# MARINE RECREATIONAL FISHERIES DATA COLLECTION PROJECT SUMMARIES 

## Recreational Fisheries Information Network in the Southeastern United States RecFIN(SE)

by: RecFIN(SE) Committee

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## INTRODUCTION

The Recreational Fisheries Information Network in the Southeast Region [RecFIN(SE)] is a cooperative state-federal marine recreational fisheries (MRF) data collection program. It is intended to coordinate present and future MRF data collection and data management activities through cooperative planning, innovative uses of statistical theory and design, and consolidation of appropriate data into a useful data base system.

This document provides a detailed summary of current and historic state and federal fisherydependent data collection programs for marine recreational species in the Southeast Region. Representatives of agencies involved in the RecFIN(SE) provided the information compiled in this document. The document is intended to inform readers about MRF data collection programs in the Southeast Region.

The RecFIN(SE) Committee extends their appreciation to Carole Goodyear of NMFS-SEFSC Miami for compiling all the information collected from the state and federal agencies involved for this document.

## U.S. FISH AND WILDLIFE SERVICE

Project Title: National Survey of Fishing, Hunting and Wildlife-Associated Recreation<br>Responsible Agency and Key Contact:<br>U.S. Fish and Wildlife Service, Federal Aid Division, Washington, D.C.; Sylvia Cabrera (Project Leader)

Purpose and Brief Description: To estimate the number of anglers, hunters, and nonconsumptive recreation participants in the U.S. and the 50 states, as well as how often they participate and how much money they spend on these activities. Nonconsumptive recreationists are those who enjoy photographing, observing, and feeding wildlife.

## Geographic Scope: National and state

Date Initiated: 1955
Collection Frequency: 5-year intervals (except between 1985 and 1991 surveys, because additional time was needed to revise survey design). 1991 survey data collection was completed in March 1992.

Status: Ongoing

Types of Data Collected/Stored: Numerical data include the number of participants in different types of hunting, fishing, and wildlife-associated recreation activities; days of participation and trips; species hunted and fished; types of expenditures; and selected socioeconomic characteristics of participants.

Description of Data Collection Methodology: The 1991 survey was conducted in two phases. In the first phase a sample of 128,000 households nationwide was screened, mostly by telephone, to determine who in the household had participated in wildlife activities. The second phase of the survey consisted of detailed in-person interviews conducted with subsamples of anglers, hunters, and nonconsumptive participants who were identified in the screening phase. Sample sizes were designed to provide statistically reliable results at the state level for the surveyed activities. A total of 40,000 anglers and hunters and 28,000 nonconsumptive users were in the detailed sample.

Some changes were made in the 1991 survey design. For example, telephone interviews were conducted three times during the year (as opposed to once) and interviewees were asked to recall hunting, fishing, and nonconsumptive activities for the previous four months (as opposed to oneyear recall). As a result, data from the 1991 survey will not be directly comparable with previous survey results.

Data Storage and Access Methods: Data are stored on 9-track magnetic tapes and a CD-ROM with ASCII and SAS data files.

# U.S. NATIONAL PARK SERVICE 

Project Title: $\quad$ Everglades National Park Marine Gamefish Harvest Monitoring<br>Responsible Agency and Key Contact: Everglades National Park, South Florida Research<br>Center; DeWitt Smith or Tom Schmidt

Purpose and Brief Description: To monitor gamefish harvest by obtaining recreational guided and non-guided fisheries data from trip reports and boat launch site interviews, respectively.

Geographic Scope: Ten Thousand Islands (Everglades City) south to Florida Bay, within the boundaries of Everglades National Park. Marine waters divided into 6 different ecological fishing areas.

Date Initiated: $1 / 1 / 72^{\mathrm{a}}$
Collection Frequency: Interviews are conducted every weekend at Flamingo and Everglades City. Guides report as fished.
${ }^{\text {a }}$ This project began in 1958 by the University of Miami's Marine Laboratory under contract to the U.S. National Park Service, and continued to 1968.

Status: Ongoing

## Types of Data Collected/Stored:

Recreational non-guided: Date, day of week, trip hrs., number of people, hours fishing, number of fish caught, species caught, preferred species, area fished, interview location and time, name of interviewer, fisherman skill level and residence, catch number kept and released, individual species lengths (seatrout, red drum, snapper, snook, sheepshead, triple tail, etc.).

Recreational guided: Date, name of guide (permittee), number of hours fished, number of fishermen, species preferred, catch species, number kept and released, and area fished.

## Description of Data Collection Methodology:

Recreational non-guided: Interviews are conducted at two boat launch sites, Flamingo/Everglades City on weekends. Total boating activity within the park is estimated by regressing the daily counts of empty trailers at Flamingo against a known number of fishing boats the same day obtained from periodic aerial surveys. Interview data are expanded to give estimates of total harvest and effort.

Guided: Compliance is estimated through on-the-water park ranger contacts. Guided trip and compliance data are expanded for estimated total effort/catch.

Data Storage and Access Methods: Project is currently in a state of reorganization. Data are currently stored on micro-computers (previously on an outdated Wang minicomputer). However, an ORACLE database system is being developed and should be on line by October, 1992. Access should again be available following a nearly $2-\mathrm{yr}$ period of no standardized weekly/quarterly reports.

Comments: This project is currently understaffed due to budget constraints. Project Reports: Tilmant, J. T., E.S. Rutherford, R.H. Dawson and E.B. Thue. 1990. Impacts of gamefish harvest in Everglades National Park. Pgs.75-103 In: G. Larson and M. Soukup (EDS). Vol. 6 Proc. Conf. Sci. Nat'l Parks, Washington, D.C.

Summaries of 10 other published reports relating to this project can be found in: Schmidt, T.W. 1991. Scientific studies in the coastal and estuarine areas of Everglades National Park: An annotated bibliography. U.S. Dept. of the Interior, NPS, Research/Resources Management Report SER-91/02, SERO, Regional Office, Atlanta, Ga.

# Responsible Agency and Key Contact: <br> Biscayne National Park; Richard Curry or Paul A. Ocker 

Purpose and Brief Description: The purpose of this census is to obtain recreational fisheries data for the waters of and surrounding the National Park.

Geographic Scope: Soldiers Key to Key Largo, Mainland to well into the Gulfstream (approximately $80^{\circ} 20^{\prime}$ to $80^{\circ} 05^{\prime} \mathrm{W}$ and $25^{\circ} 20^{\prime}$ to $25^{\circ} 35^{\prime} \mathrm{N}$ )

Date Initiated: $1 / 24 / 76$
Collection Frequency: Once a week

## Status: Ongoing

Types of Data Collected/Stored: Date, day of week, trip hours, number of people, hours fishing, number of fish caught, preferred species, area fished, interview location, interview time, interviewer, party composition (food, skilled, etc.), origin of trip, fisherman's residence, catch species, catch number kept, catch number released, individual species lengths, number of nonfishing boats, number of dual method fishermen (spearfish, hook and line, etc...), marina trailer count.

Description of Data Collection Methodology: The data collection process consists of a static platform from which the interviewer queries fishermen regarding the aforementioned data points. If the fisherman replies that no fishing was done, the vessel was listed as a non-fishing boat.

Data Storage and Access Methods: Currently the data is stored upon a Wang Database at Everglades National Park approximately 30 miles from BNP headquarters. The Wang database is quite outdated, however, and our last date of logged data was August of 1991. If Data needs to be accessed, please contact Dave Buker at the Everglades Research Center or Doug Harper at NMFS on Virginia Key.

Comments: The non-availability of personnel prevents our program from expanding.

## NATIONAL MARINE FISHERIES SERVICE

Project Title: $\quad$ Marine Recreational Fishery Statistics Survey (MRFSS)<br>Responsible Agency and Key Contact: MRFSS, NMFS Fisheries Statistics Division; John Witzig

Purpose and Brief Description: The purpose of the MRFSS is to establish a reliable data base for estimating the impact of marine recreational fishing on marine resources. MRFSS information is used by Fishery Management Councils and State and Federal resource agencies to formulate fishery management plans, to evaluate future demands on fish stocks, to predict and evaluate the impact of fisheries regulations, and to plan recreational facilities for anglers. The MRFSS collects data on shore, private/rental boat and party/charter boat recreational fishing on a bimonthly basis using a complementary survey methodology. A telephone survey is used to collect reliable data on the number of trips made in the previous two months, locations fished, and dates on which those trips were made. An intercept survey of anglers at fishing sites is used to collect data on the actual catch, such as species, number, and weight and length of fish caught. Add-on questions and surveys have been used to gather economic data, shellfishing participation and other items of special interest. The MRFSS Program is a national program; however, estimates for effort and for catch of individual species are available at the state, mode, area, and wave level. Estimates of the number of fishing trips and individuals participating are also available at similar levels of detail. Other data available include catch rates, lengths, weights, and site descriptions.

## Geographic Scope:


${ }^{a}$ Sampling is not conducted in Texas; however estimates of recreational fishing effort and catch are available from the Texas Parks and Wildlife Department.
${ }^{\mathrm{b}}$ Planning is underway to resume the MRFSS Program on the Pacific coast beginning in 1993.

Date Initiated: $1 / 1 / 79$

Collection Frequency: Ongoing, with estimates made on a bimonthly basis.

[^0]Intercept Survey: Finfish catch, weight, weight and length by species; state and county of residence; avidity level (trips per year); mode of fishing; area of fishing.

Telephone Household Survey: Presence of marine recreational anglers in the household; number of anglers per household; number of finfishing trips in a 2-month period; mode of each trip; location of each trip.

Information on various data items of specialized interest (tournament participation, sea turtle sightings, artificial reef and oil/gas platform use, reeffish economics, striped bass fishing, etc.) are included on an as-needed basis.

Description of Data Collection Methodology: The data collection methodology consists of two complementary surveys: a telephone survey of households and an intercept survey of anglers at fishing access sites. The telephone survey is used to collect data on certain trip aspects during the previous two months, such as the total number of trips made, locations fished, and dates on which the trips were made. Preparatory research indicated that reliable information on trips could be collected with a two-month recall period. The same research also indicated that information on the actual catch such as species, number, and weight and length of fish caught could not be reliably collected by telephone; therefore, these data are obtained from anglers by trained interviewers at fishing access sites. Data from the two independent surveys are combined to produce estimates of total effort, participation, and catch. Survey sampling and estimate generation is stratified by subregion, state, fishing mode (shore, private/rental boat, and party/charter boat), fishing area and bimonthly waves. Analysis of results from the 1979 and 1980 surveys found that only about five percent of the annual recreational catch on the Atlantic and Gulf coasts was taken during the January/February (Wave I) period, while costs to sample during that period were very high, particularly in the North and Mid-Atlantic subregions. Therefore, sampling effort during January and February is now limited to Gulf coast states and the Atlantic coast from North Carolina to Florida.

Telephone Household Survey Methods. Telephone survey interviews are carried out in twoweek periods starting the last week of each wave and continuing in the first week of the following month. Respondents are asked to recall on a trip-by-trip basis all marine recreational fishing trips made within their state during the 60 days prior to the interview.

Sampling effort is directed at households located in counties within 25 miles of the coast or major bays or estuaries. Sampling effort in the South Atlantic and Gulf of Mexico subregions is expanded during May through October to include households in counties within 50 miles of the coast. Currently in North Carolina, households in counties within 50 miles of the coast are surveyed during November to April, and in counties within 100 miles of the coast during May through October, because of the high proportion of non-coastal anglers intercepted in the access intercept portion of the survey.

The telephone survey interview quota for each wave varies with the amount of seasonal fishing activity expected. to maintain statistical properties of expanded estimates, telephone sampling effort is probabilistically allocated at the household level. Interview allocations for each county are based on the ratio of the square root of the population within each county to the sum of the square roots of all county populations in the dialing area in the state.

The allocation made in each telephone prefix is based on the frequency of households assigned that prefix. The appropriate number of samples (household telephone numbers) is then randomly generated for each county and wave with replacement. All households are eligible for contact each wave, regardless of whether they were contacted in a previous wave; however, no more than one percent of the households contacted are included in the sample more than once a year.

Interviews are conducted from 10:30 am to $9: 30 \mathrm{pm}$ (respondent's local time) on weekdays and weekends. Up to six attempts are made to reach each household and as many attempts as possible are made to households who were determined to contain marine anglers in order to complete the questionnaire for each angler in the household. Spanish-language interviews are conducted when needed. Information on marine recreational fishing activity is obtained from each angler in a household or from a responsible adult when appropriate.

