Endangered Species
Turtles
1501-02

Southeast Fisheries Center

Program for Endangered Species in FY-1987

January 13, 1987

Overview - The pending implementation of regulations requiring the use of Turtle Excluder Devices (TEDs) over wide areas of the Gulf of Mexico and off of southeastern states requires major changes in the endangered species program in the southeast. The activities outlined here involve a reduction in the historical program of biological studies, particularly in the Cape Canaveral area on loggerhead turtles, and continuation of other historical activities at a maintenance level. The program emphasizes the collection of data necessary for the evaluation of the impact of pending regulations on both the U.S. shrimping industry and on populations of sea turtles in the southeast. It emphasizes the complete analysis of existing data, the selection of eight key "index" areas for the collection of detailed, standardized strandings information and detailed information on effort and catch, and on TED usage. It provides for certification of new TEDs developed for the industry and addresses the transfer of TED technology to that industry.

The full program costs are estimated to be 1.633 million dollars, with 740 thousand dollars being provided from SEFC base funds. Approximately 695 thousand dollars are requested from MARFIN, with 50 thousand going to NMFS and the other 645 thousand going primarily to Sea Grant and/or industry for technology transfer. A summary of the components of the SEFC endangered species program follows.

Biology and Tagging - Limited efforts will be continued in the eastern and northern Gulf to collect biological information on the distribution, abundance, and biology of Kemp's ridley and green sea turtles. Field work to obtain mark-recapture data from dead and alive turtles will continue in the Gulf and along the southeastern U.S. coast, as will studies to determine tag longevity. A qualitative and quantitative investigation of the causes and potential impact of other sources of man-induced and natural mortality will be initiated. Oil platform removal operations will continue to be monitored to document impacts on endangered species in the Gulf of Mexico.

A cooperative program is underway between the U.S. Fish and Wildlife Service and the NMFS at Rancho Nuevo, Mexico, to conduct biological studies and tag Kemp's ridley turtles in that area with radio and satellite tags. The purpose is to document short-term and long-term movement of Kemp's ridley females from the nesting beaches and adult Kemp's ridley males from that area to determine when and if the animals become susceptible to U.S. or Mexican shrimp fishing activities. A minimal amount of funding required for this program is being provided by NMFS for engineering and turtle tagging services with the bulk of the money (exceeding $100,000) being provided by the U.S. Fish and Wildlife Service.

Assessment - Analysis of marine turtle sighting data collected on NMFS/SEFC supported aerial surveys in the Gulf of Mexico from 1983 to 1985 will be completed by Dec., 1987. These analyses will provide abundance estimates and define the distributions of marine turtles (loggerhead, leatherback, and Kemp's ridley) from the coastline out 5 km beyond the 100 meter contour.

Stranding network data base management activities, analyses and interpretation of results will be continued utilizing the existing network comprised primarily of state and university volunteers.

Since 1970, mark-recapture data from marine turtles has been archived by the SEFC. An analysis of these data to evaluate the mortality rates of turtles is necessary for inclusion in the ongoing SEFC stock assessment activities and analyses. These assessment analyses provide updated status of stock information necessary to complete the five year status review mandated under the Endangered Species Act.

Bay and estuarine studies around the Gulf of Mexico will be expanded and standardized to provide information on the inshore distribution of sea turtles and to establish baseline data for later evaluation of the impact of TED regulation in inside waters when those regulations are implemented in succeeding years.

To monitor the status of marine turtle populations before, during and after the initiation of TED regulations, a phased series of intensive aerial surveys throughout the southeast will be initiated in 1988, commencing in the Canaveral Ship Channel and adjacent waters.

Evaluation of Regulations - Evaluation of the impact of TED regulations involves three phases: 1) the development of suitable standardized data bases to determine changes in catch/stranding rates of sea turtles as regulations are implemented, 2) development of detailed information on TED usage and shrimping effort, and 3) an evaluation of the impacts of the

regulations on the shrimp fishery and on sea turtle populations. A detailed data collection and evaluation program for all shrimping activities in the southeast is unrealistic because of the magnitude of the fishery and prohibitive costs involved. The NMFS evaluation will be carried out by selecting index areas around the Gulf and South Atlantic and conducting intensive studies and evaluations for those areas, and then applying these findings to the total industry.

