This project responds directly to priority A (Commercial Finfish); 1.

Summary of Work:

Under this award, the researchers will convene an industry/NMFS/Sea Grant gear workshop. The workshop will cover the current state of knowledge regarding bycatch reduction device (BRD) research, technology, and regulations in a roundtable format. The project will facilitate more effective BRD use through industry and gear expert participation in an interactive workshop.

Project Funding:

Federal	\$80,000
Non-Federal	\$0
Total	\$80,000

NA08NMF4540399

CRP PROJECT SUMMARY

Project Title: Continuation of Catch Characterization and Discards within the Snapper Grouper Vertical Hook-and-Line Fishery of the South Atlantic United States

Project Start Date: July 1, 2008

Name, Address, and Telephone Number of Applicant:

Gulf & South Atlantic Fisheries Foundation, Inc.
5401 W. Kennedy Blvd., Suite 740
Tampa, FL 33609
(813) 286-8390

Principal Investigator(s) and Brief Statement of Qualifications:

Ms. Judy Jamison, with over 24 years of experience.

Project Goals and Objectives:

The purpose of this project is to:

1. Continue the observer program within the snapper-grouper vertical hook-and-line fishery of the South Atlantic United States;
2. Utilize previously trained or contract and train fishery observers to collect data to quantify total catch, effort, and discards (including fate) within the fishery; and
3. With assistance of the South Atlantic Sustainable Fisheries Association, Inc., continue to actively solicit the participation of cooperating vessels to ensure a sufficient sample of vessels is included in the study, and disseminate the results of data collected subsequent to the program completion.

Specific Priority(ies) in Solicitation to which Project Responds:

This project responds directly to priority A (Commercial Finfish); 1.

Summary of Work:

Under the award, the researchers will quantify effort, total catch, and discard mortality within the snapper-grouper vertical hook-and-line fishery of the South Atlantic. This project will continue the recipient's observer program within the snapper-grouper vertical hook-and-line fishery of the South Atlantic. The observers will collect data aboard participating commercial vessels to quantify total catch, effort, and discards within that important fishery.

Project Funding:

Federal	\$240,242
Non-Federal	\$0
Total	\$240,242

NA08NMF4540400

CRP PROJECT SUMMARY

Project Title: Population structure and genetic demography of red hind and coney in the U.S. Caribbean and development of genetic markers for yellowfin and tiger groupers.

Project Start Date: July 1, 2008

Name, Address, and Telephone Number of Applicant:

Texas A&M Research Foundation
3578 TAMU
College Station, TX 77843-3578
(979) 847-8778

Principal Investigator(s) and Brief Statement of Qualifications:

Dr. John R. Gold has over 30 years experience in fish genetics.

Project Goals and Objectives:

Acquire molecular-genetic data from nuclear-encoded loci (microsatellites) and mitochondrial (mt)DNA from red hind (*Epinephelus guttatus*) and coney (*Epinephelus fulvus*) sampled primarily from the U.S. Caribbean; (ii) Develop for each species a genetics-based model of population structure and demography that includes genetic variation and distinctiveness, patterns and levels of migration (mixing), degree(s) of population growth or decline, and (genetic) effective size; acquisition of both mitochondrial and nuclear genetic data will permit the first comparison of the above parameters between females and males in protogynous hermaphrodites; and (iii) Develop population-genetic tools for future studies of yellowfin and tiger groupers.

Specific Priority(ies) in Solicitation to which Project Responds:

This project addressed #2 (Caribbean Fisheries), and #3 (Recreational and Charter Fishery). Sub-priorities include 1.a.6 (improve life-history information, provide insight on stock(s) resilience, improve information on reproductive characteristics) and 1.b (monitoring stock abundance).

Summary of Work:

Acquire tissues from each grouper species at three localities in the U.S. Caribbean, one locality in the British Virgin Islands, and one locality in the Florida Keys; (ii) acquire genotypes at ~15 microsatellites from 1,000 individuals (100/locality/species) and sequences of mitochondrial DNA from 300 individuals (30/locality/species); (iii) execute data analysis to answer four questions: (a) Are there multiple 'genetic' stocks of each species in waters of the U.S. Caribbean, and if so, what are their geographic boundaries? (b) What are the patterns and rates of migration between or among sampling localities in each species? (c) What are the demographic dynamics (population growth/decline) in both species at each of the sampling localities and (d) What are the effective population sizes of each species at each sampling locality and do effective sizes differ among localities? (iv) test PCR primers for amplification of genetic markers in yellowfin and tiger groupers; and (v) prepare reports as required by NMFS.

Project Funding:

Federal	\$238,648
Non-Federal	\$59,686
Total	\$298,334

NA08NMF4540401

CRP PROJECT SUMMARY

Project Title: Gulf Fishermen's Association finfish bycatch survey cooperative research project for the Eastern Gulf of Mexico

Project Start Date: July 1, 2008

Name, Address, and Telephone Number of Applicant:

Gulf Fishermen's Association Inc.
2860 Dartmouth Ave N.
St. Petersburg, FL 33713-7724
(813) 881-0150

Principal Investigator(s) and Brief Statement of Qualifications:

Glen Brooks, with over 27 years experience.

Project Goals and Objectives:

1. Random sampling and retention with human recording in NMFS SEFSC discard logbooks of reef fish species caught as bycatch, in 3 previously identified geographic areas of the Eastern Gulf of Mexico, over the course of up to 1 year, utilizing common gear types: longline, handlines/bandit rigs, during regular fishing trips.
2. Installation and maintenance of up to 4 video monitoring devices that record landings on fishing vessels (2 longline, 2 handline/bandit) to test new technology for at-sea observations and recording catch information real-time strategically over 1 year. Professionals will read the videos, and data will be compared to human recording results in NMFS SEFSC discard logbooks, both during and in the absence of sampling retention.
3. 1 boat of each gear type (1 longline, 1 handline/bandit), some with monitoring devices and some without, will retain 100% of catch during a regular fishing trip, 2 times in 12 months, in each of 3 geographic areas, and bring it back to the dock for NMFS review.

Specific Priority(ies) in Solicitation to which Project Responds:

This project responds directly to priority A (Commercial Finfish); a.1.

Summary of Work:

The proposed project is a 1 year reef finfish bycatch survey in federal waters of the Eastern Gulf of Mexico. The project will collect data that aid in: recovering, maintaining, and improving the status of stocks upon which Gulf fisheries depend; improving the understanding of factors affecting long-term sustainability of the fisheries; and generating increased values and opportunities for fisheries by providing usable and relevant information to aid fishery researchers, scientists, and managers to make informed management decisions.

Project Funding:

Federal	\$272,445
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Non-Federal	\$286,300
Total	\$558,795

NA08NMF4540402

CRP PROJECT SUMMARY

Project Title: Vertical and horizontal habitat use of yellowfin tuna (*Thunnus albacares*) in the northern Gulf of Mexico: implications for standardization of catch rates.

Project Start Date: July 1, 2008

Name, Address, and Telephone Number of Applicant:

Texas A&M Research Foundation
3578 TAMU
College Station, TX 77843-3578
(979) 847-8778

Principal Investigator(s) and Brief Statement of Qualifications:

Dr. Jay R. Rooker has over 15 years experience in Marine Science.

Project Goals and Objectives:

1. Determine habitat use of yellowfin tuna in the northern Gulf using PAT tag technology
2. Investigate vertical and horizontal movements of yellowfin tuna inside (eastern Gulf) and outside (western Gulf) the Loop Current
3. Develop an Atlantic and Gulf wide mechanistic model for standardization of longline CPUE using an index of expected habitat use

Specific Priority(ies) in Solicitation to which Project Responds:

This project addressed #2 (Caribbean Fisheries).

Summary of Work:

The research will evaluate pop-up satellite archival tags (PSAT) to study Atlantic tuna habitat use and movement. That tuna data are needed to develop more integrated and spatially explicit fishery management strategies. The researchers and charter vessel captains will use 40 pop-up satellite archival tags (PSAT) on yellowfin tuna at sea. Vertical and horizontal movement data will be collected from the PSATs following release of the fish. That data will be used to determine the PSAT effectiveness, and to link Atlantic tuna habitat use to oceanographic features.

Project Funding:

Federal	\$223,186
Non-Federal	\$41,333
Total	\$264,519

NA09NMF4540135

CRP PROJECT SUMMARY

Project Title: Continuation of a Project to Augment the Data Collection of an Electronic Logbook System Used Within the Gulf of Mexico Shrimp Fishery

Project Start Date: August 1, 2009

Name, Address, and Telephone Number of Applicant:

Gulf and South Atlantic Fisheries Foundation, Inc.
5401 W. Kennedy Blvd., Suite 740
Tampa, FL. 33609
(813)286-8390

Principal Investigator(s) and Brief Statement of Qualifications:

Judy Jamison has over 28 years experience in administrative and grants management.

Project Goals and Objectives:

(1) Complement the current ELB study with onboard observers to collect data on fishing effort, red snapper bycatch, and shrimp landings within the Gulf of Mexico; (2) Analyze all observer collected data to further ensure that ELB landings estimates are accurate and defensible; and (3) Determine the spatiotemporal abundance of juvenile red snapper, compute a total mortality (Z) estimate for shrimp-trawl red snapper bycatch, and conduct a formal cohort analysis (VPA) on all observer collected red snapper data; 4) Provide improved data collection on the extent of bycatch of small coastal sharks in the Gulf shrimp fishery.

Specific Priority(ies) in Solicitation to which Project Responds:

1. Finfish, a. Characterize the total catch (from all fleets affecting the stocks), including catch composition and disposition of catch. (2) Investigations are needed to determine more efficient methods to record effort accurately on a real-time basis during fishing operations; (4) Projects are needed to utilize fully scientific observers on-board vessels as a means of collecting detailed catch, effort and disposition data.

4. Commercial Shrimp Harvest, Quantification of Effort: Research is needed to improve shrimp effort data.

Summary of Work:

The dynamics of the red snapper fishery are complex and various user groups are thought to impact the stock. As such, disagreement has existed regarding the mortality, age composition, and monthly distribution of juvenile trawl-caught red snapper. Furthermore, recent assessments of blacknose shark suggest significant mortality from bycatch in the Gulf shrimp fishery. To alleviate this confusion, the Foundation proposes the continuation of a program to augment a currently funded ELB project with fishery observers. The current program (funded through Coop. Agree. No. NA05NMF4540044) has expended its compliment of sea-days. To allow for the continued gathering of observer collected data aboard vessels that have an ELB, additional at-sea days are necessary. As before, fishery observers will be placed aboard shrimp trawl

vessels that have been randomly selected and have an ELB installed. Observers will collect data on total penaeid shrimp and red snapper catch and small coastal shark (i.e., no sub-samples will be taken). Data collected during this project will be used to update the formal cohort analysis (VPA) and compute mortality estimates for all Foundation collected red snapper bycatch data (both past and present). Results will be used to validate ELB landings estimates by region (statistical zone), quantify red snapper and small coastal shark bycatch rates, and to assist fisheries managers in the assessment of the both stocks

Project Funding:

Federal	\$384,150
Non-Federal	\$0
Total	\$384,150

NA09NMF4540136

CRP PROJECT SUMMARY

Project Title: Characterization of Recreational-Discard Composition and Mortality Rates for Gray Snapper and Other Estuarine-Dependent Reef Fishes Within a Gulf Coast Estuary and Nearshore Florida Waters

Project Start Date: August 1, 2009

Name, Address, and Telephone Number of Applicant:

Florida Fish and Wildlife Conservation Commission
100 8th Ave S.
St. Petersburg, FL. 33701
(727)896-8626

Principal Investigator(s) and Brief Statement of Qualifications:

Dr. Ted Switzer has over 11 years experience in Marine Science.

Specific Priority(ies) in Solicitation to which Project Responds:

This project addressed #1 (Commercial Finfish).