Intercept Survey Methodology. The intercept survey consists of on-site interviews which gather catch and demographic data from marine recreational anglers in three fishing modes: shore-based, private/rental boat, and party/charter boat. Party boats are not currently sampled by the MRFSS in the South Atlantic and Gulf subregions. Sampling is conducted continuously in two-month sampling periods (waves) from january through December, with the exception that sampling is not conducted during January and February on the Atlantic coast north of North Carolina.

Sampling is stratified by state, mode, and wave with a minimum base number of intercepts in each stratum. Samples are allocated beyond the minimum in proportion to average estimates of fishing pressure from the previous three years. Complete coastwide site lists were created and are updated each wave: sites are randomly selected but are weighted by expected fishing activity. Sampling includes weekends, weekdays, and holidays (included in weekend category), and is allocated among the day types in proportion to historical effort.

Anglers are interviewed at assigned sites at the completion of their fishing trips. In the beach/bank subcomponent of the shore mode only, $50 \%$ or less of the interviews may be conducted with anglers who have not completed their fishing trip; however, they must have fished for at least a third of their estimated trip time. At heavy use fishing access sites, subsampling procedures are used to interview every $\mathrm{n}^{\text {th }}$ angler at the completion of their trip. The interview consists of an introduction to the survey, information on the Privacy Act of 1974, an oral interview concerning the fishing trip just completed, and an examination of the respondent's catch, including length and weight measurements of the available catch.

Interview procedures vary slightly by mode. When assigned to party/charter boats, interviewers occasionally ride on party boats to conduct interviews and examine the catch. Private/rental boat anglers are interviewed while recovering their boat or at dockside while cleaning the boat. Shore anglers often are widely distributed along beaches and banks with multiple access points, so some roving within the defined boundaries of the site may be required. However, man-made structures often have a single egress point where anglers are easily intercepted by the interviewer. Procedures have been developed and implemented for each mode and unique set of conditions, including those where catch is unavailable for identification, catches are made by more than one person, and trips last for several days.

Estimation Procedures: The estimates derived from the telephone household and intercept surveys fall into three categories: number of fishing trips taken, number of finfish caught and/or landed (numbers and weight), and number of participants in fishing activities.

Effort Estimates. The MRFSS measure of fishing effort is the estimated number of individual angler fishing trips. Trips are estimated for each wave, mode, and wave. Data from the telephone survey are used to derive mean number of trips per household by mode and wave. This number is multiplied by the number of permanent full-time occupied households in the coastal dialing zone of each state to estimate total number of coast county resident trips by mode. Data on the number of households in the coastal dialing zone are updated annually.

The telephone survey does not provide information on the number of trips taken by anglers who reside in households beyond the coastal dialing zone. To adjust for those trips, a ratio estimator is derived from the intercept survey from the numbers of coastal resident anglers intercepted to the numbers of intercepted anglers who reside outside the coastal dialing zone. Similar procedures are used to estimate non-resident trips, and in some areas to adjust for trips by anglers residing in coastal counties who do not have telephones. Ratio estimators are used to adjust effort estimates if the proportion of coastal county residents interviewed in the intercept survey living in full-time households with telephones differed significantly from the proportion in the latest complete census.

Catch Estimates. The catch of each finfish species is estimated for each subregion, state, mode, area, and wave. The total number of fish caught is calculated from the total number of fishing trips by mode from the telephone survey, and the average number of fish caught per trip and percent of intercepts by fishing area from the intercept survey. The intercept survey and the estimation procedures distinguish between fish brought ashore in whole form which are available for inspection by the sample (Type A Catch), and those not brought to shore in whole form. Those not brought to shore in whole form are separated into those used for bait, filleted, or discarded dead (Type B1 Catch), and those released alive (Type B2 Catch). The purpose for the separation is to distinguish between those fish identified and measured by trained interviewers, and fish reported to the interviewers by anglers, since methodological studies have found that species are often misidentified by anglers and their reported measurements are subject to several types of bias.

Lengths and weights are obtained by sampling the fish that are caught and brought ashore in whole form; therefore, estimated weights can only be calculated directly for Type A Catch. In estimating the mean weight of Catch Type Bl, it is assumed that the mean weight is equal to that of Catch Type A for each subregion, state, mode, fishing area, wave, and species.

Most of the sampled trips were completed trips; however, some beach/bank trips in the shore mode are incomplete trips. These interviews are adjusted before making estimates by multiplying the recorded catch per hour by the anticipated total trip length reported by the angler.

Participation Estimates. Estimates of the number of participants are derived from telephone and intercept data, and are calculated to account for varying levels of reported fishing avidity. The probability of selection in the intercept survey is higher for a person who fishes frequently than for a person who seldom fishes. These differences in probability of selection are corrected by using the reciprocal of the number of trips each intercepted angler reported having taken in the previous 12 months. Estimates of participation are made annually on a state basis. These estimates are not additive across states since an individual can fish in more than one state in a year.

Adjustments to Estimates. Population estimates such as total fishing effort are subject to wide variability when based on a relatively small number of interviews in each cell. The MRFSS protocol for estimates of total catch and effort is very sensitive to the inclusion of a few extreme observations in reported trips by individual households and to ratios of coastal to non-coastal and non-resident anglers. Outliers (i.e. trips greater than the $95^{\text {th }}$ percentile using data from the previous historic levels) are thus reduced to the value of the $95^{\text {th }}$ percentile.

Estimation of the fishing effort for the party/charter boat sectors of the recreational fishery is difficult due to the relatively low incidence of reported fishing activity in these modes by households contacted in the telephone survey. During peak periods of fishing activity less than two percent of the households contacted in the southeast reported having taken a trip on a charter boat. Typically, households either reported a large number of trips on a charter boat, having hired the boat for a day or more, or no fishing effort in the mode. This activity pattern frequently results in either an estimate greater than the maximum number of fishing trips possible for a state's charter fleet or an estimate of zero fishing effort. To reduce the effect of small sample sizes on the effort estimates for the charter boat fishery, telephone survey data from the previous four years plus the current year are combined at the state and wave level and estimates are produced using a prevalence rate from the combined data base. This approach has some drawbacks: pooling data across years tends to mask changes in the fishery. However, pooling provides more reliable estimates for a relatively small proportion of the coastal population.

In some cases, unusually high ratios of non-coastal and non-resident anglers to coastal resident anglers lead to unrealistically high estimates of fishing effort attributable to non-coastal or nonresident anglers. This is common to the charter boat fishery in the South Atlantic and Gulf of

Mexico subregions where there is a clustering effect of sampling all anglers on a boat who had similar demographic characteristics. Adjustments to these expansion ratios are handled on a case-by-case basis. When examination of individual estimates indicates an unusually high ratio when compared to historical averages, ratios based on pooled data are used in lieu of the ratios based on the current year's data.

Data Storage and Access Methods: Intercept and estimate data are stored on tapes and diskettes as SAS data sets and in ASCII formats. Intercept and estimate data are routinely sent to all state natural resource agencies, Fishery Management Councils, Interstate Marine Fisheries Commissions, and regional NMFS facilities. Data are available by contacting Dr. John Witzig, Fisheries Statistics Division, National Marine Fisheries Service, 1335 East-West Highway, Silver Spring, Maryland 20910.

Comments: Most recent survey report: Essig, R.J., J.F. Witzig, M.C. Holliday. 1991. Marine Recreational Fishery Statistics Survey, Atlantic and Gulf Coasts, 1987-1989. Curr. Fish. Stat. No. 8904. NMFS, Fish. Stat. Div., Silver Spring, MD. 363 pp.

## Responsible Agency and Key Contact: MRFSS, NMFS Fisheries Statistics Division; David Van Voorhees

Purpose and Brief Description: The ABTRFS collects data needed for weekly estimates of both the recreational fishing effort directed at large pelagic fishes and the recreational catch of Atlantic bluefin tuna (ABT). The survey also collects recreational catch data for other tunas, billfishes, and sharks, as well as biological data on harvested ABT and other large pelagic species. The effort and catch data are used to generate weekly estimates of recreational catch of ABT for the purpose of monitoring the fishery.

The ABTRFS is comprised by four independently conducted surveys:

1. A Mark/Recapture Survey is conducted at marina gas pumps and public ramps to collect data needed for weekly estimation of the total number of charter or private/rental boats participating in the large pelagics recreational fishery.
2. A Telephone Survey is conducted to collect data needed for weekly estimation of the average number of trips per charter or private/rental boat participating in the large pelagics recreational fishery.
3. An Intercept Survey conducted at dockside is used to collect data needed for weekly estimation of the average Atlantic bluefin tuna catch per trip for charter or private/rental boats participating in the large pelagics recreational fishery.
4. An Exit-Count Survey conducted at inlets is used as an alternate method for collecting data needed for weekly estimation of the total number of charter or private/rental boat trips that targeted large pelagic fishes.

Geographic Scope: The 1992 ABTRFS was conducted along the Atlantic Coast from North Carolina to Maine.

Date Initiated: 5/18/92
Collection Frequency: Continuous with weekly estimates

Status: Ongoing

## Types of Data Collected/Stored:

Mark/Recapture Survey: Ratio of listed (marked) boats to unlisted (unmarked) boats participating in the recreational large pelagic fishery.

Telephone Survey: Mean number of large pelagic fishing (LPF) trips taken per week per listed boat; mean number of LPF trips targeting Atlantic bluefin tuna taken by listed boats per week.

Intercept Survey: Mean catch in numbers of each large pelagic species per LPF boat trip; lengths and weights of individual fish caught; area fished by name of fishing grounds and by lat/long code; mode of fishing used; fishing gear and methods used; target species; type of access site used.

Inlet Exit-Count Survey: Mean number of LPF boats participating in LPF fishery per day for each inlet surveyed.

## Description of Data Collection Methodology:

Mark/Recapture Survey: This survey collects data needed for weekly estimation of the total number of charter or private/rental boats participating in the large pelagics recreational fishery. It involves continuous random sampling of large pelagic fishing boats at gas pumps and/or boat ramps for the purpose of estimating the ratio of "marked" boats (those already listed on the telephone survey directory frame) to "unmarked" boats (those not listed). The total number of listed boats can be divided by the proportion of intercepted boats that were "marked" to obtain an estimate of the total number of boats in the recreational fishing fleet for large pelagics.

Sites for mark/recapture interviewing are randomly selected from a list of sites weighted in relation to the level of usage by boats that fish for large pelagics (hence high-use sites are selected more frequently than low-use sites). Weekly assignment quotas are established for mark/recapture interviewing of boat captains and owners in each state.

Data are collected in one-week waves (Monday-Sunday), with interviewing occurring between 2:00 PM and 8:00 PM. The data obtained from each charter boat captain or private/rental boat owner who arrives at the gas pump or boat ramp include: 1) date, day, site, and inlet of the intercept; 2) name of captain/owner, name of boat, and telephone number; 3) mode, access type, access site name, and inlet name that best describe the characteristics and location of the boat; 4) names of other boats and captain/owners who participate in the recreational fishery for large pelagics.

Telephone Survey: This survey collects data needed to estimate on a weekly basis the mean number of fishing trips per boat participating in the recreational large pelagics fishing fleet. Weekly estimates of number of trips per boat are calculated independently for charter boats and private/rental boats. The telephone survey consists of weekly dialing and interviewing of
random samples of charter boat captains and private/rental boat owners known to fish for large pelagic fishes. The directory frames used for random dialing are compiled from permit lists, tournament lists, and directory frames used in prior years of the Large Pelagic Recreational Survey of the NMFS.

Weekly phone-contact quotas have been established for listed charter boat captains and private/rental boat owners in each state. Data are collected in one-week waves with dialing and interviewing conducted on the Monday, Tuesday, and Wednesday following each week. The data obtained from each interviewed boat captain or owner include: 1) numbers of large pelagic fishing trips taken during the previous week; 2) date, day, mode, access type, access site, inlet, fishing location, and target category for each of those trips; 3) numbers of anglers on board and numbers of lines in the water for each of those trips; 4) numbers of fish kept and released by species group, by species, and by market category for each of those trips.

Intercept Survey: This survey collects data needed for weekly estimations of the average catch of ABT per boat trip. Catch-per-trip estimates are calculated independently for charter boats and private/rental boats. Catch-per-trip estimates for ABT are separated by market category, but catch-per-trip estimates for other large pelagic fishes are separated by species or species group.

The survey consists of random intercepting and interviewing of charter boat captains and private/rental boat owners who have just finished fishing for large pelagic fishes. The sites used for dockside interviewing are randomly selected from a list of sites weighted in relation to estimated fishing activity directed at large pelagics (hence high-use sites are selected more frequently than low-use sites).

