

## **ATTACHMENT J.1.1.**

### **STATEMENT OF WORK**

#### **INTERCEPT PORTION OF THE NATIONAL MARINE RECREATIONAL FISHERY STATISTICS SURVEY**

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**Attachment J.1.1. Statement of Work**

**Statement of Work**

**1.0 Background**

The National Oceanic and Atmospheric Administration, National Marine Fisheries Service (NMFS) is required to conduct a survey of marine recreational anglers, gathering information on (1) their participation, fishing effort, and catch in marine recreational fishing, and (2) their demographic, social, and economic characteristics.

Until the 1970's, it was thought that commercial fisheries took the greater part of the total marine fishery catch in the waters of the United States. However most species of fish in estuarine and inshore areas, as well as many in open waters, are harvested jointly by recreational and commercial fishermen. Catches by the marine recreational fishery are a significant portion of the total landings of many marine species. Passage of the Magnuson Fishery Conservation and Management Act (MFCMA, 16 USC 1801) in 1976, mandated collection of data for both the commercial and recreational marine fisheries. Catch and effort data for marine recreational fisheries have been collected through the Marine Recreational Fishery Statistics Survey (MRFSS) since 1979 and socio-economic data have been collected since 1987.

Catch, effort, and participation statistics are fundamental for assessing the influence of fishing on any stock of fish. The quantities taken, the fishing effort, and the seasonal and geographical distribution of the catch and effort are required for the development of rational management policies and plans. Continuous monitoring of catch, effort, and participation is needed to monitor trends, to evaluate the impacts of management regulations, and to project what impacts various management scenarios will have on a fishery.

Fishery managers are required by law to report the economic consequences of their decisions regarding the allocations of limited fish resources between commercial and recreational fishing sectors. High quality economic data are needed to evaluate the economic claims of constituents and to resolve potential political conflicts between the commercial and recreational fishing constituents as they compete for limited fish resources. Social and economic data are used to provide descriptive and behavioral information on marine recreational fishing participants; provide estimates of the value of important recreational fisheries; analyze fisheries management decisions regarding allocation, changes in management strategies, or changes in factors that affect catch rates and/or access to marine recreational species for fishing sites; estimate the contribution of recreational fisheries to regional economies; and estimate the impact of fisheries regulations on regional economies. In addition to the need for data on recreational anglers, fisheries management requires cost-earnings data from the charter boat fleet.



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Accurate, up-to-date catch, effort and socio-economic statistics collected over the range of a given fishery can be combined with information collected by associated biological studies to provide conservation agencies with the information necessary to manage the fishery for optimum yield. Recreational fisheries data are essential for NMFS, the Regional Fishery Management Councils, the Interstate Fisheries Commissions, State conservation agencies, recreational fishing industries, and others involved in the management and productivity of marine fisheries.

The National Marine Fisheries Service is charged with administering a program of research and services relating to the ocean and inland waters of the United States. Collecting statistics on marine recreational fisheries is authorized by:

1. Section 5(a)(4) of the Fish and Wildlife Act of 1956 (16 USC 742), which provides for the collection and dissemination of statistics on commercial and sport fishing;
2. Migratory Game Fish Study Act of 1959 (16 USC 760(e)), which provides for a continuing study of migratory marine fishes, including the effects of fishing on the species.
3. Sections 303 and 304(e) of the MFCMA, (Public Law 94-265), and the re-authorized and amended Magnuson-Stevens Fishery Conservation and Management Act of 1996 (MFCMA), which require the collection of statistics for fishery conservation and management.
4. Sections 802 and 804 of the Atlantic Coastal Fisheries Cooperative Management Act, which requires NMFS to develop and implement a program to support the Atlantic states and the Atlantic States Interstate Commission interstate fishery management efforts, including collection, management and analysis of fisheries data.

## **2.0 History of the Marine Recreational Fishery Statistics Survey (MRFSS)**

Comprehensive collections of the effort and catch data needed for accurate and precise estimations of recreational fishery catches of marine fishes are difficult and expensive. Recreational anglers are dispersed along the coast, fishing from boats, piers, jetties, docks and the open beach. They fish during the day and night throughout the year. The few coastal states collecting catch statistics have used a variety of methods, but have usually covered only a part of a state or selected segments of a fishery. NMFS conducted Salt Water Angling Surveys (SWAS) in 1960, 1965, and 1970. These surveys were supplements to the Bureau of Sport Fisheries and Wildlife's National Survey of Hunting and Fishing. Prior to 1979 the SWAS's were the only surveys that produced marine recreational catch and participation statistics by species for the entire United States.