Summary of Work:

Overall survey design will be based on input from commercial and recreational fishers as to appropriate sampling sites and sampling methods, and field sampling will be conducted using commercial bandit and recreational hook-and-line vessels to assure that methods used are as comparable as possible to industry. Sampling will occur quarterly in varying depths in both the Florida Panhandle and mid-peninsular Florida, both of which are areas currently sampled by FWC (mid-peninsular Florida) and NMFS (Florida Panhandle) camera and trap surveys. Data from these quarterly surveys will be analyzed to determine whether commercial bandit or recreational hook-and-line surveys would be most appropriate for incorporating into existing NMFS and FWC fisheries-independent camera and trap surveys. Additional power analyses will be conducted to determine the appropriate level of sampling effort required to assure that the data collected are sufficient for developing indices of abundance and recruitment as well as providing demographic data.

Project Funding:

Federal	\$222,495
Non-Federal	\$0
Total	\$222,495

NA09NMF4540137

CRP PROJECT SUMMARY

Project Title: Minimizing Discards in the Gulf of Mexico Recreational Red Snapper Fishery: Hook Selectivity and the Efficacy of a First Fish Rule

Project Start Date: August 1, 2009

Name, Address, and Telephone Number of Applicant:

University of West Florida
11000 University Parkway
Pensacola, FL 32514-5750
(850) 857-6123

Principal Investigator(s) and Brief Statement of Qualifications:

Dr. Will Patterson has 12 years of experience on research on age and growth, population dynamics, fisheries ecology, and otolith microchemistry.

Project Goals and Objectives:

The overall goal of this project is to provide information essential for the effective management and conservation of the red snapper resource in the US Gulf of Mexico. Our primary objective is to estimate whether the problem of discards in the recreational fishery can be mitigated with creative approaches to regulating fishing gear, as well as by assessing the effect of gear selectivity discard rate on the efficacy of a “first fish” rule currently advocated by leaders of the charterboat industry.

Specific Priority(ies) in Solicitation to which Project Responds:

This project addressed # 3. (Recreational and Charter Fishery)

Summary of Work:

Over the course of two years of study, we (a team of scientists and charterboat Captains) will directly estimate the selectivity of different terminal tackle in the GOM red snapper recreational fishery by conducting fishing experiments in the north central GOM, which is the center of both the private and for-hire recreational red snapper fishery sectors. Charterboat Captains also will participate by carrying observers onboard chartered fishing trips. Observers will collect data and biological samples to characterize discards in the charterboat fishery. Data from fishing experiments, as well as those collected by observers, will be used to parameterize population models to examine the effect of hook size and type on maximizing landed (versus discarded) yield per recruit in the recreational fishery, as well as to examine the efficacy of instituting a “first fish” rule while continuing to rebuild GOM red snapper.

Project Funding:

Federal	\$268,545
Non-Federal	\$25,876
Total	\$294,421

NA09NMF4540138

CRP PROJECT SUMMARY

Project Title: Characterization of Bycatch Associated with the South Atlantic Snapper Grouper Bandit Fishery with Electronic Video Monitoring, At-Sea Observers, and Biological Sampling

Project Start Date: August 1, 2009

Name, Address, and Telephone Number of Applicant:

University of North Carolina-Center for Marine Science
5600 Marvin Moss Lane
Wilmington, NC 28409
(910)962-2492.

Principal Investigator(s) and Brief Statement of Qualifications:

Mr. M. Scott Baker, Jr. has 14 years experience working collaboratively with recreational and commercial fishermen.

Project Goals and Objectives:

The specific objectives are: 1) To compare data obtained from electronic video monitoring (EM) to data collected simultaneously with fishermen logbooks and at-sea observers; 2) To determine the age-size structure of frequently encountered and discarded snapper grouper species; 3) To collect information on number and disposition of discards with respect to depth and location of capture; and 4) To present the findings of this study to stakeholders at a public workshop.

Specific Priority(ies) in Solicitation to which Project Responds:

This project addressed #1 (Commercial Finfish).

Summary of Work:

This is a proposal to work cooperatively with fishermen to evaluate electronic video monitoring (EM) as a tool to characterize fishing activities of the commercial snapper grouper vertical hook and line (bandit) fleet. This study will involve multiple layers of data collection that revolves heavily on the participation of fishermen collaborators. The project design will allow for statistical comparisons among fishermen's logbooks, at-sea-observers, and electronic video monitoring systems as well as provide information on the age-size structure of frequently discarded species in the complex. Briefly, six EM systems will be installed on bandit-rig vessels operating out of NC, SC and GA. Each EM system will consist of 2-5 cameras placed on the back deck of a boat, plus a global positioning system, all connected to a digital video recorder. Pertinent data collected by the EM system will include species caught, location, depth, date, time, and disposition of released organisms. Each EM system will be configured to collect data for the entire study period (12 months). In addition to completing detailed discard logbooks, fishermen will retain up to 300 regulatory discards for selected species in order to characterize the age-size structure by the stock. At-sea observers will be placed on a portion of trips monitored with video hardware. Electronic monitoring data will be interpreted and compared to results from fishermen's discard logbooks as well as data recorded by at-sea observers. A

workshop held post data collection (2nd year) will allow stakeholders an opportunity to learn more about this study and explore future opportunities for collaborative partnerships.

Project Funding:

Federal	\$381,765
Non-Federal	\$0
Total	\$381,765

NA09NMF4540139

CRP PROJECT SUMMARY

Project Title: Reproductive Biology and Ecology of Important Shallow-Water Snapper Species in South Florida and the Florida Keys.

Project Start Date: August 1, 2009

Name, Address, and Telephone Number of Applicant:

Florida Fish and Wildlife Conservation Commission
100 8th Ave S.
St. Petersburg, FL. 33701
(727)896-8626

Principal Investigator(s) and Brief Statement of Qualifications:

Dr. Richard McBride has over 20 years experience in Marine Science.

Specific Priority(ies) in Solicitation to which Project Responds:

The primary priority area addressed in this project is: (1,a,6) data collection to improve information on the reproductive characteristics of commercial finfish in order to better examine stock resilience and long-term biological productivity; In addition this project will tentatively examine issues related to priority (1,e,1) evaluating the potential importance of a South Atlantic MPA to the recruitment of reef fish in the Southeast region. Finally, this research project addresses the primary objective of the CRP program, conducting research to increase and improve the working relationship between state, federal, and industry partners.

Summary of Work:

Working within fisheries dependent sources, collect gonads and otoliths for reproductive and age analysis, respectively, from gray mutton and yellowtail snappers; (ii) Conduct supplemental fisheries independent sampling in conjunction with selected commercial and recreational fisheries operators, for the purpose of filling reproductive data requirements not achieved through fishery dependent sampling; (iii) Conduct processing of otoliths for age analysis; (iv) Conduct histological processing of reproductive samples for microscopic evaluation (v) Conduct statistical analysis of reproductive, age, and size data for each species in order to examine trends in reproductive activity and age/size at maturity within and between geographic study regions (vi) Prepare reports for NMFS, SERO, (v) summarize results for dissemination to fishers through outreach meetings and prepare project analysis results for submission to peer-reviewed journals.

Project Funding:

Federal	\$ 131,927
Non-Federal	\$ 63,573
Total	\$ 195,500

NA09NMF4540140

CRP PROJECT SUMMARY

Project Title: Survival of Discarded Reef Fish Species in the Recreational Fishery Using At-Sea Observer Surveys and Mark-Recapture Methods off the Florida Coast in the Gulf of Mexico

Project Start Date: August 1, 2009

Name, Address, and Telephone Number of Applicant:

Florida Fish and Wildlife Conservation Commission
100 8th Ave S.
St. Petersburg, FL. 33701
(727)896-8626

Principal Investigator(s) and Brief Statement of Qualifications:

Dr. Richard McBride has over 20 years experience in Marine Science.

Specific Priority(ies) in Solicitation to which Project Responds:

1.B.b.(Commercial Finfish) Research/Management Alternatives: (2) Utilize observers on-board vessels as a means of collecting detailed catch, effort, and disposition data; (5) Determine discard mortality rates.

Summary of Work:

This study will evaluate five reef fish species that are primary target species within the recreational fishing sector: red snapper, vermilion snapper, gag, red grouper, and gray triggerfish. This project is timely given new regulations implemented in the Gulf of Mexico in 2008 to reduce and minimize discard mortality for reef fish species. This project will utilize at-sea observers employed by FWC in cooperation with operators of for-hire headboat vessels to collect detailed catch and disposition data from recreationally harvested and discarded fish in the reef fish management complex in the Gulf of Mexico. The project will employ mark-recapture methods to evaluate survival of discards and will use detailed information collected during direct at-sea observations, including metrics for hooking injuries, barotrauma, handling time, and release condition, to develop procedures for estimating total discard mortality. Each species will be evaluated to determine the effects of new gear requirements in the Gulf of Mexico. We will evaluate how new requirements are being implemented in the fishery by characterizing the types of circle hooks (size, offset, design) and the use of venting tools and de-hookers. Catch rates, species composition, and release conditions will be compared to a previous study conducted on headboats in the same region from 2005-2007 to evaluate the effects and performance of the new regulations.

Project Funding:

Federal	\$ 164,436
Non-Federal	\$ 20,991
Total	\$185,427

NA09NMF4540141

CRP PROJECT SUMMARY

Project Title: Testing the Efficacy of Commercially- and Recreationally-Used Hooked Gear to Augment Existing Fisheries-Independent Surveys of Reef Fishes on the West Florida Shelf

Project Start Date: August 1, 2009

Name, Address, and Telephone Number of Applicant:

Florida Fish and Wildlife Conservation Commission
100 8th Ave S.
St. Petersburg, FL. 33701
(727)896-8626

Principal Investigator(s) and Brief Statement of Qualifications:

Dr. Ted Switzer has over 11 years experience in Marine Science.

Specific Priority(ies) in Solicitation to which Project Responds:

1.b(2)(Commercial finfish): Development of methods to determine appropriate sampling designs and pilot studies to estimate recruitment to selected fisheries.

Summary of Work:

The primary goal of the project is to develop and test the efficacy of fisheries-independent surveys of reef fishes using commercially-used bandit gear and recreationally-used hook-and-line gear. Project-development workshop with commercial and recreational fishers will be conducted at the onset of the proposed study. The recipient anticipates sampling between 160 and 240 total stations during the three seasonal sampling events scheduled during the two-year project period. Sampling will occur in varying depths in both the Florida Panhandle and mid-peninsular Florida.

Project Funding:

Federal	\$321,813
Non-Federal	\$0
Total	\$321,813

NA09NMF4540142

CRP PROJECT SUMMARY

Project Title: Evaluation of Gear Modifications Designed to Reduce the Movement of Spiny Lobster Traps

Project Start Date: August 1, 2009

Name, Address, and Telephone Number of Applicant:

Florida Fish and Wildlife Conservation Commission
100 8th Ave S.
St. Petersburg, FL. 33701
(727)896-8626

Principal Investigator(s) and Brief Statement of Qualifications:

Matthews has 18 years experience as lobster and fishery biologist conducting research on Caribbean spiny lobsters.

Project Goals and Objectives:

The goal of this project is to develop and test modifications to lobster traps, ropes, or buoys that may reduce movement of traps during storms and reduce trap impacts to habitat. Movement of traps during storms has been identified as a source of damage to coral reef and hard-bottom habitat, including the threatened acroporid corals. The commercial fishing community has identified gear modifications as their desired alternative to reduce the fishery's impact on habitat. The cooperative research proposed herein will evaluate if fishermen's proposed gear modifications are a viable way to reduce habitat impacts while not increasing trap loss, reducing lobster catch rates, or increasing bycatch.

Specific Priority(ies) in Solicitation to which Project Responds:

2. Caribbean Fisheries, b. Corals (1) Research is needed to determine the impact on coral reefs from commercial fishing operations. Industry participation is needed to determine the impacts of gear on coral reefs.