Weekly assignment quotas have been established for interviewing of charter boat captains and private/rental boat owners in each state. Data are collected continuously in one-week waves (Monday-Sunday), with interviewing always occurring between 3:00 PM and 7:00 PM. The data obtained from each interviewed boat captain or owner include: 1) numbers of large pelagic fishing trips taken during the previous week; 2) date, day, mode, access type, access site, inlet, fishing location, and target category for the intercepted trip; 3) number of anglers on board and the number of lines in the water during the intercepted trip; 4) numbers of fish kept and released for each ABT market category, species, or species group for the intercepted trip; 5) lengths, weights, and sexes of available fish separated by market category, species, or species group.

Exit-Count Survey: This survey collects data needed to estimate on a weekly basis the total number of large pelagic fishery boat trips taken. It provides an alternate means of estimating the weekly fishing effort targeting large pelagic fishes. Field clerks do the following: 1) count charter and private/rental boats as they exit inlets during the early part of the day, and 2 ) examine boats and attempt to categorize them according to size, rigging, and other characteristics that might help identify their fishing target.

Field clerk assignments are randomly distributed among inlets weighted by relative fisheryspecific activity. Weekly assignment quotas have been established for inlet exit counts in each
state. Data are collected in one-week waves (Monday-Sunday), with counts always performed between 5:00 AM and 8:00 AM.

Data Storage and Access Methods: Mark/Recapture, Telephone, Intercept, and Exit-Count Survey data will be stored on tapes and diskettes in ASCII formats. All data will be available by contacting Dr. Steve Turner, Southeast Fisheries Science Center, National Marine Fisheries Service, 75 Virginia Beach Drive, Miami, Florida 33149.

# Project Title: $\quad$ Economic Data Collection for the Gulf of Mexico Recreational Reef Fish Fishery 

Responsible Agency and Key Contact: NMFS Southeast Regional Office; Ed Burgess

Purpose and Brief Description: This project collected information for the management of reef fish in the Gulf of Mexico. Catch and effort data as obtained by the Marine Recreational Fishery Statistics Survey were used to estimate optimum yield for the fishery. The optimum yield was then used to estimate total allowable catch. This project collected information on the economic value and social considerations associated with the reef fish fishery. This information when used in conjunction with the estimates of the total allowable catch will be used to assist in allocation decisions for reef fish.

Geographic Scope: Gulf of Mexico

Date Initiated: 1/01/91 Collection Frequency: Bimonthly
Status: Ended Date Discontinued: 2/28/92 Reason: Project completed

Types of Data Collected/Stored: This project relied on the field work being conducted as part of the broader intercept portion of the Marine Recreational Fishery Statistics Survey. Information was collected from intercepted anglers who targeted or caught reef fish or who intended to fish for reef fish. This survey made use of the intercept survey to identify reef fish anglers and telephone interviews and/or log books to collect economic information from the identified anglers. Information collected includes number of reef fish fishing trips taken during the previous 2 months and 12 months; state and county of residence; fishing mode; costs associated with the fishing trips taken during the previous 2-month period; number of reef fish caught and kept on each fishing trip during the previous 2 months; purpose of each trip; and valuation of each fishing trip. Approximately 1,000 anglers participated in the survey during 1991.

Description of Data Collection Methodology: Participants in this survey were recruited during the initial intercept contact and provided with a $\log$ book in which to record trip-by-trip information for the next 2-month period. The log book was to be returned to the data collection contractor and information entered into an appropriate computer file. Participants who did not return the log book were interviewed by phone.

Data Storage and Access Methods: All data are stored as ASCII files in the Southeast Regional Office, and are useable on DOS-based personal computers. Data may be accessed using a variety of software.

# Project Title: Headboat Survey <br> Responsible Agency and Key Contact: Beaufort Laboratory, SEFSC, NMFS; Ford A. Cross <br> Purpose and Brief Description: To establish indices of stock status of individual species of reef fish through annual estimates of the catch in number and weight of each species taken by anglers on headboats, of the angler effort expended, and of the size distribution for each species. 

Geographic Scope: Southeast United States and Gulf of Mexico

Date Initiated: $\quad 3 / 72$ - North Carolina, South Carolina
2/76 - Northeast Florida
6/78 - Southeast Florida and Keys
12/85 - Gulf of Mexico
Collection Frequency: Estimates provided annually; estimates of monthly or seasonal catches also provided.

Status: Ongoing

Types of Data Collected/Stored: Length and weight of fish viewed in intercept samples; catch by vessel trip of individual species; number of anglers by trip, duration of trip, area of fishing; biological material (otoliths, scales, spines, guts, gonads).

Description of Data Collection Methodology: NMFS employees sample catches at dockside and occasionally at sea to get fish sizes and biological materials. A logbook maintained by vessel personnel provides catch by species, angler number, fishing location, etc. Logbooks maintained voluntarily as a quasi-census until 2/92 in Atlantic and until 9/87 in Gulf of Mexico. Thereafter, logbook maintenance was mandatory.

Data Storage and Access Methods: Data are stored in a database on a Unison RS-6000 minicomputer and several $386 / 486$ microcomputers. Presently, access is only available to data on the microcomputer but in the near future access to data on the RS- 6000 will be available via a network.

Comments: For full details see: Dixon, R. L. and G. R. Huntsman. "Estimating Catches and Fishing Effort of the Southeast United States Headboat Fleet, 1972-1982." NOAA Technical Reports NMFS. In Press.

# Project Title: $\quad$ Southeast Charterboat Survey 

Responsible Agency and Key Contact: Panama City Laboratory, SEFSC, NMFS; Eugene L. Nakamura

Purpose and Brief Description: Obtain catch-per-effort data for estimating relative abundance and distribution of fishes caught by charterboats. Cooperative charterboat captains maintain daily fishing logs and provide these to the Panama City Laboratory.

Geographic Scope: From the Virginia-North Carolina border to the Texas-Mexico border.

Date Initiated: 1/01/82
Collection Frequency: Daily

Status: Ongoing

Types of Data Collected/Stored: Species, species targeted, number kept, number released, hours of trolling, hours of non-trolling, average weight, number of anglers, fishing location, date.

Description of Data Collection Methodology: Charterboat captains are asked to maintain daily fishing logs for us. Logbooks are sent to cooperative captains, who fill out the daily fishing logs and submit the logs at the end of each week to the Panama City Lab. The logs are edited and the data are entered into computers.

Survey procedures have varied by year:
1982-85: Captains were paid for submitting data.
1986-87: Data submission was mandatory; captains were not paid.
1988: $\quad$ Survey was discontinued.
1989-present: Survey was reinstated; data submission is voluntary.

Data Storage and Access Methods: Log sheets are edited. Data from logs are entered into personal computers and the data are re-edited. The data are then archived on hard disks.

Responsible Agency and Key Contact: Miami Laboratory, SEFSC, NMFS; Mark I. Farber

Purpose and Brief Description: Collect HPUE, CPUE and biological data at billfish tournaments in the western north Atlantic, Gulf of Mexico and Caribbean Sea as part of an ongoing 21 year study. Data are used to monitor trends in the recreational fishery for billfish and to monitor the populations of billfish.

Geographic Scope: From Maine to Key West off the US East Coast, the Bahamas, Caribbean and U.S. Gulf Coast from Brownsville, Texas to Clearwater, Florida.

Date Initiated: 1/01/71 Collection Frequency: Continuous, yearround

Status: Ongoing

Types of Data Collected/Stored: Hook-per-unit-effort(HPUE), catch-per-unit-effort(CPUE); biological information, including length, weight and sex data, as well as various tissue, blood, and hard-part samples as needed; environmental data and bait information associated with each fishing trip are also collected.

Description of Data Collection Methodology: Biologists and trained port samplers attend selected billfish tournaments in the study area. Additional information is collected on a volunteer basis by local, state, university and federal agencies, and by cooperating fishermen and tournament personnel.

Data Storage and Access Methods: All data are stored on the main frame (A10) computer at the Miami Lab, however ancillary files, reports and summaries are stored on PC's. Data can be accessed through the Miami Lab main frame (A10) computer. Ancillary files and summaries are stored on hard drives and floppy disks.

Responsible Agency and Key Contact: Miami Laboratory, SEFSC, NMFS; Mark I. Farber Panama City Laboratory, SEFSC, NMFS; Paul J. Pristas

## Purpose and Brief Description: Collect HPUE, CPUE and biological data at major billfishing

 ports in the northern Gulf of Mexico as part of an ongoing 21 -year study. Data are used to monitor trends in the recreational fishery for billfishes and to monitor the populations of billfish.Geographic Scope: From St. Petersburg, Florida to Port Isabel, Texas in the northern Gulf of Mexico.

Date Initiated: 1/01/71
Collection Frequency: Continuous, March December

## Status: Ongoing

Types of Data Collected/Stored: Hook-per-unit-effort(HPUE), catch-per-unit-effort(CPUE); biological information, including length, weight and sex data, as well as hard-part samples as needed; environmental data and bait information associated with each fishing trip are also collected.

Description of Data Collection Methodology: Biologists and trained port samplers survey selected major ports of billfishing activity in the study area. Additional information is collected on a volunteer basis by local, state, university and federal agencies, and by cooperating fishermen and tournament personnel.

Data Storage and Access Methods: All data are stored on the main frame (A10) computer at the Miami Lab, however ancillary files, reports and summaries are stored on PC's. Data can be accessed through the Miami Lab main frame (A10) computer. Ancillary files and summaries are stored on hard drives and floppy disks.
Project Title:: Consumption Survey of Fish and Shellfish Caught in Recreational and
Subsistence Fisheries

Responsible Agency and Key Contact: Charleston Laboratory, SEFSC, NMFS; Thomas Siewicki

Purpose and Brief Description: To design and evaluate survey instruments that specifically identify and characterize consumers of recreationally and subsistence-caught fish and shellfish for use in assessments of risk to chemical and biological contaminants.

Geographic Scope: National, Southeast Region

Date Initiated: 6/01/92
Collection Frequency: Pilots will be tested starting February 1993

## Status: Ongoing

Types of Data Collected/Stored: Design and evaluation of studies to characterize fish and shellfish consumption including: harvest location, species, specimen size, how prepared, portion size and frequency, and anatomical portions. Also, consumer ethnicity, physical characteristics, residence, health status, fish mode and avidity, follow-up.

Description of Data Collection Methodology: Combination of creel census/personal intercept and follow-up (telephone and mail-out). Directed efforts to specific sites will be necessary.

Data Storage and Access Methods: Current plans include workstation/PC storage and access.

## NORTH CAROLINA

Project Title: Albemarle Sound Creel Survey<br>Responsible Agency and Key Contact: North Carolina Division of Marine Fisheries (DMF); Lynn Henry and Paul Phalen

Purpose and Brief Description: To collect recreational catch and effort data and biological data from the Albemarle Sound area.

Geographic Scope: Albemarle Sound Area, North Carolina

Date Initiated: 10/01/90
Collection Frequency:

Status: Ongoing

Types of Data Collected/Stored: Data collected include effort, catch per effort, target species, lengths and weights and other information on the trip and fishing location.

Description of Data Collection Methodology: A stratified non-random probability boating access point creel census, combined with aerial boat counts, is used to estimate recreational hook-andline fishing effort, catch, and harvest for striped bass and other species in Albemarle Sound and its tributaries. Fishing effort and catch in the Roanoke, Eastmost, Middle, and Cashie rivers (tributaries to Albemarle Sound) are assessed for a portion of the year in a separate creel survey conducted by the North Carolina Wildlife Resources Commission.

Data Storage and Access Methods: All data are stored on State of North Carolina mainframe and can be accessed by SAS programs.

## Project Title: $\quad$ North Carolina Marine Recreational Statistics Survey

Responsible Agency and Key Contact: North Carolina Division of Marine Fisheries (DMF); Paul Phalen and Doug Mumford


#### Abstract

Purpose and Brief Description: Augmentation of existing MRFSS through increased intercepts (7-10 times) and telephone samples size to improve data estimates and supply needed biological data.


Geographic Scope: Coastal North Carolina

Date Initiated: 1/01/87
Collection Frequency:

Status: Ongoing

Types of Data Collected/Stored: All the key MRFSS variables as well as North Carolina detailed waterbodies.

Description of Data Collection Methodology: Same as MRFSS

Data Storage and Access Methods: Data are stored at NMFS (DC) as well as DMF. Data in North Carolina are stored on a mainframe and can be accessed using SAS.

Comments: Because DMF increases sample size, we can modify sampling to put more effort in cells identified as priority due to state management needs. Also, we have asked supplemental questions on both the intercept interview and phone interviews.

## SOUTH CAROLINA

Project Title: Billfish Monitoring Project
Responsible Agency and Key Contact: South Carolina Wildlife and Marine Resources Department, in cooperation with NMFS; D.L. Hammond

Purpose and Brief Description: Document total recreational catch of blue marlin, white marlin, sailfish, spearfish, and swordfish and establish seasonal CPUE by species.