The data collected in the SWAS were inadequate to satisfy requirements for information on recreational harvests of marine fishes. The SWAS did not sufficiently provide the area-specific catch information needed for effective management of fishery stocks. More

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importantly, substantial response errors resulted from the use of a one-year recall period. Respondents were unable to accurately remember information requested for all fishing trips taken during the previous twelve months. Data collected every five years were found to be unsuitable for tracking rapid changes in the recreational harvest. Fisheries managers needed more detailed and reliable catch, participation, and economic statistics on marine recreational fishing to provide comprehensive estimates of the domestic harvest of marine fish species in U.S. waters. They needed such information for evaluating future demands on the fish stocks, for predicting and evaluating the impact of fisheries regulations, and for planning recreational facilities for anglers.

NMFS conducted regional surveys in the Northeastern coastal states in 1974 and the South Atlantic and Gulf of Mexico states in 1975. The data collections used a multi-stage sampling procedure. The regional surveys assumed that the target population of recreational fishing households could be considered as a subset of the households with telephones. NMFS used random-digit-dialing methods to select a sample of residential households with anglers who fished during the previous twelve months. The survey administrators mailed a questionnaire requesting detailed information on a full year of marine fishing activity to random samples of these households stratified by household population density and distance from shore of resident fishing trips. Analyses of the survey results identified numerous procedural weaknesses, such as a low rate of response to the initial screening phase, a twelve-month recall period, and a very low rate of response to the mailed questionnaire (approximately 25 percent).

**2.1. Intercept Survey**

NMFS later initiated a study of alternative methodologies during the late 1970's and pre-tested some of the alternatives on the Pacific coast. The study compared several data collection approaches and recommended one as the most cost-effective. The recommended approach was the current survey design, a complemented survey approach involving the combination of a telephone household survey with an access-site intercept survey. The basic design of the MRFSS is shown as Figure 1.

The current MRFSS uses an intercept survey at marine fishing access points to collect individual catch data, including exact species, total number of each species, and length and weight measurements. A telephone random digit dialing (RDD) household survey is used to estimate the total number of marine recreational fishing trips taken by residents of coastal areas. Data from the telephone household survey and the intercept survey are combined to provide an estimate of the total catch of marine recreational anglers. Total catch is reported by species both in quantity and weight. The intercept survey also collects information on the numbers of anglers with and without phones and the distribution of anglers by state and county of residence, which is used in the expansion of the estimates of coastal resident effort to obtain estimates of total effort. The MRFSS also provides an

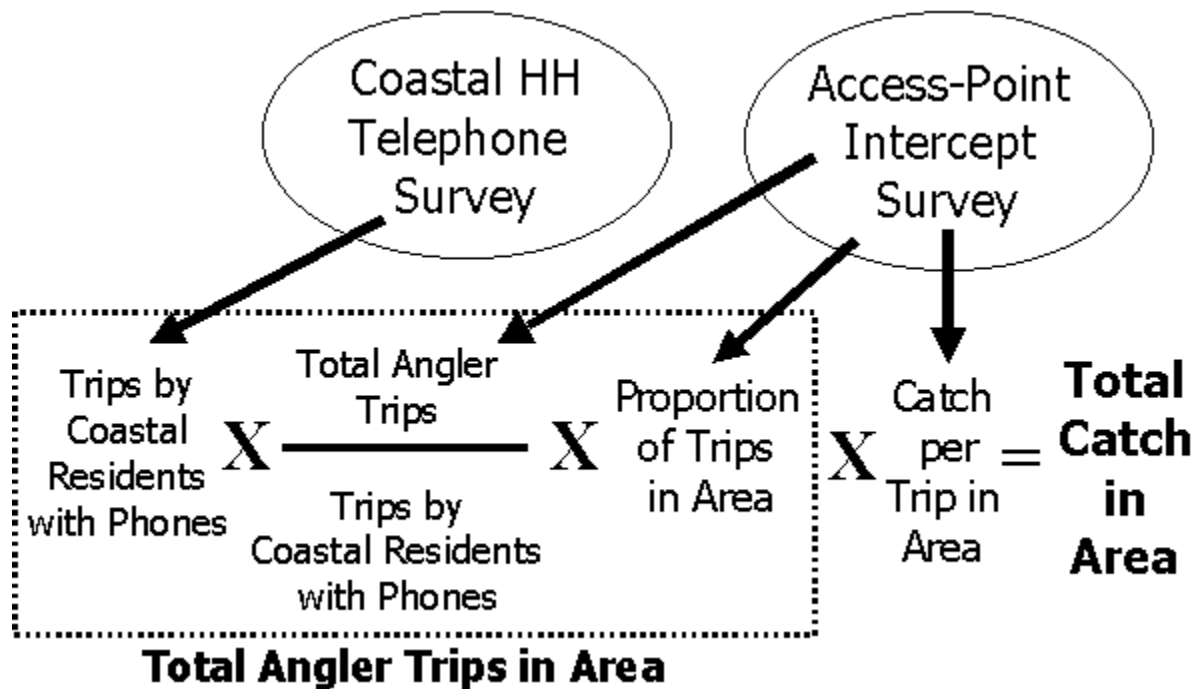
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estimate of the number of marine recreational anglers in the United States.

