FINAL REPORT

PROJECT TITLE: "Organization and Management of a Gulf of Mexico and South Atlantic Shrimp Fishery Bycatch Management Program"

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GULF & SOUTH ATLANTIC FISHERIES DEVELOPMENT FOUNDATION, INC.
COOPERATIVE AGREEMENT NO. NA17FD-0103-01
AWARD PERIOD 05/01/91 THROUGH 01/31/93 (amended)

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Gulf & South Atlantic Fisheries Development Foundation, Inc.

FINAL REPORT

Grant No. NA17FD-0103-01

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Amount of Grant: Federal $357,604 Match $-0- Total $357,604

Project Title: "Organization and Management of a Gulf of Mexico and South Atlantic Shrimp Fishery Bycatch Management Program"

Grantee: Gulf & South Atlantic Fisheries Development Foundation, Inc.

Award Period: From: 1 May 1991 To: 31 January 1993 (amended)

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Under this award, the original cooperative agreement dates were 1 May 1991 through 30 April 1992; during the course of this award three amendments were executed. Amendment #1 (1 Oct. 1991) added supplemental funds totalling $61,588 to the original budget, and revised certain specified terms and conditions pertaining to the award. Amendment #2 (1 May 1992) provided a no-cost extension of the project and budget completion date to 31 July 1992. Amendment #3 (1 August 1992) provided a no-cost extension of the project and budget completion date to 31 January 1993.

I. EXECUTIVE SUMMARY

Concerns about finfish bycatch in the shrimp trawl fishery of the southeastern U.S. prompted a 1990 amendment to the Magnuson Fishery Conservation and Management Act. This amendment ("Incidental Harvest Research Program") mandated, in Section 304(g), that the Secretary of Commerce establish a program to assess the impact on fishery resources of incidental harvest by the shrimp trawl fishery under the jurisdiction of the South Atlantic and Gulf of Mexico Fishery Management Councils. In response to this mandate, the National Marine Fisheries Service developed a document "*Shrimp Trawl Bycatch Research Requirements*" that set forth experimental and statistical designs for a bycatch research program.

Using this document as a template, the Gulf and South Atlantic Fisheries Development Foundation, Inc. assumed the lead role in developing an infra-structural Steering Committee and associated advisory panels that would provide a cooperative approach to addressing the multitude of problems associated with this issue. This Steering Committee was developed to include representatives from commercial and recreational fishing interests, NMFS,

universities, state fisheries management agencies, regional marine fisheries commissions, federal fishery management councils, and public environmental organizations. The Committee and its panels met several times over the course of the project to outline the specific requirements of the document.

This project had a three-fold purpose:

1) develop a written guideline document that addressed the priorities of a bycatch research program,

2) begin initial field research on various gears that would reduce unwanted bycatch, and

3) establish an information transfer system concerning both bycatch reduction devices and TED installation and modification as it pertained to bycatch reduction for both the Gulf of Mexico and South Atlantic shrimp fleet

This ambitious project, with complementary and concurrent funding through MARFIN funds (grant # NA17FF0233-01), led to the final production of a document "*A Research Plan Addressing Finfish Bycatch in the Gulf of Mexico and South Atlantic Shrimp Fishery*" in 1992; a Summary document of this Plan was also produced. Over 935 copies of this document have been distributed to interested parties throughout the southeast region for their information and use as the primary reference source for the implementation of research projects designed to address the shrimp-trawl by-catch issue. All research projects funded under the auspices of NOAA/NMFS (i.e. MARFIN and S-K programs) must conform to the outline of this Research Plan. The Steering Committee and its Panels {Technical Review Panel, Gear Review Panel, and Statistical Panel} continue to monitor the progress of research.

The second objective, to begin research leading towards substantial bycatch reduction, was addressed through two methods. First, an observer program aboard cooperating commercial shrimp vessels was initiated to begin data collection during normal fishing operations as to catch characterization and the efficiency of prototype bycatch reduction devices. The Foundation coordinated cooperative commercial vessels for NMFS in conjunction with the ongoing NMFS' observer program. Secondly, six sub-contracts and one sole source agreement were awarded to various institutions throughout the southeastern U.S. to carry out research on various gear designs to reduce unwanted bycatch.