Summary of Work:

Preliminary work being conducted in partnership with NOAA's Protected Resources Division will test a wide range of gear modifications during the fall and winter of 2008. The goal of that effort is to find those gear modifications with the most promise to reduce trap movement. This proposed CRP research will build on that effort by testing combinations of the most promising trap, rope, and buoy modifications and develop a prototype trap with the best combination of gear modifications to reduce trap movement. We will then measure the movement and impact of prototype traps after storms in coral reef and hard-bottom habitat at several locations. Also, commercial fishermen will test the prototype trap under normal fishing conditions to evaluate gear durability, trap loss, bycatch, and lobster catch rates.

Project Funding:

Federal	\$145,744
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Non-Federal	\$0
Total	\$145,744

NA10NMF4540100

CRP PROJECT SUMMARY

Project Title: Post-Release Survival and Habitat Utilization of Juvenile Swordfish in the Florida Straits Recreational Fishery

Project Start Date: September 1, 2010

Name, Address, and Telephone Number of Applicant:

Dr. David W. Kerstetter
Oceanographic Center
Nova Southeastern University
3301 College Avenue
Fort Lauderdale, FL 33314
Phone: (954) 262-3664

Principal Investigator(s) and Brief Statement of Qualifications:

Dr. David Kerstetter, with seven years conducting fisheries research at sea aboard commercial pelagic longline vessels.

Project Goal and Objectives: Projects to characterize the total catch (from all fleets affecting the stocks), including catch composition and disposition of the catch. Projects focusing on the composition and disposition of bycatch and discards such as to determining the effects on discard rates of increasing size limits or reducing possession limits. Research is needed to improve estimates of discard mortality rates and must account for the effects of fish size, gear, area, season and depth of fishing. Research is needed to determine discard mortality rates. At-sea observers on recreational and charter boat trips are one way to perform this type of research.

Specific Priority(ies) in Solicitation to which Project Responds:

This project responds directly to priority A (Commercial Finfish); 4.

Summary of Work: This proposed research includes four goals: one, to assess post-release survival of undersized swordfish in the Florida Straits; two, to describe habitat utilization and high-resolution vertical behavior of these individuals, with inferences on recreational and commercial fisheries interactions; three, to use these data to run simulations on the effectiveness of minimum size and retention limit regulations to minimize fishing mortality (F) on the stock; and four, to characterize the catch composition and disposition of the Florida Straits recreational swordfish fishery. Beyond establishing baseline data for the fishery, identifying ways to minimize fishing mortality (F) for the swordfish stock – whether through minimizing immediate mortality or reducing fisheries interactions with undersized individuals – will help ensure the long-term sustainability of the fishery.

Project Funding:

Federal	\$183,768
Non-Federal	\$0
Total	\$183,768

NA10NMF4540101

CRP PROJECT SUMMARY

Project Title: Engineering Bycatch Reduction With Trap Vents in West Indian Fish Traps

Project Start Date: September 1, 2010

Name, Address, and Telephone Number of Applicant:

St. Thomas Fishermen's Association, Inc
PMB 379, 8168 Crown Bay Marine, Suite 310
St. Thomas, Virgin Islands of the U.S., 00802

Principal Investigator(s) and Brief Statement of Qualifications:

Dr. David Andrew Olsen, has over 40 years experience in all aspects of fisheries science and development including, fishery management, operation of fishing fleets, international trade in seafood, and development consultancies throughout Caribbean, North America, West Africa and Middle East.

Specific Priority(ies) in Solicitation to which Project Responds:

This project responds directly to priority A (Commercial Finfish); 4.

Summary of Work: The proposed project will develop escape vents for West Indian Fish traps in order to engineer reduction in bycatch and associated mortalities. It builds on findings of studies funded under a prior CRP-funded study to MRAG Americas¹ and a MARFIN-funded project to the St. Thomas Fishermen's Association. These studies identified species caught as bycatch in fish trap fisheries and identified species which suffer mortality in the traps.

Project Funding:

Federal	\$115,820
Non-Federal	\$ 0
Total	\$115,820

NA10NMF4540102

CRP PROJECT SUMMARY

Project Title: Continuation of the Catch Characterization and Discards with the Snapper-Grouper Vertical Hook-and-Line Fishery of the South Atlantic United States

Project Start Date: September 1, 2010

Name, Address, and Telephone Number of Applicant:

Gulf & South Atlantic Fisheries Foundation, Inc
Lincoln Center, Suite 740
5401 W. Kennedy Blvd.
Tampa, Florida 33609-2447
(813) 286-8390

Principal Investigator(s) and Brief Statement of Qualifications:

Judy Jamison has over 29 years experience in administrative and grants management.

Project Goal and Objectives: Continue an observer program within the snapper-grouper vertical hook-and-line fishery of the South Atlantic United States. Utilize previously trained, or contract and train a fishery observer to collect critical stock assessment data to quantify total catch, effort, and discards within the fishery. With assistance of the South Atlantic Sustainable Fisheries Association, Inc. and other associations, actively solicit the participation of cooperating vessels and disseminate the results of data collected during the program; and Compare trends in bycatch and assemblage structure across time and space with a bycatch model to identify when and where bycatch is greatest and least for select species.

Specific Priority(ies) in Solicitation to which Project Responds:

This project responds directly to priority A (Commercial Finfish); 4.

Summary of Work: Many species within the snapper-grouper fishery management unit are data poor. As a result, many of the species specific stock assessments have a high level of uncertainty associated with the models, including catch characterization, effort, and quantity of discards. To enhance the universe of data that are available to stock assessment scientists, we propose to continue a fishery observer program within the snapper-grouper vertical hook-and-line (bandit rig) fishery of the South Atlantic United States. Through cooperation of Foundation Coordinators, we will solicit the participation of the commercial fishing industry to voluntarily assist in the performance of this project. An observer will be placed onboard cooperating vessels to collect a variety of data quantifying the participation, gear, effort, catch, and discards within the fishery. The intent of this project is not to form a standalone dataset, but to augment currently available datasets. As such, most data analyses will be descriptive (proportional catch, discards, etc.), although some statistical tests will be conducted, particularly through the use of a bycatch assemblage model. With the information derived from this project, the South Atlantic Fishery Management Council and NOAA Fisheries can better assess the impact of current effort and discards on the data-poor snapper-grouper fishery.

Project Funding:

Federal	\$250,082
Non-Federal	\$0
Total	\$250,082

NA10NMF4540103

CRP PROJECT SUMMARY

Project Title: Collaborative research to quantify and reduce bycatch mortality of blacknose sharks in shrimp trawls: From Big Brother to Big Boy

Project Start Date: September 1, 2010

Name, Address, and Telephone Number of Applicant:

University of Georgia Marine Extension Service
715 Bay Street
Brunswick, GA 31525

Principal Investigator(s) and Brief Statement of Qualifications:

Ms. Lisa Liguori, has 10 years experience marine fisheries.

Project Goal and Objectives: (1) To place observers on shrimp trawlers in the South Atlantic to record the number and sizes of highly migratory shark species (e.g. Atlantic sharpnose, finetooth, bonnethead, blacknose, sandbar, and blacktip) that are caught. Disposition of the sharks when they are returned to the water will also be recorded, as will the type of TED being used. (2) To train cooperating shrimpers in shark identification and facilitate their own record-keeping with logbooks and recyclable waterproof cameras. Pairing traditional scientific observation with cooperative research challenges the idea that a scientist on board represents a judgmental 'big brother'. In addition, this pro-active study prepares fishermen and managers to address issues that may become contentious in the future. Addressing questions before they become controversial allays fishermen's concern that managers and scientists begin research projects with set agendas. (3) To collect fishery-independent data aboard the R/V Georgia Bulldog, a 72' shrimp trawler that has been converted for research and education. Simultaneous tows will compare the industry standard double cover TED with 4" bar spacing to the Georgia Jumper Big Boy with 2" bar spacing. All fisheyes will be removed to test the bycatch reduction potential and shrimp retention of these TEDs. (4) To encourage the use of TEDs with 2" bar spacing and to distribute Big Boy TEDs to cooperating vessels free of charge. Follow-up interviews with fishermen will capture their input about the TED's effectiveness.

Specific Priority(ies) in Solicitation to which Project Responds:

This study directly addresses the NOAA CRP program priority 4d: quantification of bycatch rates and bycatch mortality of species of concern.

Summary of Work: This collaborative project provides needed information to managers and industry members regarding interactions between blacknose sharks and shrimp trawlers in the South Atlantic. Other related priorities include: providing economic incentives to reduce bycatch (2c) and evaluation of BRD testing protocols (4c). The sandbar shark, blacktip shark, and blacknose shark are among species caught as bycatch in shrimp trawls off the coast of Georgia.

Project Funding:

Federal	\$59,330
Non-Federal	\$0

Total	\$59,330
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NA10NMF4540104

CRP PROJECT SUMMARY

Project Title: The Role of Shrimp Imports in the Decline of Shrimp Reliant Communities in the Gulf of Mexico

Project Start Date: September 1, 2010

Name, Address, and Telephone Number of Applicant:

Gulf & South Atlantic Fisheries Foundation, Inc
Lincoln Center, Suite 740
5401 W. Kennedy Blvd.
Tampa, Florida 33609-2447
(813) 286-8390

Principal Investigator(s) and Brief Statement of Qualifications:

Judy Jamison has over 29 years experience in administrative and grants management.

Project Goal and Objectives: (1) Characterize the dependence on the shrimp fishery of selected communities; (2) Characterize the stresses on the shrimp fishery and decline in market share in these communities; (3) Characterize the role of imports in the decline of market share of locally produced and/or processed shrimp; (4) Characterize the impact on communities of a severely diminished local shrimp fishery; and (5) Analyze the potential for alternative marketing programs for wild caught shrimp at the local level.

Specific Priority(ies) in Solicitation to which Project Responds:

This project responds directly to priority A (Commercial Finfish); 4.

Summary of Work: The substitution of imported for locally harvested product has contributed to low dockside prices, causing concern among both harvesters and processors. In the past, price was determined by the amount of fresh shrimp available combined with the quantity held in cold storage because local harvesters contributed most of the shrimp consumed. Today international market conditions drive price while imported shrimp are capturing more of the value added processing dollars. Although decreased prices for wild caught shrimp appear to be correlated with the rise of imports at the industry wide level, we do not have a clear idea of the impact that imports have on local communities that are reliant on the shrimp fishery. This project aims to fill this research gap. This project will build on earlier research conducted by the participants in the realm of socio-economic indicators. It will rely on both existing datasets and ethnographic ground-truthing. The model IMPLAN will be used to trace the economic importance of the shrimp industry on specific communities and to assess the economic impact on these communities should the industry decline.

Project Funding:

Federal	\$298,710
Non-Federal	\$0
Total	\$298,710

NA10NMF4540108

CRP PROJECT SUMMARY

Project Title: Continued Development and Assessment of Bycatch Reduction Devices within the Southeastern Shrimp Trawl Fishery

Project Start Date: September 1, 2010

Name, Address, and Telephone Number of Applicant:

Gulf & South Atlantic Fisheries Foundation, Inc
Lincoln Center, Suite 740
5401 W. Kennedy Blvd.
Tampa, Florida 33609-2447
(813) 286-8390

Principal Investigator(s) and Brief Statement of Qualifications:

Judy Jamison has over 29 years experience in administrative and grants management.

Project Goal and Objectives: (1) Solicit and test new and/or promising BRDs that show potential for reducing the quantity of bycatch incidentally harvested during shrimp trawling efforts; (2) Quantify the bycatch reduced by new and/or promising experimental BRDs within the EEZ of the Gulf of Mexico and South Atlantic; (3) Calculate reduction rates achieved for each BRD tested to include total shrimp, finfish, and total bycatch, and estimate red snapper fishing mortality (F); (4) Increase the shrimp industry's participation in BRD research and development to enhance awareness and involvement in fisheries management; and (5) Provide improved data collection on the extent of bycatch of small coastal sharks in the Gulf shrimp fishery, particularly blacknose shark (*Carcharhinus acronotus*) and smalltooth sawfish (*Pristis pectinata*).