Geographic Scope: South Carolina

Date Initiated: 4/72
Collection Frequency: During 3-7 tournaments held annually in May and June

Status: Ongoing

Types of Data Collected/Stored: CPUE by species during May and June of each year; length, weight, sex data by species for each year; total annual catch by species; annual vessel harvest; catch per trip and per angler.

Description of Data Collection Methodology: Direct vessel intercept during tournaments. Weekly telephone survey of key locations statewide.

Data Storage and Access Methods: Hand-tabulated original data forms; annual summary tables.
Project Title: $\quad$ Ocean Pelagic Gamefish Survey
Responsible Agency and Key Contact: South Carolina Wildlife and Marine Resources Department; D.L. Hammond.
Purpose and Brief Description: Collect CPUE data by species, total harvest, and creel composition for oceanic pelagic gamefish taken by boats participating in sportfishing tournaments.
Geographic Scope: South Carolina
Date Initiated: 4/85 Collection Frequency: During ..... 3-7 tournaments held annually in May and June
Status: Ongoing
Types of Data Collected/Stored: Creel composition per trip by tournament, total harvest byspecies per tournament, total effort, length frequency by species, CPUE by species.
Description of Data Collection Methodology: Direct vessel intercept during tournaments.
Data Storage and Access Methods: Hand-tabulated original data forms.

# Responsible Agency and Key Contact: South Carolina Wildlife and Marine Resources Department, Marine Resources Division; Bob Low and Charles Moore 

Purpose and Brief Description: Test feasibility of passive collection (on-site drop box) method for surveying verses creel census methodology and gather baseline data on recreational fisheries.

Geographic Scope: Coastal South Carolina

Date Initiated: $11 / 15 / 85 \quad$ Collection Frequency: Weekly

Status: Ended $\quad$ Date Discontinued: 6/30/86 Reason: Project completed

Types of Data Collected/Stored: Length of boat, type of activity (rod and reel, gill net, crabbing, etc), site usage frequency, time of day usage, preferred months, target species, catch (number), problems perceived in the local fishery.

Description of Data Collection Methodology: On site collection boxes with survey cards and roving creel census.

Data Storage and Access Methods: Data not computerized, raw data discarded, summary data in project report.

Comments: Project reference: Low, R.A., W. Waltz, R. Matore and C.J. Moore. 1986. South Carolina Marine Recreational Fishery Surveys, 1985 and 1986. S.C. Marine Resources Center Technical Report Number 65. 65 pp.

# Responsible Agency and Key Contact: South Carolina Wildlife and Marine Resources Department, Marine Resources Division; Bob Low and Wayne Waltz 


#### Abstract

Purpose and Brief Description: Documents estimated total catch by species, time frame, and fishing zone, disposition of catch, target species, estimated participation by residential category, estimated effort by residential category and time frame, length distribution of selected species, CPUE for selected species.


Geographic Scope: Coastal South Carolina

| Date Initiated: |  | Collection Frequency: Weekly |
| :--- | :--- | :--- |
| Status: Ended | Date Discontinued: | 12/31/87 $\quad$ Reason: Project completed |

Types of Data Collected/Stored: NMFS MRFSS data elements.

Description of Data Collection Methodology: NMFS MRFSS procedures.

Data Storage and Access Methods: NMFS maintains MRFSS files. Summary data available in project report.

Comments: Project reference: Low, R.A. and W. Waltz. 1988. South Carolina Marine Recreational Fishery Statistics Survey, 1987. S.C. Marine Resources Center Technical Report Number 68. 58 pp.
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\begin{array}{ll}\text { Project Title: }\end{array}
$$ \begin{array}{l}South Carolina Marine Recreational Fish and Shellfish Fishery Surveys, <br>

1988\end{array}\right]\)\begin{tabular}{l}
Responsible Agency and Key Contact: <br>

| South Carolina Wildlife and Marine Resources |
| :--- |
| Department, Marine Resources Division; Wayne |
| Waltz and Bob Low |

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Purpose and Brief Description: Fishing survey documents estimated total catch by species, time frame, and fishing zone, disposition of catch, target species, estimated participation by residential category, estimated effort by residential category and time frame, length distribution of selected species, CPUE for selected species. Shellfish survey documents types of shellfish taken (i.e. oysters or clams), quantity, trip duration, numbers in party, previous effort, residency, perceived quality and limited socio-economic data.

Geographic Scope: Coastal South Carolina
Date Initiated: $1 / 01 / 88$
Collection Frequency: Weekly
Status: Ended Date Discontinued: Fishing survey - 12/31/88
Shellfish survey - 4/30/89
Reason: Project completed
Types of Data Collected/Stored: Fishing Survey contains NMFS MRFSS data elements. Supplemental state fishing survey data similar to MRFSS. Shellfish survey stored as dBase III file. (see purpose and description above)

Description of Data Collection Methodology: Fishing survey used NMFS MRFSS procedures. Supplemental state survey similar procedures to MRFSS, but different site scheduling. Shellfish survey is a roving on-site creel census.

Data Storage and Access Methods: NMFS maintains MRFSS files. Supplemental state survey forms stored at SC Marine Resources as SAS data set. Shellfish survey stored at SC Marine Resources as dBase III file. Summary data available in project report.

Comments: Project reference: Waltz, W., D.B. Stone, U. West, E. Hens and R.A. Low. 1990. South Carolina Marine Recreational Fish and Shellfish Fishery Surveys, 1988. S.C. Marine Resources Center Technical Report Number 75. 71 pp.
Project Title: South Carolina Marine Recreational Fishery Survey, 1989

Responsible Agency and Key Contact: $\quad$| South Carolina Wildlife and Marine Resources |
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| Department, Marine Resources Division, Office of |
| Fisheries Management; Bob Low and Bryan Stone |

Purpose and Brief Description: Documents estimated total catch by species, time frame, and fishing zone, disposition of catch, target species, estimated participation by residential category, estimated effort by residential category and time frame, length distribution of selected species, CPUE for selected species.

Geographic Scope: Coastal South Carolina

Date Initiated: 3/01/89
Collection Frequency: Weekly

Status: Ended Date Discontinued: 12/31/89 Reason: Project completed

## Types of Data Collected/Stored: NMFS MRFSS data elements

Description of Data Collection Methodology: NMFS MRFSS procedures. State survey similar interview form and sites, different site scheduling.

Data Storage and Access Methods: NMFS maintains MRFSS file. State survey information in SAS data sets.

Comments: Project reference: Low, R.A., C.W. Waltz, and D.B. Stone, III. 1992. South Carolina Marine Recreational Fishery survey, 1989. S.C. Marine Resources Center, Charleston, S.C. Data report. 45 pp .
Project Title: South Carolina Marine Recreational Fishery Survey, 1990

Responsible Agency and Key Contact: $\quad$| South Carolina Wildlife and Marine Resources |
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| Department, Marine Resources Division, Office of |
| Fisheries Management; Bob Low and Bryan Stone |

Purpose and Brief Description: Documents estimated total catch by species, time frame, and fishing zone, disposition of catch, target species, estimated participation by residential category, estimated effort by residential category and time frame, length distribution of selected species, CPUE for selected species (fish only).

Geographic Scope: Coastal South Carolina

Date Initiated: 3/01/90 Collection Frequency: Weekly

Status: Ended Date Discontinued: 12/31/90 Reason: Project completed

Types of Data Collected/Stored: NMFS MRFSS data elements

Description of Data Collection Methodology: NMFS MRFSS procedures. State survey similar interview form and sites, different scheduling.

Data Storage and Access Methods: NMFS maintains MRFSS file. State survey information in SAS data sets.

Comments: Project reference: Low, R.A., C.W. Waltz, and D.B. Stone,III. 1992. South Carolina Marine Recreational Fishery survey, 1990. S.C. Marine Resources Center, Charleston, S.C. Data report. 61 pp .

Responsible Agency and Key Contact:<br>South Carolina Wildlife and Marine Resources Department, Marine Resources Division, Office of Fisheries Management; Bob Low and Bryan Stone

Purpose and Brief Description: Documents estimated total catch by species, time frame, and fishing zone, disposition of catch, target species, estimated participation by residential category, estimated effort by residential category and time frame, length distribution of selected species, CPUE for selected species (fish only).

Geographic Scope: Coastal South Carolina

Date Initiated: 3/01/91 Collection Frequency: Weekly

Status: Ended Date Discontinued: 12/31/91 Reason: Project completed

Types of Data Collected/Stored: NMFS MRFSS data elements, trip expenditures, tag recapture information.

Description of Data Collection Methodology: NMFS MRFSS procedures. State survey similar interview form and procedures, different site scheduling.

Data Storage and Access Methods: NMFS maintains MRFSS file. State survey information in SAS data sets.

Comments: Project report (draft): Low, R.A., C.W. Waltz, and D.B. Stone, III. 1992. South Carolina Marine Recreational Fishery survey, 1991. S.C. Marine Resources Center, Charleston, S.C. Data report. 73 pp .

Project Title: $\quad$ South Carolina Marine Recreational Fishery Survey, 1992<br>Responsible Agency and Key Contact:<br>South Carolina Wildlife and Marine Resources Department, Marine Resources Division, Office of Fisheries Management; Bob Low and Bryan Stone

Purpose and Brief Description: Documents estimated total catch by species, time frame, and fishing zone, disposition of catch, target species, estimated participation by residential category, estimated effort by residential category and time frame, length distribution of selected species, CPUE for selected species (fish only).

Geographic Scope: Coastal South Carolina

Date Initiated: 1/01/92
Collection Frequency: Weekly

## Status: Ongoing

Types of Data Collected/Stored: NMFS MRFSS data elements, trip expenditures, tag recapture information.

Description of Data Collection Methodology: NMFS MRFSS procedures. State survey uses similar interview form and procedures, different site scheduling.

Data Storage and Access Methods: NMFS maintains MRFSS file. State survey information in SAS data sets.

Project Title: $\quad$ Recreational Pier, Charterboat and Head Boat Reporting<br>Responsible Agency and Key Contact:<br>South Carolina Wildlife and Marine Resources Department, Marine Resources Division, Office of Fisheries Management; Bob Low

# Purpose and Brief Description: To obtain catch and effort data from commercial piers, charterboats and head boats. 

Geographic Scope: Coastal South Carolina

Date Initiated: 7/01/92
Collection Frequency: Daily trip logs
reported on a monthly basis.
Status: Ongoing

Types of Data Collected/Stored: Effort, catch and participation information, location, duration, artificial reef usage, numbers of anglers, number and weight by species.

Description of Data Collection Methodology: Mandatory daily trip log submitted on a monthly basis.

Data Storage and Access Methods: In the process of being developed. Probably SAS data sets.

Project Title: | Survey of Recreational Saltwater Private-boat Anglers and Shellfish |
| :--- |
| Gatherers |

| Responsible Agency and Key Contact: |
| :--- | | South Carolina Wildlife and Marine Resources |
| :--- |
| Department, Marine Resources Division, Office of |
| Fisheries Management; Bob Low |


| Purpose and Brief Description: To obtain catch, effort and participation data from private-boat |
| :--- |
| anglers and recreational shellfish gatherers. |

Geographic Scope: Coastal South Carolina
Date Initiated: 7/01/92 $\quad$ Collection Frequency: Being developed
Status: Ongoing
Types of Data Collected/Stored: Effort, catch and participation information, general location
information, average trip duration, artificial reef usage, numbers of anglers per boat, etc.
Description of Data Collection Methodology: Data will be collected through a periodic mail
survey that is being developed. A data base will be built from records obtained from mandatory
saltwater fisheries stamp purchases.

Data Storage and Access Methods: In the process of being developed.

Comments: Stamp went into effect on 1 July 92. Pilot survey will start in 1993.

Project Title: $\quad$| Assessment of Participation and Resource Impact of Shrimp Baiting in |
| :--- |
| Coastal South Carolina during 1987 |

Responsible Agency and Key Contact: South Carolina Wildlife and Marine Resources Department, Marine Resources Division, Office of Fisheries Management; Dale Theiling

Purpose and Brief Description: Estimate participation of individuals and boats and the number of bait-marking poles utilized. Document period of activity. Estimate total take of the fishery, size and species composition.

Geographic Scope: Coastal South Carolina

Date Initiated: 11/01/87

Status: Ended Date Discontinued: 12/31/87 Reason: Project completed

Types of Data Collected/Stored: Boat landing used, type of bait used, boat length, number throwing cast net, net size, county of residence, daily catch, species composition and subsample of size. Stored as a dBase III file

Description of Data Collection Methodology: One-time post-season mail-out of postage paid self-addressed postcard sent to randomly selected subsample of registered boat owners. On-site creel census at heavily used boat landings.