From June through September 1992, observers spent 84 days aboard commercial fishing vessels in the Gulf of Mexico and South Atlantic

areas. Twenty-seven days were logged off the Texas coast, and 57 days were logged in the South Atlantic region. All data collected by Foundation-contracted observers were provided to NMFS Galveston Lab for inclusion in a more robust, pooled data base. No analyses were carried out concerning these data.

Six sub-contracts (numbered 49-01, 49-02, 49-03, 49-06, 49-07, and 49-08) were awarded from this project to provide initial evaluations of new or modified existing gears as bycatch reduction devices. Each of these sub-contractors has provided a detailed final report concerning the results of their investigations, and these reports are only summarized here.

Two projects, 49-01 and 49-02 encompassed the inclusion of a "fish-eye" Bycatch Reduction Device (BRD). These initial tests were quite variable in their results, sometimes resulting in significant shrimp loss, however certain configurations did successfully reduce bycatch, without a loss of shrimp catch.

Project 49-03 was not initiated because of six-months of logistic delays, caused in part by apparent mis-communications between the researchers and NMFS concerning the need for permits.

Project 49-06 was supported, in part, under monies from a complementary and concurrent MARFIN project (Grant # NA17FF0233-01). This project examined the by-catch reduction capabilities of two modified shrimp trawl designs. Preliminary tests produced a 30 percent reduction in bycatch with no significant shrimp loss.

Projects 49-07 and 49-08 tested BRD designs associated with beam trawls. The beam trawl is an efficient capture mechanism for shrimp, although it does not have wide usage in the southeastern shrimp fishery. However some of the modified designs produced about 50% reductions in bycatch.

Canaveral Sole Source: The Foundation received sole source approval to utilize the R/V Georgia Bulldog to evaluate potential BRDs in the Cape Canaveral area.

The third objective, information transfer, was conducted through a series of both formal and informal meetings among Sea Grant personnel, regional trade associations, and commercial fishermen. This effort was two-fold: to impart knowledge of the bycatch reduction research program, and to aid fishermen in complying with new and additional TED regulations for inshore waters throughout the southeast region. Benefits from these activities were both qualitative and quantitative. Commercial fishermen were provided with qualitative benefits in that they were better able to understand the needs, objectives, and purpose of the Bycatch Research Program, and the need to comply with TED regulations. Through these interactions, several fishermen were convinced to

participate in the Bycatch Research Program, thus quantitatively increasing the number and diversity of vessels available for observer coverage.

II & III. INTRODUCTION and PURPOSE

Identification of Problem: Among U.S. fisheries, the shrimp fishery traditionally ranks first or second in value and in the top ten in volume, with the majority of production coming from the southeast (South Atlantic and Gulf of Mexico) coastal states (Fish. Stat. 1988-1991). In 1991, the southeast region landed 265.5 million pounds of shrimp valued at $478.3 million, accounting for >80% of landings and >90% of value of the entire U.S. shrimp industry. In the southeastern U.S., the shrimp fishery provides substantial direct (harvesting, processing, distribution, retail) and indirect (boat building and maintenance, fishing gear/fuel/etc. suppliers) economic opportunities, and the influence of this fishery is felt throughout the U.S. because of wide-spread demand for this delicacy.

Over time, the fishery has developed several economically efficient capture gears; however the gear with the widest applicability, the otter trawl, is also a very non-selective gear with a large incidental harvest (by-catch). The magnitude of this by-catch is well-documented (i.e. Bullis and Carpenter 1968; Chittenden and McEachran 1975; Pavella 1977), and although a portion of the by-catch is marketable, much is not, and therefore it is discarded. Attempts to better utilize this resource (i.e. Beaumariage 1968; Guthertz et al. 1975) have only been partially successful because of a lack of economic incentive.