Specific Priority(ies) in Solicitation to which Project Responds:

This project responds directly to priority 4. Commercial Shrimp Harvest, b. Quantification of effort; c. Bycatch Reduction Device Testing Protocols; d. Quantification of Bycatch Rates.

Summary of Work: This project will field test new or promising bycatch reduction devices (BRDs) for certification following the NMFS BRD Certification Testing Protocol for the Gulf of Mexico and South Atlantic. BRD designs will be solicited from shrimp fishermen, industry gear innovators, Sea Grant Extension agents, and NMFS Harvesting Branch Personnel. Devices will be field tested aboard commercial fishing vessels with onboard observers collecting data outlined within the Testing Protocols. Collected data will be analyzed to identify the reduction in fishing mortality achieved by BRDs. To increase industry's involvement in the process of BRD research and development, the Foundation will solicit industry designed BRDs, contribute funds for industry BRD development, and reimburse the travel of industry members to Panama City to observe underwater hydrodynamic performance tests of fishing gear.

Project Funding:

Federal	\$237,533
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Non-Federal	\$0
Total	\$237,533

NA10NMF4540109

CRP PROJECT SUMMARY

Project Title: Development of Genetic Markers for Blacknose (*Carcharhinus acronotus*) and Finetooth (*Carcharhinus isodon*) sharks

Project Start Date: September 1, 2010

Name, Address, and Telephone Number of Applicant:

Texas A&M Research Foundation
College Station, Texas 77843-3578
979-845-8629

Principal Investigator(s) and Brief Statement of Qualifications:

Dr. John R. Gold (Voice: 979-847-8778; e-mail: goldfish@tamu.edu) has >34 years experience in fish genetics, including several studies of stock structure of marine fishes

Dr. David S. Portnoy (Voice: 979-845-1338; e-mail: dsport@tamu.edu) has 10 years of experience working in marine systems, including the last seven years using molecular techniques to address conservation and management issues in long-lived marine fishes, primarily sharks

Project Goal and Objectives: Experimental objectives of the proposed project are to (i) develop and optimize 10-25 highly polymorphic microsatellite markers for each of two shark species important to commercial fisheries, (ii) test the microsatellites for conformance to Hardy Weinberg and genotypic equilibrium, and (iii) characterize geographic variation at each microsatellite among samples from U.S. waters.

Specific Priority(ies) in Solicitation to which Project Responds:

This project responds directly to priority A (Commercial Finfish); 4.

Summary of Work: (1) Acquire tissues (fin clips) from up to 75-90 adult blacknose and finetooth sharks sampled from localities in the U.S. South Atlantic and the Gulf of Mexico, (2) develop and optimize from 15-20 polymorphic microsatellites, (3) characterize geographic variation at each microsatellite, and (iv) prepare reports as required by NMFS.

Project Funding:

Federal	\$86,418
Non-Federal	\$0
Total	\$86,418

NA10NMF4540111

CRP PROJECT SUMMARY

Project Title: iSnapper: Design, testing, and analysis of an iPhone-based application as an electronic log book in the for-hire fisheries

Project Start Date: September 1, 2010

Name, Address, and Telephone Number of Applicant:

Texas A&M University-Corpus Christi
6300 Ocean Drive, Corpus Christi, TX 78412

Principal Investigator(s) and Brief Statement of Qualifications:

Dr. Greg Stunz, has over 20 years experience

Specific Priority(ies) in Solicitation to which Project Responds:

This proposal directly addresses at least *4 CRP objectives* pertaining to data collection, recording real-time for-hire harvest, discard mortality rates, and collection of fisheries related socio-economic information.

Summary of Work: A primary need in fisheries management is the ability to collect timely, quality data from participants. Recently, this has become particularly essential as it relates to recreational fisheries. Because most fishermen in the recreational sector directly consume the fish harvested and there are large numbers of diverse participants, reporting requirements for this sector are extremely limited. Harvest is estimated through a combination of surveys and reporting requirements for headboats. Because these techniques do not provide enough information to consistently predict harvest, it has been suggested that increasing the reporting requirement for participants in the for-hire fisheries through an electronic logbook system would aid in accurately predicting harvest. The overall goals of this project are to (1) develop an affordable, highly adaptable, simple to use, and portable application for "smart phones" (e.g., Apple iPhone) that functions as an electronic logbook in the Gulf of Mexico recreational for-hire fisheries; and (2) determine how this application can impact the end user and as a tool for collecting socioeconomic information on fishermen. The overarching rationale for the proposed research is that development of an application through cooperation of scientists, managers, and fishermen, will be highly accepted by vessel captains. Buy-in by the user groups should increase data quality and enhancing conservation and management decisions for fisheries. Moreover, this tool will be highly adaptable to a variety of fisheries.

Project Funding:

Federal	\$178,886
Non-Federal	\$0
Total	\$178,886

NA10NMF4540112

CRP PROJECT SUMMARY

Project Title: Re-evaluation of reproductive biology and population structure of the blacknose shark (*Carcharhinus acronotus*) in U.S. waters

Project Start Date: September 1, 2010

Name, Address, and Telephone Number of Applicant:

Department of Biology
University of North Florida
1 UNF Drive
Jacksonville, FL 32224
(904) 620-1575

Principal Investigator(s) and Brief Statement of Qualifications:

James Gelslechter, Ph.D., 20 years experience in Marine Biology.

Project Goal and Objectives: The specific objectives of the proposed study are to:

1. Reexamine the reproductive biology of Atlantic blacknose sharks; and
2. Initiate new studies on population structure in blacknose sharks using improved genetics methods.

Specific Priority(ies) in Solicitation to which Project Responds:

This project responds directly to priority 1e. Data collection projects to improve life history information on commercial elasmobranch species.

Summary of Work: The researchers will study the reproductive biology of Atlantic blacknose sharks. Fishery-independent and fishery-dependent surveys will be conducted from South Carolina to east Florida. Fin biopsies will be obtained from all Atlantic sharks captured for use in genetics studies on population structure since they can be obtained in a non-lethal manner

Project Funding:

Federal	\$226,986
Non-Federal	\$0
Total	\$226,986

NA11NMF4540114

CRP PROJECT SUMMARY

Project Title: Population Size, Growth, Mortality and Movement Patterns of Yellowtail Snapper (*Ocyurus chrysurus*) in the U.S. Virgin Islands Determined Through a Multi-institutional Collaboration.

Project Start Date: September 1, 2011

Name, Address, and Telephone Number of Applicant:

St. Thomas Fishermen's Association, Inc
PMB 379, 8168 Crown Bay Marine, Suite 310
St. Thomas, Virgin Islands of the U.S., 00802

Principal Investigator(s) and Brief Statement of Qualifications: Dr. David Andrew Olsen, has over 40 years experience in all aspects of fisheries science and development including, fishery management, operation of fishing fleets, international trade in seafood, and development consultancies throughout Caribbean, North America, West Africa and Middle East.

Project Goal and Objectives: This proposal seeks to fill these data needs. There are 4 main objectives to this yellowtail snapper tagging project:

- (1) Estimate population size and exploitation rates.
- (2) Determine whether season, location or size/age influence growth rates.
- (3) Estimate degree of site fidelity and movement pathways using distance between tagging and recapture.
- (4) Create an archive of tissue samples for use in a genetic tag- recapture study.

Specific Priority(ies) in Solicitation to which Project Responds: This proposal directly addresses the following 5 program priorities: 1(e) Data collection projects to improve life history information on commercial finfish and elasmobranch species; 1(f) Projects to examine the feasibility of using genetic methods for tag and recapture of exploited species; 5(a) Cooperative projects between scientists and industry members are needed to enhance studies of the effectiveness of MPAs; 5(d) Projects to improve commercial data collection capabilities; 5(f) Projects on the collection of biological samples from commercial and recreational fisheries. This latter priority is the primary priority addressed by the current project.

Summary of Work: This project involves commercial fishermen in the collection of fundamental fisheries information to support the development of management and regulatory options for St. Thomas/St. John shelf, USVI.

Project Funding:

Federal	\$132,850
Non-Federal	\$0
Total	\$132,850

NA11NMF4540115

CRP PROJECT SUMMARY

Project Title: Pilot Study to Characterize Fishing Effort of the South Atlantic Penaeid Shrimp Trawl Fishery through the use of Electronic Logbooks

Project Start Date: September 1, 2011

Name, Address, and Telephone Number of Applicant:

Gulf and South Atlantic Fisheries Foundation
Lincoln Center, Suite 740
5401 West Kennedy Blvd.
Tampa, FL 33609
(813) 286-8390

Principal Investigator(s) and Brief Statement of Qualifications:

Judy Jamison, Executive Director, has over 30 years of administrative and grants management experience.

Project Goal and Objectives:

(1) As a pilot study, use electronic log books (ELBs) to characterize the spatial and temporal distribution of penaeid shrimp fishing effort for a subset of vessels operating in the South Atlantic; (2) Estimate catch-per-unit-effort (CPUE) of penaeid shrimp for the monitored fishing vessels; (3) Through allotted observer coverage, estimate bycatch of sea turtles and blacknose shark, *Carcharhinus acronotus* and other important bycatch species; (4) Determine the feasibility of a South Atlantic-wide ELB program for the estimation of shrimp fishing effort; and (5) If an expanded program proves feasible, organize port meetings to explain the benefits of the program to shrimp fishermen, answer their questions, and address their concerns.

Specific Priority(ies) in Solicitation to which Project Responds:

(1) Commercial finfish, **a.** Characterize the total catch (from all fleets affecting the stocks), including catch composition and disposition of catch; **(4)** Commercial Shrimp harvest; **b.** Quantification of effort; **d.** Quantification of bycatch rates.

Summary of Work:

Coastal shrimp trawl fisheries have long been the focus of government regulations to reduce bycatch of sea turtles and commercially/ecologically important species in the GOM and the U.S. Atlantic. In order to accurately measure bycatch, and thus protect both the fishermen and the resource, fishing effort estimates must be accurate. This proposal seeks to use the knowledge garnered from a successful ELB project conducted in the GOM and institute the same methodology and protocols in the SA penaeid shrimp trawl fishery. Because this is a pilot study, only minimal observer coverage is necessary, and the results will determine the feasibility of expanding the project. The benefits from this project will be to: (1) improve bycatch estimates, (2) identify traditional fishing grounds for use in designation of marine protected areas (MPA), (3) thwart the potential requirement for vessel monitoring systems, and (4) collect data that will improve stock assessments.

Project Funding:

Federal	\$225,000
Non-Federal	\$0
Total	\$225,000

NA11NMF4540116

CRP PROJECT SUMMARY

Project Title: Utility of a hooked-gear survey in developing a fisheries-independent index of abundance for red snapper along Florida's Atlantic coast.

Project Start Date: September 1, 2011

Name, Address, and Telephone Number of Applicant:

Florida Fish and Wildlife Conservation Commission
100 8th Ave S.
St. Petersburg, FL. 33701
(727)896-8626

Principal Investigator(s) and Brief Statement of Qualifications:

Dr. Ted Switzer has over 11 years experience in Marine Science.

Project Goal and Objectives: The primary objective of the proposed project is to explore the utility of data collected by a hooked-gear survey in developing a fisheries-independent index for red snapper. To accomplish the primary objective, the following objectives will be addressed: 1) Evaluate the efficacy of various hooked gear methods in providing fisheries-independent data for red snapper in the south Atlantic, 2) Develop, based on results from the proposed project, recommendations as to a fisheries-independent survey to provide data for developing indices of abundance for red snapper in the south Atlantic, 3) Provide demographic data (i.e., age, sex, reproductive condition) for red snapper and other federally-managed reef fishes, and 4) Calibrate indices of abundance from an existing fishery-dependent time series with new fishery-independent methods to produce a continuous time series from pre- and post-establishment of proposed area closures.