A program will be implemented to collect standardized stranding information to provide a data base for total mortalities before TED regulations are in effect. Eight statistical zones, four in the Gulf of Mexico (4, 5, 17, 19) and four on the Atlantic coast (28, 29, 31, 32) will be sampled weekly to provide for monthly total mortality estimates (Figures 1 and 2). The sampling design will be continued through the three year phase-in period to allow annual comparisons of numbers.

The current collection of catch and effort data for the shrimp fishery will be expanded in these same 8 statistical zones. Four port agents (new hires) will be assigned to cover zones 17 and 19; 4 and 5; 28 and 29; 31 and 32. Sampling (interviews) will be conducted weekly and information on tow times, location, catch, if TED was used etc. will be collected. Interview data and standardized stranding data will be used to evaluate the impact of the TED regulations on turtle mortality and turtle population dynamics. A separate evaluation will be conducted on the impact of the TED regulations on the dynamics and economics of the shrimping industry.

TED Technology Transfer - The National Marine Fisheries Service will maintain a core capability of expertise on the design and construction of the NMFS TED and training in the rigging and use of the NMFS TED. At present, that expertise will be limited to the TED developed by the National Marine Fisheries Service, although the expertise could be expanded, at additional costs, to include design and training for other turtle excluder devices developed by other individuals or organizations. NMFS recommends that the actual technology transfer activities be carried out by organizations other than NMFS with expertise in development and handling of fishing gear. The function of the NMFS technology transfer unit would be to train individuals who would, in turn, provide a consulting and training service for the shrimping industry. Two approaches seem feasible. (See Attachment 1).

1) A training function for industry could be run by Sea Grant with individuals hired in each state to provide consulting and training services to the industry on all TEDs that have been certified to date. Initially, at least three individuals would be hired in the states of Texas and Louisiana, with two individuals being hired in Florida and one individual being hired in each of the other states. The program would be managed through the Sea Grant Extension Program for each of the states and would include the development of training aids such as video films, periodic newsletter to the industry updating TED information, and hands-on participation aboard shrimp vessels as necessary to insure proper rigging and towing of the TEDs.

2) Industry centers could be established in each of the states employing shrimpers with gear expertise, and trained by NMFS in the construction and use of TEDs. They would be paid according to time actually spent consulting and/or providing at-sea expertise. This program would be extremely costly under either approach, due to the large number of vessels in the shrimp industry and the corresponding level of effort that would be necessary for a phased technology transfer over the next three years.

Certification of New TEDs - The National Marine Fisheries Service will maintain the capability to certify new TEDs that are developed for use by the shrimping industry. Annual certification testing will be conducted in the Canaveral Channel during February-March. The National Marine Fisheries Service will provide testing vessel, nets and gear, and personnel to collect data to certify the exclusion capability of each turtle excluder device that has been developed during the previous year by industry, Sea Grant, or other sources. While the certification will address turtle exclusion only, information will also be gathered on the shrimp retention and finfish separation of each device.

Kemp's Ridley Head Starting - The head starting program is entering its ninth year with results (return of nesting females) expected within the next one to two years. Funding is continued at a minimal level to maintain facilities and to continue both the head start and super head starting programs until the success of the activities can be determined.

Second Western Atlantic Turtle Symposium (WATS II) - The Second Western Atlantic Turtle Symposium is in its third year of planning and development and will be held in Mayaguez, Puerto Rico in October 1987. The Symposium is sponsored chiefly by the United States and involves in excess of 30 Caribbean and South American nations. Some funding is required to continue U.S. commitments to this Symposium for information development, support for the Symposium itself, and publication of Symposium results.

Program Management - Program management provides for the coordination of Southeast Fisheries Center Endangered Species activities throughout the Caribbean, Gulf of Mexico and South Atlantic. This includes periodic reports on the status of the NMFS program in turtles and coordination of evaluation efforts on the impact of TED regulations on the shrimping industry and on populations of endangered species.