Concerns over the magnitude and species composition of by-catch and discards stems from various factors. First, there is a growing public realization that ocean resources are finite and must be utilized efficiently. Secondly, stocks of several commercially and recreationally important species are thought to be overexploited, and management strategies that include catch restrictions have increased allocation conflicts among proliferating user groups. Reports such as Nichols et al. 1987, which suggest that shrimping activities have impacted recruitment capabilities of these stocks, have led to the consideration of additional management strategies that require catch reductions in such non-directed fishery efforts. Finally, increased urbanization of the southeastern region (leading to environmental degradation and a yet unquantified effect on fish stocks) has also produced an increased awareness, and in some cases mis-perceptions, of a wide variety of man's activities, including intensive fishing activities in coastal waters.

These concerns about finfish bycatch prompted a 1990 amendment to the Magnuson Fishery Conservation and Management Act. This

amendment ("Incidental Harvest Research Program") mandated, in Section 304(g), that the Secretary of Commerce establish a program to assess the impact on fishery resources of incidental harvest by the shrimp trawl fishery under the jurisdiction of the South Atlantic and Gulf of Mexico Fishery Management Councils.

Goals and Objectives: The overall goal of this project was to develop an acceptable research strategy to alleviate by-catch problems in the shrimp fishery, and thus provide alternative management strategies for fishery resources in the Gulf of Mexico. Specific objectives were divided into three major categories:

A) **Bycatch Research Plan Development**

- the development of an integrated plan to provide the gear development, testing, and data collection necessary to provide viable solutions to current by-catch problems;
- the identification of by-catch management strategies for the shrimp trawl fishery;
- the specification of data requirements for by-catch management in the shrimp trawl fishery, with consensus among the state and federal fishery management agencies;
- recommendations based on agreed upon responsibilities for funding, data collection, and management through an industry-supported system, incorporating the state management agencies, Sea Grant, and NMFS; and
- a proposed schedule and protocol for implementation.

B) **Initiation of Research on Bycatch Reduction Devices**

- contract and train observers to begin characterizing the normal catch of the fishery, and to examine the efficiency of proposed BRD designs; and
- carry out initial proof-of-concept testing for several BRD designs through sub-contracts with researchers at various institutions throughout the Southeast.

C) **Information Transfer**

- develop a series of workshops and informal demonstration projects that outline the Bycatch Program and the needs and benefits of the cooperative nature of the program.

Project A: Development of Bycatch Research Plan

IV. APPROACH

Work Performed: Initially, representatives from the Foundation and NMFS outlined the development of a multi-organizational Bycatch Steering Committee composed of representatives of the commercial and recreational fishing sectors, NMFS, universities, state fisheries management agencies, regional marine fisheries commissions, federal fishery management councils, and public environmental organizations that would oversee and develop a Bycatch Research Plan for implementation.

Over the course of the next 15 months the Steering Committee met three times to consider options in the development of the Bycatch Research Plan. Following the third meeting, a draft of the Research Plan document was distributed for final comment from a variety of sources. Following incorporation of comments, a final copy of the Research Plan was available for distribution in October 1992. The Steering Committee met a fourth time to outline its future role in monitoring progress of the Bycatch Research Program.

During the course of its deliberations, the Steering Committee received input from a Technical Review Panel and a Statistical Panel. The Technical Review Panel met three times over the course of the project period, and the Statistical Panel twice, to outline the experimental and sampling design necessary for the research program.

Another Panel (Gear Review), which is now playing an important role in the evaluation of various bycatch reduction devices, was an outgrowth of the Technical Review Panel. The GRP is composed of gear specialists from industry, NMFS, and Sea Grant. This panel provides recommendations as to the efficiency and promise of experimental BRD's. Without a recommendation from the GRP, the Foundation and NMFS does not pursue additional testing of a specified design.

Project Management: Throughout the course of this project, all aspects of coordination and management have been directed by the Foundation and its staff personnel. The interactive meetings and communications among 30+ people representing a wide variety of organizations required a central administrative organization to specifically address the logistical problems of coordination.