Data Storage and Access Methods: Data stored as a dBase III file. Analyses handled with dBase III and hand calculations. Summary data available in project report.

Comments: Project reference: Theiling, D. 1988. Assessment of Participation and Resource Impact of Shrimp Baiting in Coastal South Carolina during 1987. S.C. Marine Resources Center, Charleston, S.C. Technical Report 69. 41 pp.

# Responsible Agency and Key Contact: South Carolina Wildlife and Marine Resources Department, Marine Resources Division; Wayne Waltz <br> Purpose and Brief Description: Estimate total effort (number of trips), estimate total participation by permit holders and assistants, estimate total retained catch of shrimp, identify areas most heavily used, solicit comments on management. 

Geographic Scope: Coastal South Carolina

Date Initiated: $11 / 18 / 88$
Collection Frequency: One-time questionnaire mail-out with follow-up to non-respondents.

Status: Ended $\quad$ Date Discontinued: 2/26/89 Reason: Project completed

Types of Data Collected/Stored: Number of trips by area, number of assistants, average catch/trip, comments.

Description of Data Collection Methodology: Postseason questionnaire mail-out to all licensed participants. Follow-up mail-out to non-respondents.

Data Storage and Access Methods: All data stored at SC Marine Resources as SAS data sets. Summary data available in project report.

Comments: Project reference: Waltz, W. and B. Hens. 1989. Survey of South Carolina Shrimp Baiting Fishery, 1988. S.C. Marine Resources Center Technical Report Number 71:43 pp.


#### Abstract

Project Title: $\quad$ Survey of the South Carolina Shrimp Baiting Fishery, 1989

> Responsible Agency and Key Contact: $\quad$ South Carolina Wildlife and Marine Resources Department, Marine Resources Division, Office of Fisheries Management; Bob Low

Purpose and Brief Description: Estimate total effort (number of trips), estimate total participation by permit holders and assistants, estimate total retained catch of shrimp and fish bycatch, estimate total direct economic expenditures, estimate total ex-vessel value of shrimp catch, develop socioeconomic profile of permit holders, identify areas most heavily utilized, solicit comments on management.


Geographic Scope: Coastal South Carolina

Date Initiated: 9/15/89
Status: Ended Date Discontinued: 12/31/89 Reason: Project completed

## Types of Data Collected/Stored:

On-site intercept: Date, county of residence, zip code, trips this season, number of assistants, gear characteristics, location shrimped, hours shrimped, distance traveled one way, direct trip expenses, fish kept (number/spp.), estimated shrimp catch, condition, container dimensions.

Mail-out questionnaire: County of residence, zip code, trips by month, area shrimped, access point used, number of assistants, average catch/trip, number of times a limit caught, other types of fishing this year, number in household, gross household income, employment status, problems with fishery, comments on management

## Description of Data Collection Methodology:

On-site intercept: Creel clerk stationed at main access points, interviewed and measured (volume) catch.

Mail-out survey: Randomly selected subsample of licensed participants, stratified by residential category. Single mail-out immediately following season closure, postage paid self-addressed return.

Data Storage and Access Methods: Data not computerized, raw data summaries (hand computation) filed, summary data available in project report.

Comments: Project reference: Low, R. A. 1990. Survey of South Carolina Shrimp Baiting Fishery, 1989. S.C. Marine Resources Center, Charleston, S.C. Technical Report 73. 50 pp.

Responsible Agency and Key Contact:<br>South Carolina Wildlife and Marine Resources Department, Marine Resources Division, Office of Fisheries Management; Bob Low

Purpose and Brief Description: Estimate total participation by permit holders and assistants, estimate total effort (number of trips), estimate total catch, estimate effort and catch by area, poll constituency opinion on management options.

## Geographic Scope: Coastal South Carolina

| Date Initiated: | Collection Frequency: One-time mail-out |  |
| :--- | :--- | :--- |
|  |  |  |
| Status: Ended | Date Discontinued: | $12 / 31 / 90 \quad$ Reason: Project completed |

Types of Data Collected/Stored: Number of trips by month and area, number of assistants, average catch/trip, management options supported.

Description of Data Collection Methodology: One-time post-season mail-out of postage paid self-addressed postcard questionnaire sent to randomly selected subsample of licensed participants, stratified by area of residence.

Data Storage and Access Methods: Data not computerized, raw data discarded, raw data summaries (hand computation) filed, summary data available in project report.

Comments: Project reference: Low, R. A. 1991. Survey of South Carolina Shrimp Baiting Fishery, 1990. S.C. Marine Resources Center, Charleston, S.C. Technical Report 76. 22 pp.

# Project Title: $\quad$ Survey of the South Carolina Shrimp Baiting Fishery, 1991 

Responsible Agency and Key Contact: South Carolina Wildlife and Marine Resources Department, Marine Resources Division, Office of Fisheries Management; Bob Low

Purpose and Brief Description: Estimate total participation by permit holders and assistants, estimate total effort (number of trips), estimate total catch, estimate effort and catch by area, update demographic and socioeconomic profiles of participants, solicit constituency opinions on management.

Geographic Scope: Coastal South Carolina

Date Initiated: $12 / 03 / 91$
Collection Frequency: One-time mail-out

Status: Ended
Date Discontinued: 12/31/91 Reason: Projected completed

Types of Data Collected/Stored: County of residence, zip code, trips/month, trips/area, number of assistants, average catch/trip, total season catch, gear characteristics, travel distance one way, direct trip expenditures, people sharing trip costs, willingness-to-pay, number in household, gross household income, age, experience, problems/conflicts in fishery, satisfaction rating, comments on management.

Description of Data Collection Methodology: One-time post-season mail-out of postage paid self-addressed letter questionnaire sent to randomly selected subsample of license holders, stratified by area of residence.

Data Storage and Access Methods: Most data not computerized, raw data discarded, raw data summaries (hand computation) filed, summary data available in project report.

Comments: Project reference: Low, R.A. 1992 (In press). Survey of the South Carolina Shrimp Baiting Fishery, 1991. S.C. Marine Resources Center, Charleston, S.C. Data Report Number 9. 31 pp.

Project Title: An Economic and Biological Evaluation of the South Carolina Pier Fishery

| Responsible Agency and Key Contact: | South Carolina Wildlife and Marine Resources <br> Department, Marine Resources Division, Office of |
| :--- | :--- |
|  | Fisheries Management; D.L. Hammond and D.M. |
|  | Cupka |

Purpose and Brief Description: Document total participation using pier tax records. Obtain species and quantity harvested and general characteristics of pier anglers.

Geographic Scope: Central and northern South Carolina

Date Initiated: 3/74

Status: Ended $\quad$ Date Discontinued: 12/74 Reason: Project completed

Types of Data Collected/Stored: Socioeconomic profile of anglers, length distributions of finfish, creel composition, CPUE by species, seasonal effort.

Description of Data Collection Methodology: Direct intercept.

Data Storage and Access Methods: Hand-tabulated original data forms. Summary tables available in project report.

Comments: D.L. Hammond and D.C. Cupka. 1977. An Economic and Biological Evaluation of the South Carolina Pier Fishery. S.C. Marine Resources Center, Charleston, S.C. Technical Report 20. 13 pp .
Project Title: $\quad$ Socio-economic Profile of South Carolina's Offshore Sport Fishermen

Responsible Agency and Key Contact: $\quad$| South Carolina Wildlife and Marine Resources |
| :--- |
| Department, Marine Resources Division, Office of |
| Fisheries Management; David Liao and David |
| Cupka |

Purpose and Brief Description: To obtain baseline information on various socio-economic characteristics of private boat, charterboat and head boat fishermen.

## Geographic Scope: Coastal South Carolina

Date Initiated: 1/01/77

Status: Ended Date Discontinued: 12/31/77 Reason: Project completed

Types of Data Collected/Stored: Income, occupation, residence, fishing experience, preferences, target species, reasons for visiting coastal area and going fishing.

Description of Data Collection Methodology: Monthly mail survey to random sample of private boat owners, telephone interview of charterboat anglers and personal interview of head boat fishermen.

Data Storage and Access Methods: Data worked up by hand calculations, not computerized. Raw data discarded. Summary data available in project report.

Comments: Project reference: Liao, D. and D. Cupka. 1979. S.C. Marine Resources Center, Charleston, S.C. Technical Report 34. 10 pp .

# Responsible Agency and Key Contact: <br> South Carolina Wildlife and Marine Resources Department, Marine Resources Division, Office of Fisheries Management; Charles Moore 


#### Abstract

Purpose and Brief Description: To obtain baseline information on recreational shellfish harvesters in South Carolina.


Geographic Scope: Coastal South Carolina

Date Initiated: 7/01/81 Collection Frequency: One-time postal card questionnaire.

Status: Ended Date Discontinued: 12/31/81 Reason: Project completed

Types of Data Collected/Stored: Effort and catch information, location, period, previous experience, willingness to pay and condition of shellfish beds data from recreational shellfish gatherers.

Description of Data Collection Methodology: One-time postal card questionnaire to subsample registered boat owners.

Data Storage and Access Methods: Data worked up by hand calculations, not computerized. Raw data discarded. Summary data available in project report.

Comments: Project reference: Moore, C.J., H. Mills, D. Cupka. 1984. Recreational Shellfish Gathering in South Carolina 1980-81. S.C. Marine Resources Center, Charleston, S.C. Technical Report 37. 8 pp .

Responsible Agency and Key Contact: $\quad$ South Carolina Wildlife and Marine Resources Department, Marine Resources Division, Office of Fisheries Management; Bob Low

Purpose and Brief Description: Provide data on effort, harvest, boat length, county of boat registration, socioeconomic characteristics in several of the most heavily utilized public shellfish grounds.

Geographic Scope: Charleston, South Carolina, metropolitan area
Date Initiated: $1 / 12 / 91 \quad$ Collection Frequency: Weekly

Status: Ended Date Discontinued: 3/18/91 Reason: Project completed

Types of Data Collected/Stored: Location of harvest, type of shellfish targeted, amount gathered, effort, number of previous trips that season, boat length, county of boat registration, county of residence, direct trip expenditures, opinion on size and quantity of shellfish available, rating of trip satisfaction.

Description of Data Collection Methodology: On-site intercept at closest public access points, tide-dependent.

Data Storage and Access Methods: _Data not computerized, raw data discarded, summary data available in report.

Comments: Project reference: Low, R. A. 1991. Survey of Recreational Shellfish harvesters in the Folly/Stono Rivers and Sullivans Island/Isle of Palms public shellfish areas, 1991 S.C. Marine Resources Center, Charleston, S.C. Unpubl. mimeo, 12 pp.

# Responsible Agency and Key Contact: <br> South Carolina Wildlife and Marine Resources Department, Marine Resources Division, Office of Fisheries Management; Bob Low 

Purpose and Brief Description: Assess impact of Santee/Cooper re-diversion project. Document catch and effort in seasonal (March-April) recreational fishery for American shad (Cooper River stock). Creel census at major access points, drop box card survey at major access point.

Geographic Scope: Tailrace Cana1, Moncks Corner, South Carolina

Date Initiated: $3 / 08 / 85$ Collection Frequency: 2-3 days/wk

Status: Ended Date Discontinued: 4/12/87 Reason: Project completed

Types of Data Collected/Stored: Trailer counts, angler counts, boat counts, species preferences, catch (number) by species, fish per angler-trip.

Description of Data Collection Methodology: Boat/angler counts at major access points, stationary creel census at principal access point, drop box survey card collection at principal access point

Data Storage and Access Methods: Data not computerized, raw data discarded, summary data available in report.

Comments: Project reference: Low, R. A. 1987. Survey of the Tailrace Canal Recreational Shad Fishery, 1985-1987. S.C. Marine Resources Center, Charleston, S.C. Unpubl. mimeo, 14 pp.

# Responsible Agency and Key Contact: 

South Carolina Wildlife and Marine Resources Department, Marine Resources Division, Office of Fisheries Management; Bob Low


#### Abstract

Purpose and Brief Description: Document participation, catch, effort, characteristics of the gigging fishery.


Geographic Scope: Beaufort, Jasper, Colleton Counties of South Carolina

Date Initiated: 4/91
Collection Frequency: Monthly

Status: Ended Date Discontinued: 11/91 Reason: Project completed

Types of Data Collected/Stored: Area of residence, monthly effort (number of trips), age group, years of experience, boat length, target species, monthly catch (number) estimate by species, average direct trip expense, disposition of catch, comments on management.

Description of Data Collection Methodology: Monthly mail-out to subsample (randomly selected) of license holders, stratified by residential category, postage paid self-addressed.