NMFS further tested the complemented survey methodology on the Atlantic and Gulf coasts to ensure that: 1) information used to develop the Pacific coast frame was available for other parts of the country, and, 2) the approach was appropriate in areas with different geographic and demographic characteristics. NMFS completed the Atlantic and Gulf coasts study in December 1978.

**Figure 1. Marine Recreational Fishery Statistics Survey Design**

In 1979, the MRFSS was conducted on the Atlantic, Pacific (except Alaska), and Gulf



coasts (including Texas), as well as Hawaii and the U.S. Western Pacific territories, and the U.S. Caribbean territories. In 1981, sampling in Hawaii and the U.S. Western Pacific territories, and the U.S. Caribbean territories was discontinued due to insufficient funding. In 1986, sampling in Texas was discontinued in order to stop duplication with a long-term state sampling program after the state of Texas agreed to provide their survey data to NMFS for fisheries management purposes. Also, in 1986, coverage of head boats in the Southeast Region (North Carolina to Texas) was discontinued in order to decrease duplication of effort with the Southeast Region Head boat Survey. Head boats from Maine through Virginia and on the Pacific coast continued to be surveyed as part of the combined charter/head boat mode. From 1990-1992, all sampling on the Pacific coast was also discontinued due to insufficient funds. In 2000, the MRFSS was re-established in the U.S.

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Caribbean, although there were severe problems with attracting and retaining reliable intercept interviewers in the U.S. Virgin Islands (USVI). Sampling in the USVI was dropped during 2001 to allow development of better ways to field the intercept survey, and intercept and telephone sampling is expected to resume during the 2002-2005 contract period. Currently the MRFSS staff is working with Hawaii state natural resource staff to re-establish the MRFSS in Hawaii in 2001, which will continue into 2002. Current projections are that sampling in the U.S. Caribbean and Hawaii will continue through 2005.

IN the USVI during the 1999-2001 contract period, the contractor had great difficulty in hiring and retaining reliable part-time interviewers, despite repeated and intensive efforts. Offerors will need to consider this problem carefully for this territory. Some possible solutions might be offering internships/stipends for university biology/fishery students in USVI; recruiting biology/fishery students from mainland universities with temporary relocation to the USVI for an extended sample collection period; increasing the size fo the interviewing staff in Puerto Rico and sending them to the USVI for sampling periods; paying more attractive hourly rates; or hiring two full-time interviewers, one for St. Thomas and St. John and one for St. Croix. The contractor should specify how they plan to address sampling in the USVI in their written proposal.

Routine marine recreational fishery surveys employing the MRFSS complemented survey approach began in 1979 and have been conducted in the following areas and years:

Area	Years
Atlantic and Gulf coasts	1979-2001
Pacific coast (Washington to California)	1979-1989, 1993-2001
Western Pacific area (Hawaii, Guam, U.S. Marianas, American Samoa)	1979-1981
Hawaii	2001
U.S. Caribbean	
Puerto Rico	1979, 1981, 2000-2001
USVI	1979, 1981, 2000

The telephone survey has always been conducted by a contractor; however, on the intercept survey there has been a gradual transition from contracting to cooperative agreements with the Interstate Marine Fisheries Commissions. This process of transition began when the Pacific States Marine Fisheries Commission (PSMFC) operated as a contractor during the mid to late 1980's. During the last 6 months of 1992, the PSMFC

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began conduct of the intercept survey through a cooperative agreement, and that arrangement has continued to the present. In 1997, the MRFSS staff began a cooperative agreement with the Gulf States Marine Fisheries Commission (GSMFC) to conduct research into alternate methods to collect charter boat effort data. Through that cooperative agreement, the GSMFC gained experience conducting the charter boat intercept sampling and in 1999, after a bench-marking process side-by-side with the MRFSS Intercept Contractor, conduct of the complete MRFSS Intercept Survey in east Florida and the Gulf of Mexico was transferred to the cooperative agreement with the GSMFC and its member states. That arrangement has continued to the present. Conduct of the MRFSS Intercept Survey in the U.S. Caribbean is currently through the intercept contract. The re-establishment of the MRFSS intercept survey in Hawaii is through a cooperative agreement with the Hawaii Board of Land and Natural Resources Division of Aquatic Resources.