V: FINDINGS

This project had the primary goal of producing a reference document - "*A Research Plan Addressing Finfish Bycatch in the Gulf of Mexico and South Atlantic Shrimp Fishery*" that will continue to be used to

guide the implementation of actual research projects addressing the bycatch problem. That document, along with the Summary document, is included with this report as (Attachment A).

VI. EVALUATION

A. Project Goals and Objectives: The specific details of the goals and objectives are outlined in Section II & III above. In general the objectives were to design an integrated research plan that addressed the various aspects associated with the problems of shrimp trawl bycatch.

These objectives were attained through the development, general approval, and implementation of the Bycatch Plan document attached.

B. Specific Accomplishments: This project accomplished its original goals and objectives in the development of a Bycatch Research Plan. Through the efforts of a multi-organizational Steering Committee representing numerous interest and user groups, a consensus document outlining specific objectives and tasks to alleviate shrimp trawl bycatch was completed. Using this document as a guide, the Foundation, NMFS and other research organizations are now pursuing specific high-priority research needs identified in the Plan.

This project was especially beneficial in that it has indicated a willingness for cooperation among user and interest groups often thought to be at odds with each other over resource allocations. Through the continued cooperative participation of these various entities a solution to this high-profile and high-priority problem will be achieved.

C & D. Benefit to Industry: During this project, two documents were generated: a Bycatch Research Plan Summary which provided a general overview of the goals and objectives of the Plan, and the actual Plan document itself. Over 627 copies of the Summary were distributed to interested parties both within and outside of industry at various meetings or through mailings. Additionally, over 935 copies of the entire Plan have similarly been distributed.

By having these documents available, industry representatives have the opportunity to ascertain the value of the successful completion of the Research Program. The document emphasizes that this is a truly cooperative effort among industry, recreational interests, government regulatory agencies, and conservation groups. Successful completion of the Research Program will benefit industry through better management of finite marine resources.

By gaining an understanding of the goals and objectives of the Research Program, industry becomes better informed, and more

interested in participating in the actual research that will lead to bycatch reductions. Current interest in participating in the Research Program is increasing. Fishermen and vessel owners are increasingly allowing observers on-board their vessels. This is indicative of the cooperative efforts being put forth by industry, and the interest that the Research Plan and Research Program have generated. Concurrent projects, funded by other NOAA/NMFS grants to the Foundation, are supporting industry-developed ideas for bycatch reduction devices, and observer coverage throughout the southeast region.

The development of the Bycatch Research Plan document is only the first step in addressing a 4-yr planned Research Program to address the bycatch issue; thus there are no immediate economic benefits to the results of this particular project. However, there are long-term benefits to not only the shrimp industry, but to other finfish fisheries as well.

Successful completion of the tasks and objectives identified in the Plan to reduce unwanted bycatch will provide for a more efficient shrimp fishery through reduced effort during harvesting, and improved product quality because of less damage during harvesting from large quantities of unwanted bycatch.

Successful completion of the Bycatch Research Program will also ameliorate problems in other fisheries that may be affected from increased stock mortality stemming from shrimp trawl bycatch. Increased release of these unwanted bycatch fishes from shrimp nets will increase their chance of survival and eventual recruitment to fisheries which target them.

Project B: Initiation of Research on Bycatch Reduction

IV. Approach:

Work Performed: This task was composed of two parts: 1) to begin an observer program aboard cooperating commercial vessels to document the catch and bycatch of the fishery, and to initially evaluate the effectiveness of prototype BRD designs, and 2) to support field-test evaluations of additional gear designs through sub-contracts with several research institutions throughout the Southeast.

Project Management: For the observer program, all administrative and managerial tasks were assumed by the Foundation. Local coordination of observers and final arrangements with cooperating vessels was provided by Sea Grant personnel in Texas and Georgia.