Data Storage and Access Methods: Data not computerized, raw data discarded, summary data available in report.

Comments: Project reference: Low, R. A. 1992. Survey of South Carolina Gigging Fishery, 1991. S.C. Marine Resources Center, Charleston, S.C. Unpubl. mimeo, 19 pp.

## GEORGIA

| Project Title: | Georgia Marine Recreational Fisheries Survey, 1985-89. (Georgia's <br> participation in the National Marine Fisheries Service Marine Recreational <br> Fisheries Statistics Survey (MRFSS) |
| :--- | :--- |
| Responsible Agency and Key Contact: $\quad$Georgia Department of Natural Resources, Coastal <br> Resources Division; John M. Pafford. |  |

Purpose and Brief Description: To increase data collection to improve the statistical validity of the MRFSS data base at the State level. Survey description is the same as MRFSS.

Geographic Scope: Coastal counties of Georgia
Date Initiated: 1/01/85 Collection Frequency: Daily/Weekly
Status: Ended Date Discontinued: 12/31/89

Reason: 1) Considering limited personnel and weather-related logistical problems associated with scheduling fisheries-independent studies, State was not able to meet daily schedule established by NMFS for State to proof, edit, and ship data forms. 2) Although expressing importance of MRFSS and continued State involvement, NMFS continued to decrease the number of intercept surveys it financed. 3) Delays in receiving State harvest and participation estimates from NMFS. 4) Improvement of State's ability to process and analyze fisheries data.

## Types of Data Collected/Stored:

Intercept survey: Finfish catch and weight, weight and length by species, state and county of residence, avidity level (trips per year), mode of fishing, area of fishing, hours fished, species preference.

Telephone household survey: Presence of marine anglers in household, number of anglers per household, number of fishing trips in a 2-month period, mode of fishing trip, location of each trip.

Description of Data Collection Methodology: Same survey methodology as MRFSS. State collected, proofed, edited, and shipped intercept data to NMFS for processing.

Data Storage and Access Methods: State made copies of intercept forms for State in-house processing and analyses. Intercept data forms were forwarded to NMFS with data estimates available to State in 4 to 13 months.

# Responsible Agency and Key Contact: Georgia Department of Natural Resources, Coastal Resources Division; John M. Pafford 


#### Abstract

Purpose and Brief Description: To increase data collection to improve the statistical validity at the state level.


Geographic Scope: Coastal counties of Georgia.

Date Initiated: 6/01/90
Collection Frequency: Daily/Weekly

Status: Ended Date Discontinued: 12/31/91 Reason: Limited funding, other project priorities

Types of Data Collected/Stored: Intercept survey: Finfish catch and weight, weight and length by species, state and county of residence, mode of fishing, area of fishing, hours fished, species preferences.

Description of Data Collection Methodology: Survey methodology based on MRFSS design.

Data Storage and Access Methods: Fisheries data are stored in Progress Data Base. Data are available in any format.

## FLORIDA


#### Abstract

Project Title: $\quad$ Florida Marine Recreational Fishery Statistical Data Collection - Site Description Survey

Responsible Agency and Key Contact: Florida Marine Research Institute, Department of Natural Resources; Robert McMichael

Purpose and Brief Description: To design and implement a statistical data collection program for marine recreational fisheries information compatible and comparable to existing information for commercial fisheries. This survey of saltwater fishing sites is designed to collect information on fishing site usage and characteristics.


Geographic Scope: Statewide, coastal counties

Date Initiated: 4/01/86
Collection Frequency: 8-10 coastal counties are surveyed each year.

Status: Ongoing

Types of Data Collected/Stored: Site name, county, location, latitude, longitude, fishing mode and methods, number of fishermen observed, facilities, habitat, bottom type.

Description of Data Collection Methodology: On-site surveys by biologists and technicians.

Data Storage and Access Methods: SAS (Statistical Analysis System) data sets.

Comments: Sites are surveyed periodically, and updated information is stored. Latitude and longitude are not always available. These data are used for site selection purposes for angler interviews. Recreational Fishing Site Access Maps for eight counties have been produced for public distribution from these data. This program receives funding through the Sport Fish Restoration Program of the U.S. Fish and Wildlife Service.


#### Abstract

Project Title: $\quad$ Florida Marine Recreational Fishery Statistical Data Collection - Angler Interviews

Responsible Agency and Key Contact:<br>Florida Marine Research Institute, Department of Natural Resources; Robert McMichael

Purpose and Brief Description: To design and implement a statistical data collection program for marine recreational fisheries information compatible and comparable to existing information for commercial fisheries. This survey of saltwater anglers is designed to collect information on fishing site usage, fishing methods, bait usage, and qualitative catch information.


Geographic Scope: Statewide, coastal counties

Date Initiated: 4/01/86
Collection Frequency: Increasing in areas where FMRI field labs are located.

Status: Ongoing

## Types of Data Collected/Stored:

Site Interview Database: Date, site code, time, location, site type, fishing modes at side, number of anglers observed, number of boat trailers, tidal condition, lunar quarter, atmospheric condition (cloud cover, temperature, wind speed).

Angler Interview Database: Date, side code, time, fishing mode, type of person interviewed, fishing method, time spent fishing and expected to fish, number of weekend days and weekdays that site was used by the person, area fished, bait usage, qualitative catch information, party size, residency status, interview status.

Description of Data Collection Methodology: On-site surveys by biologists and technicians.
Data Storage and Access Methods: SAS (Statistical Analysis System) data sets.
Comments: Anglers are interviewed at sites and modes selected from site description database. This program receives funding through the Sport Fish Restoration Program of the U.S. Fish and Wildlife Service.

# Responsible Agency and Key Contact: Florida Marine Research Institute, Department of Natural Resources; Frank S. Kennedy, Jr. 

Purpose and Brief Description: To maintain a $10 \%$ sample of names and addresses of Florida recreational saltwater fishing license holders.

Geographic Scope: Statewide (also includes non-residents)
Date Initiated: $12 / 01 / 90$
Collection Frequency: 10\% of individual licenses, all vessel and pier licenses

Status: Ongoing

## Types of Data Collected/Stored:

Individual saltwater fishing licenses: Name, mailing address, telephone number, county of license purchase, fiscal year.

Vessel saltwater fishing licenses: Name, mailing address, telephone number, county of license purchase, fiscal year, vessel length, vessel registration number, number of passengers (1-2, 3-10, $11+$ ).

Pier saltwater fishing licenses: Name, location, telephone number, county of license purchase, fiscal year.

Spiny lobster stamps, snook stamps: Name, mailing address, telephone number, county of license purchase, fiscal year, stamp type.

Description of Data Collection Methodology: Applicants purchase saltwater fishing licenses and stamps from county tax collector offices or designated agents. Licenses are renewable annually. Individual licenses and stamps are printed 20 to a sheet; there are "survey" cards for the first and eleventh license or stamp on each sheet (for a $10 \%$ sample). Applicants supply name, address, and telephone number on the survey cards; cards are mailed to FMRI by the tax agents. Copies of all vessel and pier licenses are sent to FMRI.

Data Storage and Access Methods: Survey cards are keypunched by a contractor; vessel and pier licenses are keypunched by FMRI staff. Data are in text and SAS (Statistical Analysis System) data files.

Comments: Some names, addresses, and telephone numbers from the survey cards supplied by the license holders are illegible, invalid, or not supplied.

# Responsible Agency and Key Contact: Florida Game and Fresh Water Fish Commission; Charles Mesing 

Purpose and Brief Description: To evaluate the fisheries and aquatic habitats in the Apalachicola River Watershed and to develop enhancement techniques for perpetuating the fisheries.

Geographic Scope: Apalachicola-Chattahoochee-Flint River System

Date Initiated: $1 / 01 / 85$ Collection Frequency: Annual

Status: Ongoing

Types of Data Collected/Stored:
General Fish Population Monitoring: Species list, habitat, total number and weight of each species, total length and weight of sport fish.

Striped Bass Restoration: Adult brood fish for hatchery production of Gulf striped bass. Striped bass brood fish data include total length, weight, age and mtDNA analysis. CPUE of young of the year (YOY) striped bass and Morone hybrids, total length, weight, age and location. Sport fish harvest, success rates and fisherman effort for sport fish with emphasis on Morone spp.

Description of Data Collection Methodology: General Fish Population and Striped Bass Restoration: Night electrofishing samples ( 10 minute/sample) on sand habitats for YOY Morone in October and November. In reservoirs, three to five experimental gill nets ( 50 meters $\times 2$ meters) are set during October and November to catch striped bass and hybrids in targeted size classes. Peak season roving creel surveys are used to estimate sport fish harvest, angler effort and success rates for sport fish in the upper and lower six miles of the Apalachicola River. Harvested striped bass and hybrids are measured and otoliths are removed for age analysis.

Data Storage and Access Methods: Personal computers are used to store data on lotus spread sheets with backup copies on floppy disks. Data are analyzed and summarized in Florida Game and Fresh Water Fish Commission annual reports available upon request.


#### Abstract

ALABAMA

Project Title: $\quad$ Recreational Creel Survey Responsible Agency and Key Contact: $\quad$| Alabama Department of Conservation and Natural |
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|  |
| Resources, Marine Resources Division; Henry G. |
| Lazauski |

Purpose and Brief Description: To collect recreational creel survey information on finfish during daylight hours.

Geographic Scope: Coastal marine and estuarine waters of Alabama

Date Initiated: 10/01/84 Collection Frequency: Monthly

Status: Ended Date Discontinued: 9/30/87 Reason: Lack of funding

Types of Data Collected/Stored: Catch; effort; lengths; spatial, economic, and sociological data.

Description of Data Collection Methodology: A nonuniform probability sampling design was used to provide quarterly and annual estimates of catch, effort, and CPUE down to the species level in an intercept collection format. The fishing modes surveyed were pay piers, private boats, charter boats, and wade/bank.

Data Storage and Access Methods: Hard copy only of annual reports.


## MISSISSIPPI

Project Title: $\quad$ Creel Survey of Mississippi Sound and Adjacent Waters

Responsible Agency and Key Contact: Mississippi Dept. of Wildlife, Fisheries and Parks, Bureau of Marine Resources; Tom Van Devender

Purpose and Brief Description: To collect recreational catch and effort and biological data on finfish from Mississippi's marine waters.

Geographic Scope: Mississippi Sound and adjacent Gulf waters.

Date Initiated: 6/01/87 Collection Frequency: Daily/weekly

## Status: Ongoing

Types of Data Collected/Stored: Finfish species, number, lengths and weights; fishing location, number of anglers, gear, bait and time fishing for each fishing party. Additionally, preference on instituting a saltwater fishing license asked, if fished on artificial reef. Demographic profile on anglers.

Description of Data Collection Methodology: Creel clerks interviewed anglers at the completion of fishing trips at stratified, randomly-selected, boat access sites. In 1991, sites expanded to include piers/jetties and wade fishing.

Data Storage and Access Methods: Data stored as dBase IV file and raw data sheets. Analyses performed by SAS and summaries available in annual reports.

Project Title: Data Collection of Recreational Oyster Harvest<br>Responsible Agency and Key Contact: Mississippi Dept. of Wildlife, Fisheries and Parks, Bureau of Marine Resources; John Cirino

Purpose and Brief Description: To maintain accurate account of the number of sacks of oysters harvested off a given area or specific reef.

Geographic Scope: Mississippi marine waters

Date Initiated: $10 / 01 / 89$
Collection Frequency:

Status: Ongoing

Types of Data Collected/Stored: Number of sacks harvested, gear used for harvest, harvest area or reef, number of fishermen.

Description of Data Collection Methodology: Fishermen are required to check in at specified stations to purchase tags for marking oyster sacks. Fishermen are also required to check out at the end of the day's fishing for verification of sacks retained and other specified harvest information.

Data Storage and Access Methods: Data is stored and analyzed with dBase IV.

## LOUISIANA

Project Title: $\quad$ Survey of the Marine Recreational Fishery of Lower Barataria Bay, Louisiana, 1975-1977<br>Responsible Agency and Key Contact: Louisiana Department of Wildlife and Fisheries; Joseph Shepard

# Purpose and Brief Description: To determine the species composition and seasonal abundance of the catch; effort, harvest and success rates; and the types of baits used by anglers. 

Geographic Scope: Lower Barataria Bay, Louisiana

Date Initiated: 7/75 Collection Frequency: Continual

Status: Ended Date Discontinued: 3/77 Reason: Project completed

Types of Data Collected/Stored: Number in party, time spent fishing, bait type, and total number and weight of each species caught.