Specific Priority(ies) in Solicitation to which Project Responds: 1.g Projects to develop a consistent sampling methodology that will permit monitoring of the relative abundance of a fishery resource over time.

Summary of Work: The proposed project is designed to test the efficacy of hooked gears for providing fisheries-independent data for red snapper in the South Atlantic. During this one-year study, stratified-random, fishery-independent sampling will be conducted targeting identified reef habitats using various hooked-gear methods within both open and closed fishing areas. Identification of reef habitat as well as development of sampling methods will rely heavily on input from various cooperative partners from the commercial and for-hire fisheries. Secondly, we will conduct fisheries-dependent headboat surveys in both open and closed areas to produce overlapping years of fisheries-dependent and fisheries-independent data during a period when regulatory changes are expected to bias ongoing time series. Catch rates will be calibrated and linkages established between the fisheries-independent and fisheries-dependent surveys so that existing fisheries-dependent time series of red snapper abundance can continue to be utilized for assessments until a longer time-series of fisheries-independent data are available. Concurrently, we will collect biological data (i.e. age, sex, reproductive condition, mercury concentration in muscle tissue) that will be instrumental in assessing the recovery of red snapper in the south Atlantic in light of continued harvest restrictions. At the completion of the study, we will develop recommendations as to overall survey design and sampling effort for transitioning to a regional fisheries-independent

monitoring program targeting red snapper and other managed fishes along the United States Atlantic coast.

Project Funding:

Federal	\$293,807
Non-Federal	\$0
Total	\$293,807

NA11NMF4540117

CRP PROJECT SUMMARY

Project Title: A Cooperative Approach to Updating and Investigating Anomalies in Critical Life History Parameters of Two Exploited Shark Species, Blacknose and Finetooth Sharks in the Northern Gulf of Mexico

Project Start Date: September 1, 2011

Name, Address, and Telephone Number of Applicant:

The University of Southern Mississippi
703 East Beach Drive
Ocean Springs, MS 39564

Principal Investigator(s) and Brief Statement of Qualifications:

Jill Hendon, 10 years experience in Marine Biology.

Project Goal and Objectives: The overall goal of this study is to investigate the extent of the differences in life history parameters for blacknose and finetooth sharks in the northern Gulf of Mexico. To achieve this overall goal, we intend to: 1) update age and growth parameters, 2) provide critical reproductive data, including detailed descriptions of the temporal changes in gonadal development, and histology, and 3) elucidate age and size at sexual maturity. Once completed, we will be able to compare and determine the degree of intra-specific variation in the life history traits of blacknose and finetooth sharks within the northern Gulf of Mexico. As a result, the most detailed and accurate fishery management data will be provided for these species.

Summary of Work: The overall goal of this study is to investigate the extent of the differences in life history parameters for blacknose and finetooth sharks in the northern Gulf of Mexico.

Project Funding:

Federal	\$163,633
Non-Federal	\$0
Total	\$163,633

NA11NMF4540118

CRP PROJECT SUMMARY

Project Title: Continuation of a Project to Augment the Data Collection of an Electronic Logbook System Used Within the Gulf of Mexico Shrimp Fishery

Project Start Date: September 1, 2011

Name, Address, and Telephone Number of Applicant:

Gulf and South Atlantic Fisheries Foundation
Lincoln Center, Suite 740
5401 West Kennedy Blvd.
Tampa, FL 33609
(813) 286-8390

Principal Investigator(s) and Brief Statement of Qualifications:

Judy Jamison, Executive Director, has over 30 years of administrative and grants management experience.

Project Goal and Objectives:

(1) Complement an ELB study with onboard observers to collect data on fishing effort, red snapper bycatch, and shrimp landings within the Gulf of Mexico; (2) Analyze all observer collected data to further ensure that ELB landings estimates are accurate and defensible; (3) Determine the spatiotemporal abundance of juvenile red snapper, compute a total mortality (Z) estimate for shrimp-trawl red snapper bycatch, and conduct a formal cohort analysis (VPA) on all observer collected red snapper data; and (4) Provide improved data collection on the extent of bycatch of small coastal sharks in the Gulf shrimp fishery, particularly blacknose shark (*Carcharhinus acronotus*) and smalltooth sawfish (*Pristis pectinata*).

Specific Priority(ies) in Solicitation to which Project Responds:

1. Commercial Finfish, **c.** Investigations are needed to determine more efficient methods to record effort accurately on a real-time basis during fishing operations. **4.** Commercial Shrimp Harvest, **b.** Quantification of Effort; **d.** Quantification of Bycatch Rates.

Summary of Work:

The dynamics of the red snapper fishery are complex and various user groups are thought to impact the stock. To alleviate the confusion surrounding the bycatch of juvenile trawl-caught red snapper and blacknose shark in the Gulf shrimp fishery, the Foundation proposes the continuation of a program to augment an electronic logbook (ELB) project with fishery observers. Fishery observers will be placed aboard shrimp trawl vessels that have been randomly selected and have an ELB installed. Observers will collect catch and bycatch data on total penaeid shrimp, red snapper, and small coastal sharks. Data collected during this project will be used to update the formal cohort analysis (VPA) and compute mortality estimates for all Foundation collected red snapper bycatch data (both past and present). Results will be used to validate ELB landings estimates by region (statistical zone) and quantify red snapper and small coastal shark bycatch rates.

Project Funding:

Federal	\$225,000
Non-Federal	\$0
Total	\$225,000

NA11NMF4540120

CRP PROJECT SUMMARY

Project Title: Fine-Scale Behavior and Mortality in Post-Release Carcharhinid Sharks in the Florida Recreational Shark Fishery

Project Start Date: September 1, 2011

Name, Address, and Telephone Number of Applicant:

Center for Shark Research
Mote Marine Laboratory
1600 Ken Thompson Parkway
Sarasota, FL 34236
(941) 388-4441

Principal Investigator(s) and Brief Statement of Qualifications:

Nicholas Whitney, Ph.D. studied shark behavioral ecology, reproduction, and population genetics for more than 14 years, and for the past five years has applied accelerometry to the study of shark activity and fine-scale behaviors. Robert E. Hueter, Ph.D. has 39 years' experience in shark biology and ecology, including the application of electronic tags to various shark species.

Project Goal and Objectives: The proposed study would be the first to quantify post-release mortality and behavioral effects of capture on blacktip sharks (*Carcharhinus limbatus*) caught in the Florida recreational shark fishery, and empirically test the differential impacts of circle- vs. Jhooks on physiology and mortality. It will also integrate conventional and novel techniques which have the potential to revolutionize the study of post-release mortality in coastal species.

Specific Priority(ies) in Solicitation to which Project Responds: This work directly fulfills NMFS priority 3.d. *Recreational and Charter Fishery: Research is needed to determine discard mortality rates*, and also focuses on Highly Migratory Species (HMS) of concern: the blacktip shark in two regions (Gulf and Atlantic Coasts of Florida). It also addresses an additional area of interest: the effect of circle- vs. J-hooks on post-release mortality, thereby enabling us to provide recommendations on gear type for NMFS management initiatives.

Summary of Work: Working with Florida professional charterboat fishers to tag animals with acceleration data loggers (ADLs), a relatively new and innovative technique with increasing application in fisheries research. ADLs record animal movements and body posture (*i.e.*, tailbeat frequency, acceleration amplitude, rolling or inability to remain upright) at sub-second intervals, and therefore provide high-resolution information about mortality, swimming abnormalities, and recovery time.

Project Funding:

Federal	\$192,325
Non-Federal	\$0
Total	\$192,325

NA12NMF4540078

CRP PROJECT SUMMARY

Project Title: Examining Hook Selectivity in the Northern Gulf of Mexico Recreational Reef Fish Fishery

Project Start Date: September 1, 2012

Name, Address, and Telephone Number of Applicant:

Department of Marine Sciences
University of South Alabama
Mobile, AL 36688-0002
Tel: (251) 861-7541 x2428 Fax: (251) 460-7136

Principal Investigator(s) and Brief Statement of Qualifications:

Dr. Will Patterson has 13 years of experience on research on age and growth, population dynamics, fisheries ecology, and otolith microchemistry.

Project Goal and Objectives: The overall goal of this project is to provide information essential for the effective management and conservation of reef fish resources in the US Gulf, with a focus on red snapper, the predominant fishery species in the north central Gulf. Our primary objective is to estimate whether the problem of discards in the recreational fishery can be mitigated with creative approaches to regulating fishing gear, as well as by assessing the effect of gear selectivity on the efficacy of a “first fish” rule advocated by leaders of the charterboat industry (AHRRSAP 2008). Over the course of the study, we (a team of scientists and charterboat Captains; see below and attached letters) will examine the selectivity of different terminal tackle used in the recreational fishery by conducting fishing experiments in the north central Gulf, which is the center of both the private and for-hire recreational red snapper fishery sectors.

Specific Priority(ies) in Solicitation to which Project Responds: This work directly fulfills NMFS priority 3.d. *Recreational and Charter Fishery: Research is needed to determine discard mortality rates.*

Summary of Work: They will test critical assumptions about whether hook type and size affect selectivity, thus discard rates, in the recreational reef fish fishery, but we also will provide direct observations of catch rates, discard rates, and the size and disposition of the landed versus ROV-based approach described above to estimate the size distribution of red snapper present on discarded catch. In estimating selectivity, we will use the novel reef sites that subsequently will be fished as part of selectivity experiments. This will permit the direct estimation of selectivity for the hook sizes/types tested, which will provide important data to modelers as well as inform future management decisions relative to rebuilding and efficiently utilizing the red snapper resource.

Project Funding:

Federal	\$202,636
Non-Federal	\$0

Total	\$202,636
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NA12NMF4540079

CRP PROJECT SUMMARY

Project Title: Red drum spawning stock size and structure in the eastern Gulf of Mexico

Project Start Date: September 1, 2012

Name, Address, and Telephone Number of Applicant:

Florida Fish and Wildlife Conservation Commission
100 Eighth Avenue SE
St. Petersburg, FL 33701
(727) 896-8626

Principal Investigator(s) and Brief Statement of Qualifications:

Dr. Susan Lowerre-Barbieri conducts research on reproductive dynamics and life history of marine finfish, integrating acoustic telemetry, traditional reproductive biology, and population dynamics.

Project Goal and Objectives: The objective of our project is to test the feasibility of using a genetic tag/recapture approach, in conjunction with biotelemetry and aerial surveys, to estimate red drum spawning stock abundance and structure. Because the red drum stock in the Gulf appears to exhibit a meta-population structure, it is important to first test this method over a small spatial scale (Tampa Bay to Charlotte Harbor) and to evaluate adult movement patterns before applying it to a larger geographic region. Specifically, this project proposes to:

- 1) Use a purse seine to sample large numbers of red drum during the spawning season which can be sampled for genetic profiling and released to determine if genetic tag/recapture techniques can be used to assess spawning stock abundance.
- 2) Evaluate spatial dynamics affecting the stock structure, including the distribution of aggregations, geographic range of adult movement, and mixing amongst spawning populations using aerial surveys, genetic tracking, and acoustic telemetry.
- 3) Investigate recruitment of local sub-adult red drum to offshore spawning aggregations.

Specific Priority(ies) in Solicitation to which Project Responds: Gulf of Mexico Fisheries Management Council (GMFMC) species of concern. 1. Commercial and Recreational Finfish: (e) Improved information on the reproductive characteristics of the stock will provide information to refine estimates of long-term biological productivity of the stock; and (f) projects to examine the feasibility of using genetic methods for tag and recapture of exploited species.