For the sub-contracted projects, each institution was responsible for day-to-day management of project operations, with each project

having an identified Principal Investigator. Overall coordination and administrative management of the collective group of projects was assumed by the Foundation and its personnel. Sub-contracts were negotiated between the Foundation and:

Project 49-01: Mr. Billy Burbank (PI) in cooperation with University of Georgia

Project 49-02: Dr. James Murray (PI), UNC Sea Grant College Program

Project 49-03: Mr. David Cook (PI) in cooperation with University of Georgia

Project 49-06: Mr. David Burrage (PI), MS St. Univ. Extension Service

Project 49-07: Mr. Jay Huner (PI), Univ. Southwestern Louisiana

Project 49-08: Mr. Carl Hagenkotter (PI) in cooperation with Univ. of Florida Sea Grant College Program

Canaveral Sole Source: Mr. David Harrington (PI), University of Georgia Marine Extension Program

V: FINDINGS

With the finalization of the Research Plan, research testing was initiated. From June through September 1992, observers spent 84 days aboard commercial fishing vessels in the Gulf of Mexico and South Atlantic areas. Twenty-seven days were logged off the Texas coast; 22 days were used for characterization studies of the catch and 5 days were spent doing analysis of various bycatch reduction devices. In the South Atlantic region, a total of 57 days were logged, 47 of which were for bycatch reduction device evaluations. Data collected during this initial survey were complementary to additional data being collected by other NMFS-hired observers throughout the region. All data collected by Foundation-contracted observers were provided to NMFS Galveston Lab for inclusion in a more robust, pooled data base.

Six sub-contracts (numbered 49-01, 49-02, 49-03, 49-06, 49-07, and 49-08) and one sole source agreement were awarded from this project to provide initial evaluations of new or modified existing gears as bycatch reduction devices. Each of these sub-contractors has provided a detailed final report concerning the results of their investigations (Attachments B-G), and these reports are only summarized here.

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Project 49-01 encompassed a modification of a Morrison TED and the inclusion of a "fish-eye" Bycatch Reduction Device (BRD) as developed by a commercial net-maker. Some configurations resulted in significant shrimp loss, however one configuration did produce a modicum of bycatch reduction with an increase in shrimp catch. Data generated by these two studies were used by the Gear Review Panel to advance this BRD design to the "Operational Testing" stage: widespread regional use during normal fishing activities of cooperating commercial vessels.

Project 49-02, to the University of North Carolina Sea Grant Program, evaluated the use of "fish-eye" BRD's in skimmer trawls used extensively in the North Carolina inshore shrimp fishery. Results were highly variable, ranging from significant shrimp loss and increased bycatch, to substantial reductions in bycatch with no shrimp loss.

Initiation of project 49-03 was delayed approximately six months due to apparent mis-communications between the researchers and NMFS concerning the need for permits; therefore the project was never initiated.

Project 49-06 was the only project carried out in the Gulf of Mexico region, and was supported, in part, under monies from a complementary and concurrent MARFIN project (Grant # NA17FF0233-01). This project, through Mississippi State University Coastal Research and Extension Service examined the by-catch reduction capabilities of two modified shrimp trawl designs. Comparison tows against standard nets produced approximately a 30 percent reduction in bycatch with no significant shrimp loss.

Projects 49-07 and 49-08 tested BRD designs associated with beam trawls. The beam trawl is an efficient capture mechanism for shrimp, although it does not have wide usage in the southeastern shrimp fishery. However some of the modified designs produced about 50% reductions in bycatch.

On December 9-12, 1992, through a sole source contract with the University of Georgia, the R/V Georgia Bulldog conducted BRD evaluations in the Cape Canaveral area. The Bulldog was quad-rigged with four 45 foot Mongoose trawls, each equipped with zippers and super Shooter type TEDs. Three of the trawls had test BRD/TED devices and the fourth was used as a control. The treatment gear consisted of (1) four 8"-bar snake-eyes over the funnel; (2) expanded mesh (8-inch stretched) hung on the square over the top third of the funnel; and (3) a fish-eye in the top center of the bag. Use of zippers allowed the Bulldog to switch treatments between nets every fifth tow. The results from this trip showed a substantial decrease of finfish for the fish-eye and multiple snake-eye. They reduced finfish over the control net with a Super Shooter TED 68 and 32 percent by weight respectively.