Description of Data Collection Methodology: Roving clerk creel survey was used. Sampling was stratified according to day-type (weekend-holiday/weekday) and time of day (A.M./P.M.) and sampling effort randomly allocated according to assigned probabilities. Equal sampling probability was given to each day-type, whereas morning and afternoon sampling effort was allocated in a 3:1 ratio. Five days were sampled each week for the first eight weeks; thereafter two days per week were sampled. Length of each creel was one-half the number of daylight hours. After randomly selecting direction of travel, the interviewer traveled through the sample area counting the total number of fishermen to derive an "instantaneous count" for fishing pressure estimates.

Data Storage and Access Methods: The data are stored on the mainframe in ASCII format.

Responsible Agency and Key Contact: Louisiana Department of Wildlife and Fisheries; Joseph Shepard


#### Abstract

Purpose and Brief Description: To determine the preferences, expenditures, and demographics of recreational saltwater anglers in Louisiana. Data collected in this study should facilitate management recommendations relative to creel limits, size limits, total population and harvest, as well as special considerations for those species which are most often targeted and retained by recreational fishermen.


Geographic Scope: Louisiana coastal waters

Date Initiated: 1/1/84
Collection Frequency: Continual

Status: Ended Date Discontinued: 12/31/84 Reason: Project completed

Types of Data Collected/Stored: Boat registration number, trip time, trip type (i.e. private or charter), fishing location (marsh, large lake/bay, pass, beach, open Gulf, other), gear type (rod and reel, cane pole, handline, trotline, net), length of net, if present and mesh size, species targeted at start of trip, and number landed and number retained of each species. Total length in millimeters of 10 fish of each species were measured by the survey crew.

Description of Data Collection Methodology: Survey sites were located at both public and private boat launches used by marine recreational anglers. Access points were ranked on a scale from 1-10 dependent on usage and then grouped into level of high, medium or low usage. Effort was established at an average rate of two days per week for each area. Each day included a morning ( 0900 to 1300 ) and afternoon ( 1400 to 1800 ) sample. The sampling schedule was designed under a stratified random sampling plan using proportional allocation between strata. The types of strata were day type and type of boat launch.

Data Storage and Access Methods: The data are stored on the mainframe in ASCII format.


#### Abstract

Project Title: $\quad$ Survey of Louisiana Recreational Anglers, 1990 and 1991

Responsible Agency and Key Contact: Louisiana Department of Wildlife and Fisheries; Joseph Shepard

Purpose and Brief Description: To determine the preferences, expenditures, and demographics of sport anglers in Louisiana. Data generated by this project will be an important part of programs developed by the LDWF for management and conservation of Louisiana's fisheries resources.


Geographic Scope: Louisiana coastal waters

Date Initiated: $1 / 90 \quad$ Collection Frequency: Continual

Status: Ongoing

Types of Data Collected/Stored: Demographics, participation, attitudes, motivations, species preferences, level of satisfaction, expenditures, and management preferences.

Description of Data Collection Methodology: Mail Survey.

Data Storage and Access Methods: The data are stored on the mainframe in ASCII format.

## TEXAS

# Project Title: $\quad$ Monitoring of Coastal Finfish Resources for Sportfish Management (Boatbased) 

Responsible Agency and Key Contact: Texas Parks and Wildlife Department, Coastal Fisheries Branch; Lee Green

Purpose and Brief Description: To determine the species composition, size, number and catch per unit effort of recreationally important sportfish landed from bay and Gulf waters of Texas by private-boat, party-boat, and headboat (bay and Gulf) fishermen.

Geographic Scope: Texas coastal waters

| Date Initiated: | $6 / 74-$ private boats <br> $5 / 80-$ Gulf headboats <br> $5 / 83-$ party boats | Collection Frequency: Continual |
| :--- | :--- | :--- |
|  | $5 / 83-$ bay headboats |  |
| Status: Ongoing | private boats <br> party boats | Date discontinued: |

Types of Data Collected/Stored: Sportboat activity (e.g., sportfishing, sport shrimping, sailing), trip length, number in party, county of residence, area fished (i.e., major bay, minor bay, Territorial Sea, Exclusive Economic Zone), gear used, bait type, number of each species landed, lengths of subsample of each species landed, species sought, and during 1987-1991, several questions designed to determine motivations, satisfactions and economic values.

Description of Data Collection Methodology: Boat ramps and wet slip areas are roved to determine relative fishing pressure; boat trailers and empty wet slips are counted and adjusted for non-fishing activity; the probability that a site will be surveyed is proportional to its relative pressure; in each major bay system three times as many surveys are conducted during high-use season (May 15-November 20) as during low-use season (November 21-May 14); approximately twice as many surveys are conducted on weekdays as weekends; all parties completing a trip between 1000 and 1800 are interviewed.

Data Storage and Access Methods: Mainframe computer system for storage and access. Original data sheets at individual field stations along the coast.
Project Title: Monitoring of Coastal Finfish Resources for Sportfish Management (Shore-based)

Responsible Agency and Key Contact: Texas Parks and Wildlife Department, Coastal Fisheries Branch; Lee Green


#### Abstract

Purpose and Brief Description: To determine the species composition, size, number and catch per unit effort of recreationally important sportfish landed at wade/bank and lighted-pier sites.


## Geographic Scope: Texas coastal waters

Date Initiated: 1974-75 Collection Frequency: Continual

Status: Inactive

Types of Data Collected/Stored: Trip length, number in party, county of residence, area fished (i.e., major bay, minor bay, Territorial Sea), gear used, bait type, number of each species landed, lengths of subsample of each species landed, species sought, and during 1990-1991, several questions designed to determine motivations, satisfactions and economic values.

Description of Data Collection Methodology: Methodology varied. Generally, wadebank and lighted-pier sites are roved to determine relative fishing pressure; sites are chosen at random but selection is weighted according to pressure obtained from rove counts; all parties completing a wade/bank trip between 1000 and 1800 or a lighted-pier trip between 2000 and 0400 are interviewed.

Data Storage and Access Methods: Mainframe computer system for storage and access. Original data sheets at individual field stations along the coast.

Responsible Agency and Key Contact: Texas Parks and Wildlife Department, Coastal Fisheries Branch; Lee Green


#### Abstract

Purpose and Brief Description: To determine characteristics and significance of the gig fishery; estimate effort and catch rates to determine total landings; collect social and economic information.


Geographic Scope: Texas coastal waters

Date Initiated: 7/15/91
Collection Frequency: Continual

Status: Ended Date Discontinued: 12/15/91

Types of Data Collected/Stored: Trip length, number in party, county of residence, area fished (i.e., major bay, minor bay), gear used, bait type, number of each species landed, lengths of subsample of each species landed, type of fisherman (sport or commercial) trip satisfaction, trip cost, avidity, opinion on current size and bag limits on flounder.

Description of Data Collection Methodology: Wade/bank and boat access sites are roved to determine relative fishing pressure. Sites are surveyed at night in proportion to relative pressures determined from roves. On-site, trip-ending interviews are performed to estimate catch rates. Roves are conducted at randomly selected times during each survey night to estimate effort.

Data Storage and Access Methods: Mainframe computer system for storage and access. Original data sheets at individual field stations along the coast.
Project Title: Attitude and Opinion Surveys
Responsible Agency and Key Contact: Texas Parks and Wildlife Department - Robin Riechers; Texas A\&M University - Robert Ditton
Purpose and Brief Description: To determine social and economic characteristics of Texasanglers.
Geographic Scope: Resident Anglers in Texas
Date Initiated: 1986 Collection Frequency: Annual
Status: Ongoing
Types of Data Collected/Stored: Demographics, participation, attitudes, motivations, speciespreferences, level of satisfaction, expenditures, and management preferences.
Description of Data Collection Methodology: Mail Survey
Data Storage and Access Methods: Stored as ASCII data sets
Comments: There are three saltwater surveys and two surveys containing both saltwater andfreshwater information. The general survey is now scheduled to repeat on 3-year intervals.

## PUERTO RICO

\author{

Project Title: $\quad$ Marine Sport Fisheries Creel Survey <br> | Responsible Agency and Key Contact: | Puerto Rico Department of Natural Resources; José |
| :--- | :--- |
|  | M. Berrios (Project Leader) |

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Purpose and Brief Description: To evaluate the status of marine recreational fishing in Puerto Rico, based on the analysis of catch per unit effort data and estimates of harvest and other fishery descriptors.

Geographic Scope: Puerto Rico, island-wide.

Date Initiated: 7/01/85

Collection Frequency:
Big game fishing: all billfish tournaments between August 1985 to November 1987.
Shorefishing: 12 sampling rounds per month which were distributed into 6 sampling units ( 6 weekdays, 6 weekends).

Status: Ended Date Discontinued: 6/30/89 Reason: Project completed

## Types of Data Collected/Stored:

Big game fishing: time of strike, time of boarding, type of bait, location of captured, size of the boat, weight, length and sex of fish captured.

Shorefishing: CPUE and species composition.

## Description of Data Collection Methodology:

Big game fishing: fishermen interviewed.
Shorefishing: roving creel survey (sampling divided into one-month time blocks and each month into sampling units of 6.5 hrs ; 0600-1230, 1231-1900).

Data Storage and Access Methods: Visicalc and Apple Works

# Project Title: Developing Strategies to Enhance Charter Boat Fishing Operations in Puerto Rico and the U.S. Virgin Islands. (Award number NA89WC-HSKO40) 

## Responsible Agency and Key Contact: Sea Grant College Program; Ruperto ChaparroSerrano

Purpose and Brief Description: To assist charter boat operators in the study area to become better integrated into existing coastal tourism systems and to develop and implement marketing strategies to better manage fishing demand.

Geographic Scope: Puerto Rico and U.S. Virgin Islands.

Date Initiated: 2/06/89
Collection Frequency:

Status: Ended Date Discontinued: 6/30/92 Reason: Project completed

Types of Data Collected/Stored: Information collected was on fishery methods used by recreational fishermen and on socio-economics.

Description of Data Collection Methodology: A variety of research techniques was used to sample charter boat operators and their customers in the study region. Tourism officials, tourism promotion organizations, and local chambers of commerce were interviewed regarding their views on the importance of the charter boat industry and to what extent they promote it. A mail questionnaire was sent to a convenient sample of charter boat customers to better understand background characteristics of anglers, their level of fishing experience, and factors affecting their decision to go sport fishing, select a specific port and select a boat or captain.

Data Storage and Access Methods: Database is stored on a personal computer in IBM format. The data are stored in the Sea Grant College Program office in Mayaguez. Contact Ruperto Chaparro to access the data.


#### Abstract

Project Title: $\quad$ Developing Marine Recreational Fishing in Puerto Rico and the United States Virgin Islands (NOAA/NMFS S-K Grant Number NA86WC-H06108)

Responsible Agency and Key Contact: Sea Grant College Program; Ruperto ChaparroSerrano

Purpose and Brief Description: This report synthesizes, interprets, and presents information on three components of the marine recreational fishing (MRF) industry in Puerto Rico and the U.S. Virgin Islands: 1) the behaviors and preferences of native and tourist recreational fishermen; 2) the ways in which small-scale commercial fishermen may be incorporated into the MRF industry, particularly in the context of fishing charters; and 3) the attitudes of U.S. travel agents toward Puerto Rico and the U.S. Virgin Islands in relation to other islands of the Caribbean as MRF destinations.


## Geographic Scope: Puerto Rico and the U.S. Virgin Islands

Date Initiated: $1 / 01 / 87$ Collection Frequency:

Status: Ended $\quad$ Date Discontinued: 3/31/88

Types of Data Collected/Stored: 1) A report on the status and potential of MRF development for local administrators, MAS personnel, tourist boards, and NMFS personnel; 2) a brochure that gives Puerto Rican small-scale fishermen ideas about ways in which they can enter the MRF industry; 3) a brochure, based on information collected on the islands, to educate travel agents regarding the MRF opportunities for tourists in Puerto Rico and the U.S. Virgin Islands.

Description of Data Collection Methodology: Recreational fishermen, charterboat owners, tourism officials, travel agents, and commercial fishermen were interviewed in the field.

Data Storage and Access Methods: Database is stored on a personal computer in IBM format. The data are stored in the Sea Grant College Program office in Mayaguez. Contact Ruperto Chaparro to access the data.

Project Title: $\quad$| Assessment of Access and Infrastructure Needs of Puerto Rico and the |
| :--- |
| United States Virgin Islands in Order to Support Increased Marine |
| Recreational Fishing (NOAA/NMFS Grant Number NA86WC-H-06109) |

Responsible Agency and Key Contact: | Sea Grant College Program; Ruperto Chaparro- |
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| Serrano |

Purpose and Brief Description: The main objective of this project is to satisfy the need for information of marine recreational fishery managers, the marine recreational fishing (MRF)/tourism industry, and the MRF constituency through the evaluation of access and infrastructure needs in Puerto Rico and the U.S. Virgin Islands and the output of an inventory data base of MRF facilities and operations.