Summary of Work: This study will test the efficacy of using a genetic tag/recapture approach, in conjunction with biotelemetry and aerial surveys, to estimate red drum spawning stock abundance and structure. Specifically, this project proposes to: (1) use a purse seine to sample large numbers of red drum during the spawning season which can be sampled for genetic profiling and released to determine if genetic tag/recapture techniques can be used to assess spawning stock abundance; (2) evaluate spatial dynamics affecting the stock structure, including the distribution of aggregations, geographic range of adult movement, and mixing amongst spawning populations using aerial surveys, genetic tracking, and acoustic telemetry; and (3) investigate recruitment of local sub-adult red drum to offshore spawning aggregations by evaluating the adult genetic profiles from Tampa Bay spawning aggregations for Tampa Bay sub-adults which were previously genetically profiled (2001 to 2007; n=8,200).

Project Funding:

Federal	\$215,394
Non-Federal	\$0
Total	\$215,394

NA12NMF4540080

CRP PROJECT SUMMARY

Project Title: Characterizing the reproductive biology of species in the Small Coastal Shark (SCS) fishery complex in U.S. Atlantic waters

Project Start Date: September 1, 2012

Name, Address, and Telephone Number of Applicant:

Department of Biology
University of North Florida
1 UNF Drive
Jacksonville, FL 32224
(904) 620-1575

Principal Investigator(s) and Brief Statement of Qualifications:

James Gelsleichter, Ph.D., 25 years experience in Marine Biology.

Project Goal and Objectives: The specific objective of the proposed study is to examine the reproductive biology of *S. tiburo* and *C. isodon* from Atlantic waters. This objective will be fulfilled using sharks captured in fishery-dependent and fishery-independent sampling efforts conducted throughout most of the U.S. range of Atlantic bonnethead and finetooth shark populations, and during all stages of reproduction. The involvement of commercial and recreational fishers from South Carolina and Florida waters is critical for ensuring that a sufficient number of samples are obtained throughout the year and from all areas so that an unambiguous assessment of the reproductive biology of these species can be made.

Specific Priority(ies) in Solicitation to which Project Responds: 1e. Data collection projects to improve life history information on commercial and recreational finfish and elasmobranch species.

Summary of Work: The reproductive biology of Atlantic *C. isodon* and *S. tiburo* will be studied via comprehensive examination of mature male and female bonnetheads and finetooth sharks obtained in fishery-independent and fishery-dependent surveys.

Project Funding:

Federal	\$154,836
Non-Federal	\$0
Total	\$154,836

NA12NMF4540081

CRP PROJECT SUMMARY

Project Title: Combining fishery-independent and fishery-dependent methods: a pilot study on a hybrid approach to sampling reef fishes

Project Start Date: September 1, 2012

Name, Address, and Telephone Number of Applicant:

USF College of Marine Science
140 7th Avenue South
St. Petersburg, Florida 33701
Phone: 727-553-3371
Fax: 727-553-1189

Principal Investigator(s) and Brief Statement of Qualifications:

Dr. Christopher Stallings has expertise in the ecology of groupers and snappers, trophic ecology and analysis of large data sets.

Project Goal and Objectives: 1. Develop and test a hybrid approach to sampling reef fishes using combined fishery independent (FI) and fishery-dependent (FD) methods.
2. Provide recommendations as to how this hybrid approach can augment ongoing reef fish surveys in a cost-effective manner.
3. Provide valuable demographic data for reef fishes that will inform NMFS on age structure and reproductive status of priority species and investigate the structure of trophic webs on reefs of the west Florida shelf.

Specific Priority(ies) in Solicitation to which Project Responds: Our research addresses the Cooperative Research Program priorities focused on commercial finfish, especially 1.a., 1.b., 1.d., and 1.e., with ancillary data potentially informative to 1.g., 1.h. and 1.i.

Summary of Work: We propose a pilot study to develop and test a hybrid approach to sampling reef fish populations by integrating aspects of both FI and FD methods. This project will focus on five highly-valuable reef fishes from the west Florida shelf that will soon undergo stock assessment.

Project Funding:

Federal	\$272,900
Non-Federal	\$0
Total	\$272,900

NA13NMF454055

CRP PROJECT SUMMARY

Project Title: Red drum spawning stock size and structure in the eastern Gulf of Mexico **Project**

Start Date: September 1, 2013

Name, Address, and Telephone Number of Applicant:

Florida Fish and Wildlife Conservation Commission
100 8th Ave S.
St. Petersburg, FL. 33701
(727)896-8626

Principal Investigator(s) and Brief Statement of Qualifications: Lowerre-Barbieri conducts research on reproductive dynamics and life history of marine finfish, integrating acoustic telemetry, traditional reproductive biology, and population dynamics. Tringali oversees the statewide genetic research program for FWC and has extensive experience with conducting marine population, fish stock identification, and individual-based mark-recapture genetic studies. Murphy leads the statewide marine stock assessment program for FWC and has extensive experience with red drum research, assessment and management.

Specific Priority(ies) in Solicitation to which Project Responds: Gulf of Mexico Fisheries Management Council (GMFMC) species of concern. 1. Commercial and Recreational Finfish: (f) projects to examine the feasibility of using genetic methods for tag and recapture of exploited species; and (e) Improved information on the reproductive characteristics of the stock will provide information to refine estimates of long-term biological productivity of the stock.

Summary of Work:

We request continued funding to estimate red drum spawning stock abundance and structure based on genetic tag/recapture, aerial aggregation surveys, and biotelemetry. This extended funding will allow us to meet the following objectives: (1) sample red drum by purse seine a second year, enabling us to use genetic tag/recapture techniques to estimate inter-annual return rates and improve our ability to estimate spawning stock abundance; (2) continue to track the movements of 60 fish implanted in 2012, refine our receiver array, and implant another 25 fish; (3) collect another year of aggregation location data; and (3) continue to investigate recruitment of local sub-adult red drum to offshore spawning aggregations by evaluating if any of the adult genetic profiles from Tampa Bay spawning aggregations match those of Tampa Bay sub-adults genetically profiled in 2001-2007 (n=8,200).

Project Funding:

Federal	\$175,862
Non-Federal	\$0
Total	\$175,862

Appendix 3. Federal Funding Opportunity

ANNOUNCEMENT OF FEDERAL FUNDING OPPORTUNITY
EXECUTIVE SUMMARY

Federal Agency Name(s): National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Department of Commerce

Funding Opportunity Title: Cooperative Research Program (CRP)

Announcement Type: Initial

Funding Opportunity Number: NOAA-NMFS-SE-2014-2003763

Catalog of Federal Domestic Assistance (CFDA) Number: 11.454, Unallied Management Projects

Dates: Applications must be received on grants.gov by 5:00 p.m. Eastern Time on August 30, 2013 to be considered for funding. Please note: Validation or rejection of your application by Grants.gov may take up to 2 business days after submission. Please consider this process in developing your submission timeline.

Funding Opportunity Description: The Cooperative Research Program (CRP) provides opportunity to compete for financial assistance for projects which seek to increase and improve the working relationship between fisheries researchers from the NMFS, state fishery agencies, universities, and the U.S. fishing (recreational and commercial) in the Gulf of Mexico (FL, AL, MS, LA, TX), South Atlantic (FL, NC, SC, GA) and Caribbean (USVI and Puerto Rico). The program is a means of involving commercial and recreational fishermen in the collection of fundamental fisheries information in support of management and regulatory options. This program addresses NOAA's mission goal to "Protect, Restore, and Manage the Use of Coastal and Ocean Resources through an Ecosystem Approach to Management."

FULL ANNOUNCEMENT TEXT

I. Funding Opportunity Description

A. Program Objective

CRP is a competitive Federal assistance program that funds projects seeking to increase and improve the working relationship between fisheries researchers from the NMFS, state fishery agencies, universities, and the U.S. fishing industry (recreational and commercial) in the Gulf of Mexico (FL, AL, MS, LA, TX), South Atlantic (FL, NC, SC, GA) and Caribbean (USVI and Puerto Rico). Congress has initiated the cooperative research funding to assist the NMFS in becoming more transparent by improving the confidence that both commercial industry and recreational fishermen have in the data and analyses performed in support of fisheries management.

B. Program Priorities

Proposals must address one of the priority areas listed below as they pertain to Federally managed species or species relevant to Federal fisheries management plans. The priorities are not listed in any particular order of importance. If you select more than one priority, you should list first on your application the priority that most closely reflects the objectives of your proposal. Projects should focus on the greatest probability of collecting data that aids in recovering, maintaining, or improving the status of stocks upon which fisheries depend; improving the understanding of factors affecting recruitment success and long-term sustainability of fisheries; and/or generating increased values and opportunities for fisheries.

The main premise for a CRP project is to provide usable and relevant information to aid fishery researchers, scientists, and managers to make informed management decisions. As such, priority needs are for information that can be utilized for assessments in the future. Stocks managed under the Magnuson-Stevens Act are the top priority and research that targets a stock such that the results can be completed in time to support an impending stock assessment is encouraged. Examples of, but not limited to, high priority Federally managed species are listed by Fishery Management Council as a suggested guide to assist in research species/stock selection.

Caribbean Fisheries Management Council (CFMC): yellowtail snapper, queen triggerfish, deepwater snappers, and parrotfish, in the Exclusive Economic Zone (EEZ) off Puerto Rico and the U.S. Virgin Islands.

Gulf of Mexico Fisheries Management Council (GMFMC): red snapper, hogfish, goliath grouper, gag grouper, red grouper, red drum, scamp and shrimp in the Gulf of Mexico EEZ from the west coast of Florida through Texas.

South Atlantic Fisheries Management Council (SAFMC): black seabass, red snapper, white grunt, snowy grouper, speckled hind, warsaw grouper, hogfish, red porgy, shrimp, vermilion snapper, gag and goliath grouper, in the South Atlantic EEZ from North Carolina to the east coast of Florida.

In addition, the following Highly Migratory Species (HMS) are included as Federally managed species to consider: hammerhead sharks, blue shark, shortfin mako, sandbar shark, blacktip shark, blacknose shark, in the Gulf of Mexico and South Atlantic EEZ from North Carolina to the east coast of Florida.

Projects will also be evaluated as to the likelihood of achieving the following priorities, with consideration of the magnitude of the eventual economic or social benefits that may be realized:

1. Commercial and Recreational Finfish:

There are several priorities within this general category that pertain to the collection of catch, effort, size frequency, bycatch, and detailed data on fishing area by vessels in the commercial and recreational fisheries for finfish species.

a. Projects to characterize the total catch (from all fleets affecting the stocks), including catch composition and disposition of the catch.

b. Projects focusing on the composition and disposition of bycatch and discards such as to determining the effects on discard rates of increasing size limits or reducing possession limits. Additionally, discard mortality rates currently used in assessments are generally based on small numbers of observations or are unknown. Research is needed to improve estimates of discard mortality rates and must account for the effects of fish size, gear, area, season and depth of fishing.

c. Investigations to determine more efficient methods to record catches accurately on a real time basis during fishing operations(e.g. electronic logbooks).

d. Projects to develop methods to increase the amount of at-sea observations including imaging systems and to obtain life history information; i.e. otoliths for aging, gonads for maturity/fecundity, and could include genetic material or stomach contents for trophic level work.

e. Data collection projects to improve life history information on commercial and recreational finfish and elasmobranch species. Improved information about the age-structure of the catch (both retained and discarded), based on otoliths, vertebrae, spine or other hard-part aging techniques, will provide insight on a stock's resilience to fishing. Improved information on the reproductive characteristics of the stock, including the relationship between size or age and reproductive capacity, will provide information to refine estimates of long-term biological productivity of the stock.

f. Projects focusing on the effect of rapid recompression (e.g., via descender devices) on the post-release condition, behavior and mortality of released fish, with considerations for factors such as depth and water temperature ..

g. Projects to develop a consistent sampling methodology that will permit monitoring of the relative abundance of a fishery resource over time. An initial step for such a project is to develop sampling designs and protocols for sampling fleet catches to estimate relative abundance, including standardization of fishing power of individual vessels.

h. Projects involving Marine ecosystem modeling of food webs, trophic structure, and recruitment in the Gulf of Mexico. Mechanistic models that characterize impacts of fisheries and bycatch on energy flow and allocation of biomass within food webs. Models that can be scaled geographically so as to describe place-based or subregional food webs as well as their interactions on a Gulf-wide LME scale. Are environmental factors (light, prey type and abundance, temperature, turbulence, predators) influencing feeding, growth and recruitment success of marine fish? What are the most important environmental factors? Does fish physiology or behavior interact with environmental factors to generate favorable conditions for fish recruitment?

i. Projects to document the knowledge of commercial (and recreational) fishers to identify reef fish spawning aggregation (FSA) sites and develop annual monitoring of FSAs for abundance indices and efficient biological sampling to assessing size and age

structure in the population.

j. Research is needed to determine the impacts of bag and size limits on species that are important to recreational and charter boat industries. Projects should emphasize the effects of alternatives size limits.

k. Projects are needed to improve catch and effort data for private recreational fishermen. The projects should identify sample sizes, including number of intercept interviews and dock samples, required to achieve standard statistical levels of accuracy and precision.

l. Research is needed to evaluate the effectiveness of artificial reefs. Projects should examine the value of artificial reefs to fishing communities, and estimate associated economic impacts.

m. Research is needed to develop pilot cooperative surveys in the US South Atlantic that target deepwater snapper-grouper species (e.g., snowy grouper, blueline tilefish, golden tilefish) to provide accurate and precise indices of abundance and life history information.

n. Research is needed to assess selectivity of hook and line gear for red snapper.