However, the expanded mesh only reduced finfish by 15 percent by weight over the control net with the super shooter TED. Shrimp loss was not significant with any BRD.

A second phase of this work was carried out January 26-30, 1993. During this trip the R/V Georgia Bulldog conducted experiments on three different BRD devices. This testing was conducted 3-6 miles offshore from Cape Canaveral, Florida. We felt this location had sufficient finfish to conduct proper BRD comparisons. During this cruise, the boat was quad-rigged with four 45 mongoose trawls, each equipped with Super Shooter TEDs and net zippers. As noted previously, the zippers made it easy for changing of the three different treatments in the control TED between nets. The three treatment BRD's tested this cruise were: 1) four 8-bar snake-eyes over the funnel of the Super Shooter TED with a flexible hoop 45 meshes into the bag; 2) a device designed by Georgia fisherman Jack d'Antignac. This was made from a Super Shooter TED without the accelerator funnel and a semi-funnel placed aft of the grid. A metal framed escape port was sewn on top; and 3) a fish-eye in the top center of a 150 mesh bag, 1/3 the distance behind the TED/bag juncture. The three different BRDs and the control net's TED and bag were switched (using the zippers) between the four different nets after 5 tows.

The results from the cruise showed very good finfish reduction with the fish-eye and 150 mesh bag. Total finfish catch for this BRD was 1,039 pounds, compared to 2,506 pounds in the control, representing a 59% reduction. The predominant species were Atlantic spot (Leiostomus xanthurus), Atlantic croaker (Micropogon undulates), and Southern kingfish (Menticirrhus americanus). The biomass reduction was 42%. Please note that shrimp catches were very low during the cruise.

The snake-eye showed a 20% reduction for finfish over the control net. Total biomass reduction was only 13 percent.

The device designed by Mr. Jack d'antignac did not work very well. In fact, it has greater catches of finfish, the mix category, and biomass, than the control net.

Detailed preliminary data as a result of these two cruises is attached for your information and review.

VI: EVALUATION

A-D: Goals, Objectives, Accomplishments, Benefits

The overall goals and objectives were detailed in Sections II and III, and the specific goals and objectives of each project are outlined in the attached final reports of the sub-contractors

(Attachment B-G). In general, goals were to begin evaluation of gears that would reduce unwanted bycatch from the shrimp trawl fishing effort throughout the southeast.

The Research Plan, developed as part of this study, outlines a four year program to address this issue and results generated during this initial phase can only be considered preliminary. However, each specific project carried out under this contract provided initial information on the efficiency of various gears to reduce bycatch. These data were used by the Gear Review Panel to evaluate the initial potential of each of these devices, and to make the decision as to whether the data warranted additional testing under subsequent funding contracts to the Foundation.

Immediate benefits of these activities are varied. In the case of Project 49-02, data generated were used to support subsequent state legislation requiring the use of some type of BRD in all shrimp nets towed in state territorial waters. The projects that involved testing of "fish-eyes" supported final recommendation by the Gear Review Panel to advance this design to "Operational Testing" where it is now being widely distributed within the fishing industry for their use and subsequent comment.

In other cases, the prototype gears were found to have varying degrees of potential for further research. For those gears that were deemed potentially viable, research continues on their efficiency and applicability to the fishery. The final decisions concerning each of these gear types will require a longer time period for study, and cannot be definitively quantified from these initial tests.

Probably one of the more important benefits of these projects is the direct participation and contribution of numerous fishermen in developing an acceptable series of gears that will alleviate the bycatch problem in the shrimp fishery. This non-quantifiable benefit is still important in that the fishing industry is given the opportunity to take an active involvement in the research that may lead to fisheries management strategies that will have a direct impact on their livelihoods.