Geographic Scope: Puerto Rico and the U.S. Virgin Islands

Date Initiated: 1986 Collection Frequency:

Status: Ended Date Discontinued: 5/02/88

Types of Data Collected/Stored: This project gathered information on the infrastructure (facilities) and services serving MRF in Puerto Rico and the U.S. Virgin Islands. Data included location, type of structure, availability of ramps and piers, services, people in charge, usage patterns, development plans, sponsorship of activities, jobs generated, and dimensions of facilities, among others.

Description of Data Collection Methodology: Information was gathered through field observations, on-site assessments, structured interviews with owners and managers, unstructured interviews with government officials, users of facilities and fishery resources, and members of organized groups.

Data Storage and Access Methods: Database is stored on a personal computer in IBM format. The data are stored in the Sea Grant College Program office in Mayaguez. Contact Ruperto Chaparro to access the data.

## U.S. VIRGIN ISLANDS

Project Title: $\quad$ Recreational Port Sampling - U.S. Virgin Islands. March 1, 1981 September 30, 1985<br>Responsible Agency and Key Contact: U.S. Virgin Islands Department of Planning and Natural Resources, Division of Fish and Wildlife; Ann Seiler, Director<br>\title{ Purpose and Brief Description: To determine the harvest and effort for the various marine sportfishes in the U.S. Virgin Islands. }<br>Geographic Scope: U.S. Virgin Islands<br>Date Initiated: 3/01/81 Collection Frequency: Monthly<br>Status: Ended Date Discontinued: 9/30/85 Reason: Project completed<br>Types of Data Collected/Stored: Catch/effort data based on vessel size categories, species composition, shore/pier fishing, marlin data, seasonality of pelagics.<br>Description of Data Collection Methodology: Personal contact interviews, telephone interviews, tournament data, biostatistical data.

Data Storage and Access Methods: At present, hard copy only.


#### Abstract

Project Title: $\quad$ Recreational Port Sampling - St. Croix, U.S. Virgin Islands. October 1, 1985 - September 30, 1990

Responsible Agency and Key Contact: U.S. Virgin Islands Department of Planning and Natural Resources, Division of Fish and Wildlife; Ann Seiler, Director

Purpose and Brief Description: To summarize recreational finfish catch/effort data for the period October 1, 1985 - September 30, 1990 on St. Croix.

Geographic Scope: St. Croix, U.S. Virgin Islands

Date Initiated: 10/01/85 Collection Frequency: Monthly

Status: Ended Date Discontinued: 9/30/90 Reason: Project completed

Types of Data Collected/Stored: Recreational fishing catch/effort data, tournament catch/effort data, data stratified by vessel size

Description of Data Collection Methodology: Personal contact interviews with recreational fishermen for catch/effort data. Biostatistical data collected at fishing tournaments.


Data Storage and Access Methods: At present, hard copy only.
Project Title: $\quad$ Recreational Port Sampling - St. Croix, 1991-1995
Responsible Agency and Key Contact: U.S. Virgin Islands Department of Planning and Natural Resources, Division of Fish and Wildlife; Ann Seiler, Director
Purpose and Brief Description: To plan, prepare, and implement a recreational port samplingprogram.
Geographic Scope: St. Croix, U.S. Virgin Islands
Date Initiated: 10/01/91 Collection Frequency: Monthly
Status: Ongoing
Types of Data Collected/Stored: Catch/effort data for recreational sportfishing.
Description of Data Collection Methodology: Personal contact interviews and phone surveysfor charter vessels, private vessels, and shore/pier fishermen.
Data Storage and Access Methods: At present, hard copy only.
Project Title: $\quad$ Recreational Port Sampling - St. Thomas
Responsible Agency and Key Contact: U.S. Virgin Islands Department of Planning and Natural Resources, Division of Fish and Wildlife; Ann Seiler, Director
Purpose and Brief Description: To plan, prepare, and implement a recreational port sampling program.
Geographic Scope: St. Thomas, U.S. Virgin Islands
Date Initiated: 10/01/91
Collection Frequency: Weekly
Status: Ongoing
Types of Data Collected/Stored: Catch/effort data for recreational sport fishing.
Description of Data Collection Methodology: Personal interviews, charter and private vessellogs, tournaments.
Data Storage and Access Methods: Diskette on Paradox

Responsible Agency and Key Contact: $\quad$| U.S. Virgin Islands Department of Planning and |
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| Natural Resources, Division of Fish and Wildlife; |
| Ann Seiler, Director |

Purpose and Brief Description: To evaluate the efficiency of telephone surveys as a sampling technique for obtaining reliable fisheries data, and to collect fisheries data for the recreational non-charter boat fishery.

Geographic Scope: U.S. Virgin Islands

Date Initiated: 7/86
Collection Frequency: Twice weekly

Status: Ended Date Discontinued: 9/30/86 Reason: Project completed

Types of Data Collected/Stored: Interview techniques, fishing effort, fishing harvest.

Description of Data Collection Methodology: Standardized phone survey.

Data Storage and Access Methods: Hard copy

# Project Title: $\quad$ Surface Deepwater Fish Aggregating Devices (FADs) - St. Croix <br> <div class="inline-tabular"><table id="tabular" data-type="subtable">
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<td style="text-align: left; border-bottom: none !important; border-top: none !important; width: auto; vertical-align: middle; ">| U.S. Virgin Islands Department of Planning and |
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Purpose and Brief Description: To design and test the effectiveness of deepwater FADs.

Geographic Scope: St. Croix, U.S. Virgin Islands

Date Initiated: 10/01/86 Collection Frequency: Monthly

Status: Ended Date Discontinued: 9/30/87 Reason: Project completed

Types of Data Collected/Stored: FAD design, FAD deployment techniques, catch/effort data to determine FAD effectiveness.

Description of Data Collection Methodology: Use of a standardized trolling scheme to determine FAD effectiveness based on strikes per unit effort (SPUE) and catch per unit effort (CPUE) in control and study areas; cost analysis for FAD design; species composition of catch; port sampling of vessels fishing around FADs to determine FAD effectiveness in attracting pelagic fish species.

Data Storage and Access Methods: At present, hard copy only.

# Responsible Agency and Key Contact: U.S. Virgin Islands Department of Planning and Natural Resources, Division of Fish and Wildlife; Ann Seiler, Director 

Purpose and Brief Description: To design, construct, deploy and conduct sampling program of two models of subsurface FADs and one surface/subsurface model for deepwater evaluation, and to design and construct two inexpensive surface FAD models.

Geographic Scope: U.S. Virgin Islands - St. Thomas, St. John

Date Initiated: 10/01/86
Collection Frequency: Biweekly

Status: Ended Date Discontinued: 9/30/89 Reason: Project completed

Types of Data Collected/Stored: FAD design, deployment techniques, catch/effort data.

Description of Data Collection Methodology: Use of standardized trolling scheme to determine CPUE and SPUE (catch/unit effort and strike/unit effort); cost analysis for design; species composition; port sampling of vessels using FADs.

Data Storage and Access Methods: LOTUS and hard copy

## Project Title: ICCAT Billfish Sampling

# Responsible Agency and Key Contact: U.S. Virgin Islands Department of Planning and Natural Resources, Division of Fish and Wildlife; Ann Seiler, Director 

Purpose and Brief Description: To determine billfish data summaries for 1991 season.

Geographic Scope: U.S. Virgin Islands - St. Thomas, St. John

Date Initiated: 6/91
Collection Frequency: Daily

Status: Ended Date Discontinued: 9/30/91 Reason: Project completed

Types of Data Collected/Stored: Date, boat, hours fished, area, blue marlin catch/loss ratio, species, time of hookup, bait type, number of hooks, result of strike, weight, hook in/out, fight duration, line test.

Description of Data Collection Methodology: Use of standardized port sampling methods through interviews.

Data Storage and Access Methods: Paradox and hard copy

# Responsible Agency and Key Contact: U.S. Virgin Islands Department of Planning and Natural Resources, Division of Fish and Wildlife; Ann Seiler, Director 

Purpose and Brief Description: To study the seasonality and feeding habits of tuna species and to develop recreational live-bait techniques to harvest yellowfin tuna.

Geographic Scope: St. Croix, U.S. Virgin Islands

Date Initiated: 5/91
Collection Frequency: Monthly

## Status: Ongoing

Types of Data Collected/Stored: Seasonality of tuna species; identification and quantification of food organisms ingested by tunas; catch/effort data in the development of recreational fishing techniques for yellowfin tuna.

Description of Data Collection Methodology: Personal contact interviews to obtain catch/effort data on tuna species; monthly sampling trips to catch small tuna species for allometric measurements, stomach content analysis, sex ratio; monthly sampling trips to catch yellowfin tuna using live scombrids as bait; allometric measurements, stomach content analysis of yellowfin tuna caught.

Data Storage and Access Methods: At present, hard copy only.

Project Title: | Assessment of the Exocoetidae (Flyingfish) and Belonidae (Needlefish) |
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| Resources |

Responsible Agency and Key Contact: $\quad$| U.S. Virgin Islands Department of Planning and |
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| Natural Resources, Division of Fish and Wildlife; |
| Ann Seiler, Director |

Purpose and Brief Description: To study the biology of flyingfish and needlefish in relation to their importance as baitfish resources for pelagic sport fish.

Geographic Scope: St. Croix, U.S. Virgin Islands

Date Initiated: 6/14/91
Collection Frequency: Monthly

Status: Ongoing

Types of Data Collected/Stored: Seasonality, abundance, size distribution, food habits, reproductive conditions, predator/prey relationship.

Description of Data Collection Methodology: Visual census surveys conducted monthly to determine abundance and species composition; monthly sampling trips to obtain individuals for biostatistical measurements, stomach content analysis and reproductive condition; personal contact interviews with recreational sport fishermen to obtain catch data on pelagic fishes; stomach content analysis of pelagic fish to identify and quantify material ingested.

Data Storage and Access Methods: At present, hard copy only.

## GULF STATES MARINE FISHERIES COMMISSION

Project Title: A Survey of Recreational Shrimpers in the Bay and Sound Systems of the Gulf Coast<br>Responsible Agency and Key Contact: NMFS, Fisheries Statistics Division; John Witzig (The survey was conducted by Human Sciences Research, Inc., under Contract No. 000-003 from the Gulf States Marine Fisheries Commission)

Purpose and Brief Description: The objective of the survey was to collect data on the effort of recreational shrimpers and on their inshore catch by species and size composition. To accomplish this objective, 3,866 interviews were conducted with recreational shrimpers as an add-on to the on-site intercept portion of the NMFS National Survey of Marine Recreational Fishermen for finfish.

Geographic Scope: Gulf Coast, Texas through Florida (although no interviews were completed successfully in Florida)

Date Initiated: 5/79 Collection Frequency: Continuous for duration of study

Status: Ended Date Discontinued: 10/31/79 Reason: Project completed

## Types of Data Collected/Stored:

Administrative data: Date, time, place, and status of interview.
Dual-frame methodological information needed to expand the data: Fishing mode, fishing location, primary gear, county and state of residence, home phone ownership, number of fishing trips.

Socioeconomic data: Age and sex of fishermen, distance traveled, dollars spent.

Effort data: Hours with gear in water, number of gear used simultaneously.

Catch data: Intended catch, actual catch not kept (species, disposition, weight, heads on or off, location), actual catch kept (species, weight, count per pound, heads on or off, location).

Sales data: Recreational sales, commercial sales.

Quality control data: Name and telephone number or address of fishermen for verification of interview.

Computed values: Such as, frequencies of variables for entire survey and by state; state averages for expenditures, hours shrimping, and avidity.

Description of Data Collection Methodology: The methodology consisted of an intercept survey conducted by trained interviewers at various fishing access sites. The interview procedures were patterned after those used in the NMFS finfishing survey. Questionnaires were completed for each recreational shrimper interviewed, with emphasis on private boat trawlers. The survey was essentially divided into two phases because of substantial procedural modifications made midway through the study. Phase I was conducted from mid-May to August 1, during the brown shrimp season; Phase II from mid-August through October, during the white shrimp season.

Data Storage and Access Methods: The present depository of the data is uncertain. The data may be on tape at the NMFS Fisheries Statistics Division. Contact Dr. John Witzig.

Comments: Complete results are presented in: G.L. Brown, R. Gurskey, R.A. Hitlin, J.D. Hempstead, and P. Hancuff. February 1980. A Survey of Recreational Shrimpers in the Bay and Sound Systems of the Gulf Coast. HSR-RR-80/4-Prn. Prepared for GSMFC. 156 pp.


[^0]:    Status: Ongoing