2. Economic Studies:

a. Proposals to determine how fishing costs change when fishermen change their fishing activities regarding how, when and where to fish, and what species to target. These changes could occur as part of a normal seasonal rotation among fisheries, or in response to changes in common management tools such as seasonal closures, area closures, industry quotas, commercial trip limits or recreational bag limits, and minimum size limits. This would reflect individual fishing trips by commercial, charter or party boats in federally managed fisheries. Additionally to look at fishing behavioral models with the intent of this research to determine how fishermen change their fishing patterns and strategies regarding how, when and where to fish, and what species to target in response to changes in common management tools such as seasonal closures, area closures, industry quotas, trip limits, and minimum size limits.

b. Projects to estimate the effect of proposed management alternatives on the benefits of recreational fishing by fishery and mode of fishing (private boats, charter boats, head boats). Evaluate the economic effects of regulations for recreational fisheries and changes in economic surpluses.

c. Develop a system of economic incentives to reduce bycatch in commercial and/or recreational for-hire fisheries. The project should compare the costs, potential gains, and levels of bycatch reduction associated with traditional bycatch reduction methods (such as gear, season or area restrictions) and any innovative alternative methods addressed by the project.

d. Research and data are needed to estimate the social and economic impacts associated with management of commercial fisheries with individual transferable quotas (ITQs). Currently, two IFQ programs are operational in the Gulf of Mexico: red snapper and grouper-tilefish. Periodic evaluations of the perceptions and attitudes of fishery stakeholders are necessary for a comprehensive analysis of the socioeconomic effects associated with IFQ management.

e. Research and data are needed to estimate the social and economic impacts that are associated with MPA closures. Currently the Caribbean has five seasonal closures in the exclusive economic zone (EEZ) for spawning aggregations of fish and one no-take zone consisting of an annual closure. The size of these areas is small compared to MPAs established on the mainland, but constitute a significant portion of the fishing grounds in the Caribbean. Although research has been conducted on the biological impacts of several no-

take zones, little, if any research, has been done to estimate the impacts of closures on fishing communities.

3. Commercial Shrimp Harvest:

a. Identifying Non-Trawlable Areas: Research is needed to investigate how habitat enhancements of non-trawlable areas could benefit shrimp fisheries. For example, artificial reefs could be established in non-trawlable areas and the impacts on shrimp and finfish populations could be evaluated. Such research should determine if enhancements would increase habitat for juvenile and adult fish, i.e. red snapper.

b. Quantification of Effort: Research is needed to improve shrimp effort data.

c. Quantification of Bycatch Rates: Statistical research is needed to ensure that extrapolation of the results of individual trawl bycatch surveys to the fleet are statistically valid. The procedures should account for the total range of conditions found in all major fishing areas. The research should estimate the number of scientific fishery observers that should be employed to collect bycatch information for prevailing conditions and areas. The project should describe the statistical accuracy and precision of estimates for each major fishing area in addition to the total fishing area. This is critical to improving stock assessments, especially in the Gulf of Mexico.

4. Caribbean Fisheries:

a. Cooperative projects between scientists and industry members are needed to enhance studies of the effectiveness of MPAs.

b. Projects to document the knowledge of commercial (and recreational) fishers to identify reef fish spawning aggregation and nursery grounds of juvenile fishes.

c. Projects to determine the impact on coral reefs from commercial and recreational fishing operations. Industry participation is needed to determine the impacts of gear on coral reefs. Information on recreational fishing activities is sparse and there are approximately 60,000 recreational vessels in the Caribbean. Research should focus on diving, recreational boating and anchoring on coral reefs.

d. Projects to improve commercial data collection capabilities.

e. Projects to improve recreational data collection capabilities.

f. Projects on the collection of biological samples from commercial and recreational fisheries.

C. Program Authority

Authority for the CRP is provided by the following: 16 U.S.C. 661.

II. Award Information

A. Funding Availability

Approximately \$2.0 million may be available in fiscal year (FY) 2014 for projects. Actual funding availability for this program is contingent upon FY 2014 Congressional appropriations. The NMFS Southeast Fisheries Science Center estimates awarding approximately eight projects that will range from \$25,000 to \$300,000. The average award is \$150,000. Publication of this notice does not obligate NMFS to award any specific grant or cooperative agreement or any of the available funds.

B. Project/Award Period

The period of awards can be for a maximum period of up to 12 months. Applicants will need to compete for additional years of funding and must include a statement identifying concrete results and accomplishments from the previous year's effort. Satisfactory

performance in the use of NOAA funding previously received is also required.

C. Type of Funding Instrument

Proposals selected for funding will be funded through a cooperative agreement. NMFS is substantially involved as a partner in the cooperative research activities with the recipient. Substantial involvement includes planning, scheduling, conducting, and analyzing proposed project activities and frequent contact with the grantee to help solve technical problems/situations as they arise during performance of the award.

III. Eligibility Information

A. Eligible Applicants

Eligible applicants may be institutions of higher education, nonprofits, commercial organizations, individuals, and state, local, and Indian tribal governments. Federal agencies or institutions are not eligible. Foreign governments, organizations under the jurisdiction of foreign governments, and international organizations are excluded for purposes of this solicitation since the objective of the CRP is to optimize research and development benefits from U.S. marine fishery resources.

B. Cost Sharing or Matching Requirement

Cost-sharing is not required for this program.

C. Other Criteria that Affect Eligibility

All applicants must include a written agreement with a person employed by the National Marine Fisheries Service (NMFS), who will act as a partner in the proposed research project. This written agreement must be signed by the SEFSC Director or Lab Director.

IV. Application and Submission Information

A. Address to Request Application Package

Application packages are available through [grants.gov](https://www.grants.gov).

B. Content and Form of Application

1. Format Requirements:

All pages must be single-spaced and should be composed in at least a 12-point font with one-inch margins on 8 1/2 x 11 paper. The project description may not exceed 25 pages, exclusive of title page, project synopsis, literature cited, budget information, resumes of investigator, and letters of support (if any). Failure to follow the requirements will result in the rejection of the application and subsequent return.

Any PDF or other attachments that are included in an electronic application must meet the above format requirement when printed out.

2. Content Requirements:

The following information must be included. Failure to submit it will result in an application not being reviewed.

a. Signed Title Page: The Application for Federal Assistance (SF-424) must be signed by the authorized representative. Electronic signatures submitted through [grants.gov](https://www.grants.gov) satisfy this requirement.

b. Project Synopsis (1-page limit): It is critical that the project synopsis accurately describes the project being proposed and conveys all essential elements of the activities. It is imperative that potential applicants tie their proposals to one of the program priorities described in Section I.B. (Funding Opportunity Description). The Project Synopsis must identify the principal investigator(s) and a brief statement of qualifications.

c. Project Description (25-page limit): The applicant should describe and justify the project being proposed and address each of the evaluation criteria as described below in Section V. (Application Review Information). Project descriptions should include clear objectives and specific approaches to achieving those objectives, including methods, timelines, and expected outcomes.

d. Data Sharing (2-page limit): Environmental data and information collected and/or created under NOAA grants/ cooperative agreements must be made visible, accessible, and independently understandable to general users, free of charge or at minimal cost, in a timely manner (typically no later than two (2) years after the data are collected or created), except where limited by law, regulation, policy or security requirements.

1. Unless otherwise noted in the federal funding announcement, a Data/Information Sharing Plan of no more than two pages shall be required as part of the Project Narrative. A typical plan should include descriptions of the types of environmental data and information created during the course of the project; the tentative date by which data will be shared; the standards to be used for data/metadata format and content; policies addressing data stewardship and preservation; procedures for providing access, sharing, and security; and prior experience in publishing such data. The Data/Information Sharing Plan will be reviewed as part of the NOAA Standard Evaluation Criteria, Item 1 - Importance and/or Relevance and Applicability of Proposed Project to the Mission Goals.

2. The Data/Information Sharing Plan (and any subsequent revisions or updates) must be made publicly available at time of award and, thereafter, will be posted with the published data.

3. Failing to share environmental data and information in accordance with the submitted Data/Information Sharing Plan may lead to disallowed costs and be considered by NOAA when making future award decisions.

e. Literature Cited: If applicable.

f. Budget and Budget Justification: There should be a detailed budget justification accompanying the SF-424 budget forms, including the dollar amount provided to the fisherman in compensation for his involvement. Indicate matching funds if provided in a separate column. Provide justifications for all budget items in sufficient detail to enable the reviewers to evaluate the appropriateness of the funding requested.

g. Resumes (2 pages maximum for each major participant).

h. Standard Application Forms: Please refer to the appropriate application package available through www.grants.gov

i. NOAA must analyze the potential environmental impacts, as required by the National Environmental Policy Act (NEPA). Consequently, as part of an applicant's package, applicants are required to answer the following questions:

1. Has any National Environmental Policy Act (NEPA) or other environmental compliance documentation (e.g., Endangered Species Act Biological Opinion; Letter of Concurrence or Biological Assessment/Evaluation; Clean Water Act permit; State Historic Preservation Officer consultation; state environmental compliance documentation (mini-NEPA); etc.) been completed? If yes, list the environmental compliance documentation that has been completed and provide copies of the documentation as appropriate.

2. Would the proposed activity or environmental impacts of the activity be subject to public controversy? If yes, describe the potential controversy.

3. Would the proposed activity have potential environmental impacts that are highly uncertain or involve unique or unknown risks? If yes, describe the impacts that are uncertain or involve unique or unknown risks.

4. Is the proposed activity related to other activities (both NOAA and non-NOAA that together may cumulatively adversely impact the environment? For example, the proposed activity is one of a series of projects that together may cause a change in the pattern of pollutant discharge, traffic generation, economic change, flood plain change, or land use. If yes, briefly describe the other activities and discuss how the related projects would have cumulative impacts on the environment.

5. Would the proposed activity involve a non-native species? If yes, describe how the non-native species is involved.

6. Would the proposed activity occur within a unique geographic area of notable recreational, ecological, scientific, cultural, historical, scenic or aesthetic importance? If yes, describe the area, including the name or designation if known.

7. Would the proposed activity affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or cause loss or destruction of significant scientific, cultural, or historical resources? If yes, describe the impact.

8. Would the proposed activity affect public health or safety? The effects may be adverse or beneficial and temporary, long-term, or permanent. If yes, describe the effects and the circumstances that would cause these impacts.

9. Would the proposed activity affect directly or indirectly, in an adverse or beneficial manner, any listed endangered, threatened, or otherwise protected species or their critical habitat under federal and state laws including the Endangered Species Act and the Marine Mammal Protection Act? If yes, name the species and/or habitat that will be impacted and describe the circumstances that would impact the species and/or habitat.