Endangered Species Program Needs, FY-1987

Activity	NEEDS $ K	SUGGESTED SOURCE: NMFS Base $ K	MARFIN (NMFS) $ K	MARFIN (Other) $ K	Unfunded Needs
Biology					
Ridley & Green Tagging & Biology	50	50	0	0	0
Ridley Movement and Migration (FWS)	30	30	0	0	0
Sources of Mortality	30	30	0	0	0
	110	110	0	0	0
Assessment of Populations					
Aerial Survey Analysis	145	145	0	0	0
Stranding Network	20	20	0	0	0
Tagging Data Evaluation	20	20	0	0	0
Inshore Data Collection	50	50	0	0	0
	235	235	0	0	0
Evaluation of Regulations (Zones 17, 19, 4, 5, 28, 29, 31, 32)					
Standardized Stranding Surveys	160	0	0	80	80
Port Interviews (Catch/Effort)	100	100	0	0	0
Impact on Turtle Populations	50	0	50	0	0
Impact on Shrimp Fishery	50	0	0	0	50
	360	100	50	80	130
TED Technology Transfer					
Maintain NMFS Expertise	67	67	0	0	0
Sea Grant Training Fishing Industry Centers	535	0	0	535	0
	632	67	0	535	0
TED Certification					
Annual by NMFS	77	77	0	0	0
Head Start					
Continue Current Effort	47	47	0	0	0
WATS II					
Completion of Symposium	138	70	0	0	68
Program Management	~~34~~ 194	~~34~~ 164	30	0	0
Totals	~~1,633~~ 1,793	~~740~~ 870	~~50~~ 80	645	198

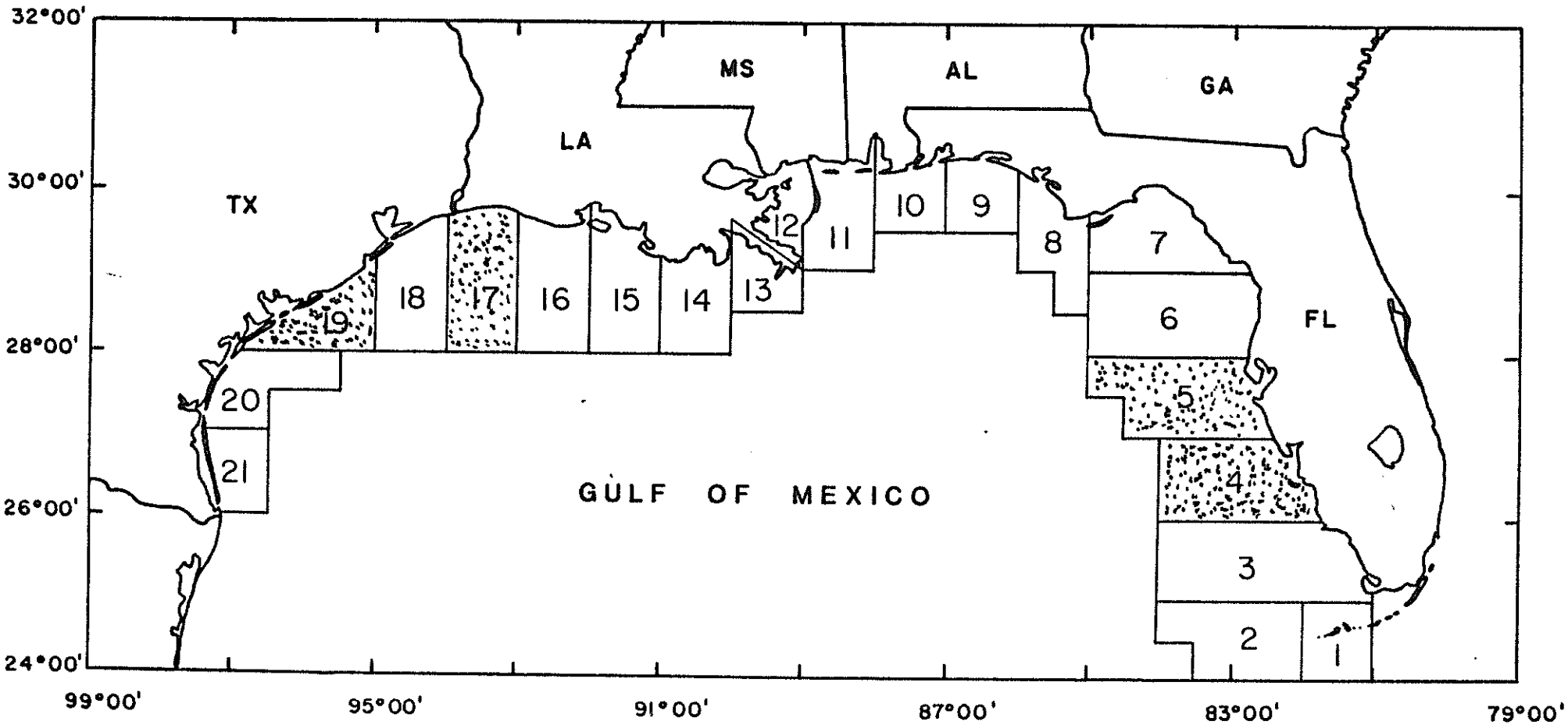

Figure 1. Gulf of Mexico statistical zones selected for evaluation of the impact of TED implementation.