Project C: Information Transfer

The third objective, information transfer, was conducted through a series of both formal and informal meetings among Sea Grant personnel, local trade associations, and commercial fishermen. This effort was two-fold: to impart knowledge of the bycatch reduction research program, and to aid fishermen in complying with new and additional TED regulations for inshore waters throughout the southeast region.

Gary Graham of the Texas A&M Sea Grant Program, Jane Black of the Organization of Louisiana Fishermen, Dave Harrington of the Georgia Sea Grant Program, in coordination with the Foundation's Executive Director and Project Director, conducted several informal workshops/meetings to transfer information with regard to the bycatch reduction research program, as well as assist with compliance with new and additional TED regulations.

Throughout the performance on this project, Hollis Forrester, a well-known gear expert from Texas, gave several demonstrations on various TED designs. As a result of the information gathered at these workshops/meetings, a TED Trouble Shooting Brochure was drafted for use by all interested parties. Due to the necessity of review of this "draft" brochure by the appropriate individuals, this information has not been finalized. However, a "draft" of this is attached for your review and information (Attachment H). Please note that appropriate credits will be included when this brochure is finalized. Texas A&M will underwrite costs to finalize this brochure.

Jane Black, Executive Director of the Organization of Louisiana Fishermen, targeted information transfer about TEDs and BRDs among the Louisiana industry members by identifying impacted groups, reviewing completed and current research projects, reviewing scientific, social, technological and economic data outlining industry, private, university and extension roles, as well as outlining NOAA's, NMFS', Gulf of Mexico Fishery Management Council's, and Foundation's roles including TED technology transfer of the bycatch characterization observer program, analyzing the possible management options presented during the duration of the project and discussing cultural and language variations with the industry.

One of the highlights of work by Ms. Black included a Bycatch Forum '93 held at the University of Southwestern Louisiana in Lafayette, Louisiana on January 30, 1993. Presentations at this Forum were given by the NMFS Southeast Regional Director, Dr. Andy Kemmerer; William "Corky" Perret, Assistant Secretary for the Office of Fisheries of the Louisiana Department of Wildlife and Fisheries; Eddie McCulla, Foundation Louisiana Trustee, who gave an update on the Foundation's overall bycatch program; as well as several other individuals who have an interest in the bycatch program. This was well attended by the commercial fishing industry. Information relating to this Forum is attached for your information and review (Attachment I).

Also during performance under this project, Foundation staff gave several updates/presentations on the overall bycatch program at meetings of industry trade associations, management councils, marine fisheries commissions, as well as distribution of periodic updates on the overall program.

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Information transfer activities will continue under the Foundation's Cooperative Agreement No. NA37FD-0032-01. Additional performance under this project included evaluation of the Morrison TED versus the Georgia TED aboard the F/V Amazing Grace out of Midway, Georgia. Testing of the Andrews 3-panel TED on the red snapper grounds was scheduled to be carried out in August, 1992 under this award, however, due to permitting problems, this was not possible.

The Foundation purchased 125 "fish-eyes", a potential BRD, for voluntary testing by South Carolina and Georgia fishermen. Industry testing these devices indicated that they did have finfish bycatch reduction in the "fish-eye" installed net, however, shrimp loss was experienced. Industry did however acknowledge their willingness to continue testing this device. A distribution list is contained in the Foundation's project files. "Fish-eye" installation instructions (Attachment J) and videos were disseminated to fishermen participating in evaluation of these potential BRDs.

It is anticipated that testing of these devices will continue under the Foundation's current S/K award (NA37FD-0032-01). Additional detailed information in conjunction with performance on this project is contained in the Foundation's project file.

Benefits from these activities were both qualitative and quantitative. Commercial fishermen were provided with qualitative benefits in that they were better able to understand the needs, objectives, and purpose of the Bycatch Research Program, and the need to comply with TED regulations. Through these interactions, several fishermen were convinced to participate in the Bycatch Research Program, thus quantitatively increasing the number and diversity of vessels available for observer coverage.