Applications must identify the principal participants, and include copies of any agreements describing the specific tasks to be performed by participants. Project applications should give a clear presentation of the proposed work, the methods for carrying out the project, its relevance to managing and enhancing the use of Gulf of Mexico and/or South Atlantic fishery resources, and cost estimates as they relate to specific aspects of the project. Budgets must include a detailed breakdown, by category of expenditures, with

appropriate justification for both the Federal and non-Federal shares.

Applications should exhibit familiarity with related work that is completed or ongoing. Proposals should state whether the research applies to the Gulf of Mexico, South Atlantic or North Atlantic for highly migratory species or multiple areas. Successful applicants are required to collect and manage data in accordance with standardized procedures and format approved or specified by NMFS and to participate with NMFS in specific cooperative activities that are determined by consultations between NMFS and successful applicants before project grants are awarded. All data collected as part of an awarded grant must be provided to the National Marine Fisheries Service.

All applicants must include a written agreement with a person employed by the National Marine Fisheries Service (NMFS), who will act as a partner in the proposed research project. The NMFS partner will assist the applicant to develop a design for the project to assure that the outcome will provide suitable, scientific data and results to support needed fisheries management information.

C. Submission Dates and Times

Applications must be received by 5:00 pm, Eastern Time on August 30, 2013 to be considered for funding. For all applications, a date and time receipt stamp must be included through grants.gov and will be the basis of determining timeliness.

D. Intergovernmental Review

Applications submitted by state and local governments are subject to the provisions of Executive Order (E.O.) 12372, Intergovernmental Review of Federal Programs. Any applicant submitting an application for funding is required to complete item 16 on SF-424 regarding clearance by the State Single Point of Contact (SPOC) established as a result of E.O. 12372. To find out about and comply with a State's process under EO 12372, the names, addresses and phone numbers of participating SPOCs are listed in the Office of Management and Budget's home page at:
<http://www.whitehouse.gov/omb/grants/spoc.html>.

E. Funding Restrictions

Indirect Costs - If the applicant does not have a negotiated indirect cost rate agreement with a Federal agency, then they may direct cost all charges, or submit a request to establish a rate. The Federal share of indirect costs awarded must not exceed 25 percent of the total direct costs identified on NOAA Form 424A Budget Information. The indirect rate is fixed at 25 percent in order to maximize the funds available for actual research and to allow applicants to recover a reasonable indirect cost.

Construction is not an allowable activity under this program. Therefore, applications will not be accepted for construction projects.

F. Other Submission Requirements

Please refer to important information in "Submission Dates and Times" above to help ensure your application is received on time.

Applicants who are not commercial or recreational fisherman must have commercial or recreational fishermen participating in their project. There must be a written agreement with

a fisherman describing the involvement in the project activity and the estimated dollar amount to be provided to that fisherman in compensation for his involvement. Failure to submit it will result in an application not being reviewed.

Applications must be submitted through www.grants.gov

V. Application Review Information

A. Evaluation Criteria

Applications responsive to this solicitation will be evaluated by three or more appropriate private and/or public sector experts to determine their technical merit. These reviewers will provide individual evaluations of the proposals. No consensus advice will be given. These reviewers provide comments and assign scores to the applications based on the following criteria, with the points shown in parentheses:

1. Importance/relevance and applicability of proposed projects to the program goals (40 points):

This criterion ascertains whether there is intrinsic value in the proposed work and/or relevance to NOAA, Federal, regional, state, or local activities. For this program, this includes: Does the proposal assist industry and address issues that are important to regional fishery management?

2. Technical/scientific merit (40 points):

This criterion assesses whether the approach is technically sound and/or innovative, if the methods are appropriate, and whether there are clear project goals and objectives. For this program, this includes: Does the proposal clearly identify and describe, in the project outline and statement of work, scientific methodologies and analytical procedures that will adequately address project goals and objectives?

3. Overall qualifications of applicants (no points):

This criterion ascertains whether the applicant possesses the necessary education, experience, training, facilities, and administrative resources to accomplish the project. This criterion is not used by the CRP program.

4. Project costs (20 points):

This criterion evaluates the budget to determine if it is realistic and commensurate with the project needs and time frame. For this program, this includes: Does the budget appropriately allocate and justify costs?

5. Outreach and education (no points):

This criterion assesses whether the project provides a focused and effective education and outreach strategy regarding NOAA's mission to protect the Nation's natural resources. This criterion is not used by the CRP program.

B. Review and Selection Process

When we receive applications we will screen them to ensure that they were received by the deadline date (see Submission Dates and Times); include SF 424 authenticated by an authorized representative; were submitted by an eligible applicant; address one of the funding priorities for federally managed species; and include a budget, statement of work, and milestones, and identify the principal investigator. We do not have to screen applications before the submission deadline in order to identify deficiencies that would cause your application to be rejected so that you would have an opportunity to correct them. However, should we do so and provide you information about deficiencies, or should you independently decide it is desirable to do so, you may correct any deficiencies in your application before the deadline. After the deadline, the application must remain as submitted. If your application does not conform to these requirements and the deadline for submission has passed, the application will be returned without further consideration.

Following the technical review, we will determine the score for each individual review and average the individual review scores to determine the final score for each application. Then, we will rank applications in descending order by their average scores. The top twenty applications will be forwarded to a panel for further review. Those applications that are not in the top twenty category will be eliminated from further consideration.

Those applications that meet the top twenty ranking will be presented to a panel of non-NOAA fishery experts known as the CRP Panel. Each member of the CRP Panel individually considers: if needs of the Agency are addressed in each proposal; if the project assists industry; and if the project addresses issues that are important to regional fisheries management. Needs of the Agency follow the information identified in the Magnuson-Stevens Act, Title III, Sections 301 and 404. The individuals on the Panel provide comments and rate each of these proposals as either "Recommended for Funding" or "Not Recommended for Funding". The Panel will give no consensus advice. The Program Manager ranks the proposals in the order of preferred funding based on the number of Panel members recommending the proposal for funding. In the event that there are two or more projects tied in the panel's percent selected category that are competing for the final available funds, all tied projects will be given equal consideration by the selecting official regardless of their peer review score.

C. Selection Factors

The CRP Panel ratings will be provided in rank order to the Selecting Official for final funding recommendations. The Selecting Official shall award in the rank order unless the proposal is justified to be selected out of rank order, or in the case of a rank order tie, based on the following factors:

1. Availability of funding;
2. Balance/distribution of funds:
 - a. geographically
 - b. by type of institutions
 - c. by type of partners
 - d. by research areas
 - e. by project types
3. Duplication of other projects funded or considered for funding by NOAA/federal

agencies;

4. Program priorities and policy factors;

5. Applicant's prior award performance

6. Partnerships with/Participation of targeted groups;

7. Adequacy of information necessary for NOAA staff to make a NEPA determination and draft necessary documentation before recommendations for funding are made to the Grants Officer.

The Selecting Official may negotiate the funding level of the proposal. The Selecting Official makes final recommendations for award to the Grants Officer who is authorized to obligate funds.

D. Anticipated Announcement and Award Dates

Subject to the availability of funds, successful applications are usually recommended for funding within 275 days from the date of publication of this notice. The earliest start date of awards (1st of a month) is approximately 395 days after the date of publication of this notice. Applicants should consider this selection and processing time in developing requested start dates for their applications. It is suggested that a September 1, 2014, start date be requested on the application.

The exact amount of funds awarded, the final scope of activities, the project duration, and specific NMFS cooperative involvement with the activities of each project are determined in pre-award negotiations between the applicant, the NOAA Grants Office and the NMFS Program Office. Recipients must not initiate projects until an approved award is received from the NOAA Grants Office.

VI. Award Administration Information

A. Award Notices

Successful applicants will receive notification that the application has been approved for funding by the NOAA Grants Office with the issuance of an award signed by a NOAA grants officer. This is the authorizing document that allows the project to begin. The award will be issued electronically to the authorizing official of the project. Unsuccessful applicants will be notified by the NMFS program office that their proposals were not selected for recommendation.

B. Administrative and National Policy Requirements

Administrative and national policy requirements for all Department of Commerce awards are contained in the Department of Commerce Pre-Award Notification Requirements for Grants and Cooperative Agreements contained in the Federal Register notice of December 17, 2012 (77 FR 74634). A copy of the notice may be obtained at <http://www.gpoaccess.gov/fr/search.html>

Limitation of Liability - Funding for potential projects in this notice is contingent upon the availability of funds. In no event will NOAA or the Department of Commerce be responsible for proposal preparation costs. Publication of this announcement does not oblige NOAA to award any specific project or to obligate any available funds.

National Environmental Policy Act (NEPA) - NOAA must analyze the potential environmental impacts, as required by the National Environmental Policy Act (NEPA), for applicant projects or proposals which are seeking NOAA federal funding opportunities. Detailed information on NOAA compliance with NEPA can be found at the following NOAA NEPA Web site at www.nepa.noaa.gov/, including our NOAA Administrative Order 216-6 for NEPA website at http://www.corporateservices.noaa.gov/ames/administrative_orders/chapter_216/216-6.html and the Council on Environmental Quality implementation regulations website at http://ceq.hss.doe.gov/nepa/regs/ceq/toc_ceq.htm

Consequently, as part of an applicant's package, and under their description of their program activities, applicants are required to provide detailed information on the activities to be conducted, locations, sites, number and species expected to be caught, species and habitat to be affected, possible construction activities, and any environmental concerns that may exist (e.g., the use and disposal of hazardous or toxic chemicals, introduction of non-indigenous species, impacts to endangered and threatened species, aquaculture projects, and impacts to coral reef systems). In addition to providing specific information that will serve as the basis for any required impact analyses, applicants may also be requested to assist NOAA in drafting of an environmental assessment, if NOAA determines an assessment is required.

Applicants will also be required to cooperate with NOAA in identifying feasible measures to reduce or avoid any identified adverse environmental impacts of their proposal. The failure to do so shall be grounds for not selecting an application. In some cases if additional information is required after an application is selected, funds can be withheld by the grants officer under a special award condition requiring the recipient to submit additional environmental compliance information sufficient to enable NOAA to make an assessment of any impacts that a project may have on the environment.

In accordance with current Federal appropriations law, NOAA will provide a successful corporate applicant a form to be completed by its authorized representatives certifying that the corporation has no Federally-assessed unpaid or delinquent tax liability or recent felony criminal convictions under any Federal law.

The Federal Funding Accountability and Transparency Act of 2006 includes a requirement for awardees of applicable Federal grants to report information about first-tier subawards and executive compensation under Federal assistance awards issued in FY 2011 or later. All awardees of applicable grants and cooperative agreements are required to report to the Federal Subaward Reporting System (FSRS) available at www.FSRS.gov on all subawards over \$25,000.

C. Reporting

Unless otherwise specified by terms of the award, performance and financial reports are to be submitted semi-annually. Performance reports should include progress on identified milestones. Electronic submission of reports is required and conducted through the use of NOAA's Grants Online system. All reports will be submitted on a semi-annual schedule and must be submitted no later than 30 days following the end of each 6-month period from the start date of the award. In addition to the financial and performance reports, grant recipients will be required to submit a comprehensive final performance report 90 days after

the project end date.

All data collected as part of the project must be submitted to the NMFS partner. Project data must be edited and verified as accurate by the applicant prior to being submitted to NMFS

VII. Agency Contacts

For questions regarding the application process, you may contact: Dax Ruiz, State/Federal Liaison Branch, (727) 824-5324, or Dax.Ruiz@noaa.gov.

VIII. Other Information

Applicants must have a Dun and Bradstreet Data Universal Numbering System (DUNS) number (www.dnb.com) and be registered in the Central Contractor Registry (CCR) (www.ccr.gov). Allow a minimum of thirty days to receive a DUNS number and to be registered in CCR. Applicants are strongly encouraged not to wait until the application deadline date to begin the application process through <http://www.grants.gov>.