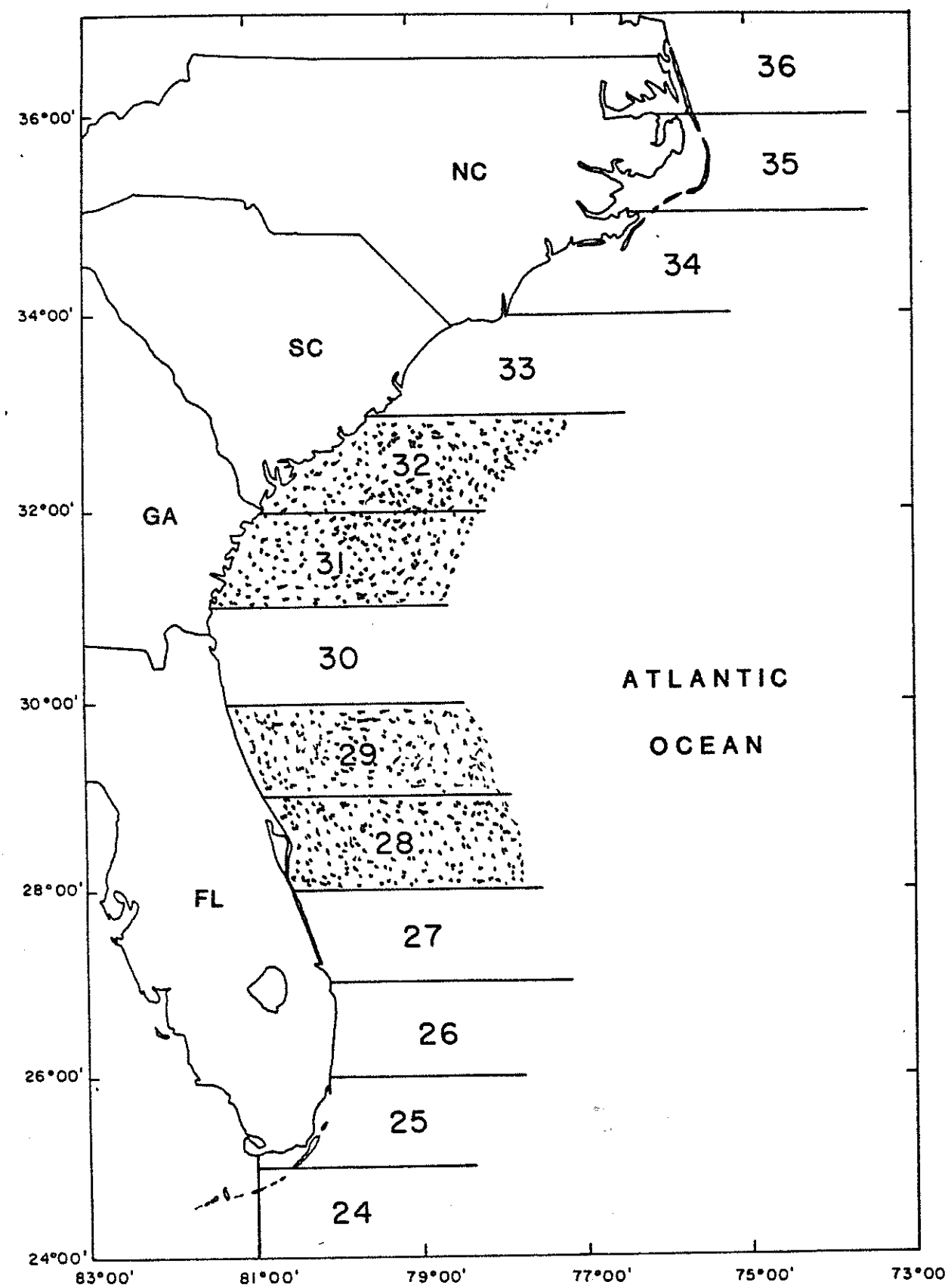

Figure 2. South Atlantic state statistical zones selected for evaluation of the impact of TED implementation.