**2.2. Charter and Head Boat Telephone Survey**

In the mid-1990's, the NMFS began a series of cooperative pilot studies to test alternate methods of surveying fishing effort by the charter and head boat fishery. The traditional MRFSS RDD telephone survey of coastal county households has been very effective for collecting fishing effort information from shore and private/rental boat anglers. However, it is less effective for collecting effort data from party and charter boat anglers for two reasons. First, the large majority of party and charter boat clientele do not reside within coastal counties. Consequently, large adjustments must be made to account for charter/head fishing by non-coastal residents. Second, less than 1% of coastal residential households surveyed actually report charter/head fishing activity. This makes it difficult to obtain adequate sample sizes for precise estimation. Because these problems can cause estimates to vary greatly from year to year, they have been questioned by fishery managers and the charter/head boat fleet.

The NMFS believed that state level for-hire vessel directories could be developed and used as sampling frames to improve the efficiency, precision, and credibility of MRFSS for-hire effort estimates. Initial cooperative investigations with state agencies to study the utility of vessel directories were conducted in Maine from 1995 to the present and in North Carolina in 1996 and 1997. These studies produced promising results, and from 1997-1999 the NMFS funded a cooperative state-federal pilot survey with the GSMFC and its member states to test a vessel directory survey of charter boat angling at the regional level.

For the Gulf study, charter boat directories were developed and maintained by participating Gulf state agencies and the GSMFC. From September 1997 through the present, state personnel dialed representatives of a weekly, randomly-selected 10% sample of the charter boats for each state. The representatives (usually captains or owners) were asked about: 1) the number of chartered fishing trips in the previous week, 2) the number of

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paying anglers on each trip, 3) the primary area of fishing for each trip, 4) total hours spent actively fishing, and 5) type of fishing conducted. The Gulf pilot survey also evaluated use of voluntary logbook reporting by a rotating panel of charter boat captains in the panhandle region of Florida. The pilot survey also included an independent pre-validation survey as a means of estimating possible under- or over-reporting of trips by either weekly interviewing or logbooks, due to concerns over the potential inaccuracy of self-reported data.

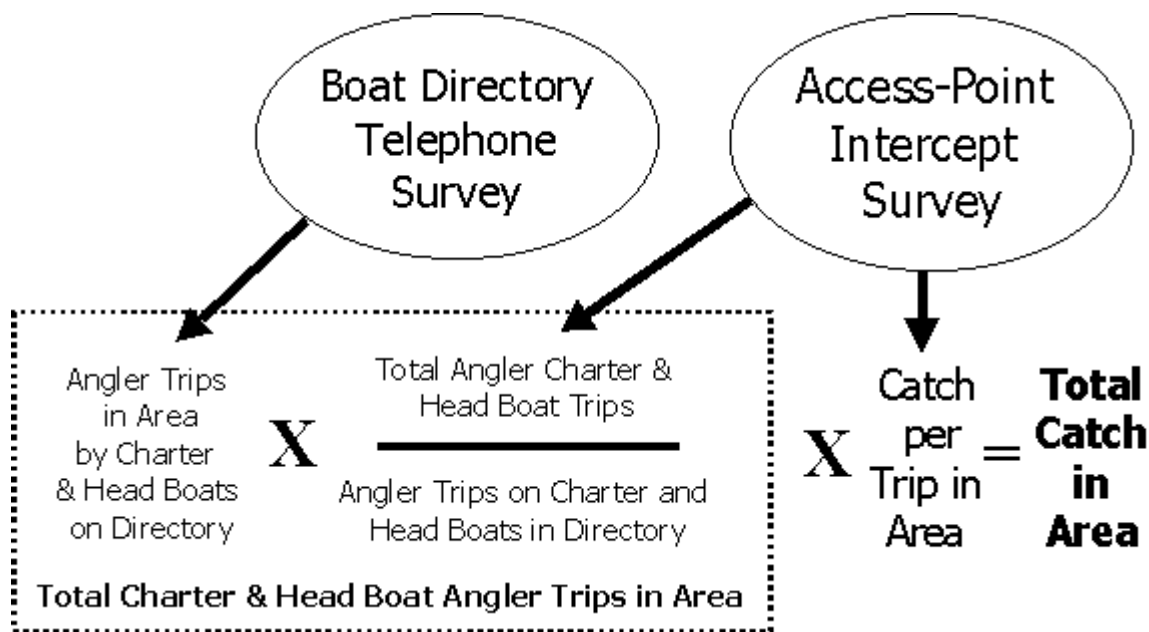
The weekly telephone survey produced significantly more efficient, precise, and credible charter angler effort estimates than the traditional MRFSS method. The estimation procedure is shown in Figure 2. This was primarily due to better coverage of charter angling activity, collecting the fishing area data from vessel representatives rather than their customers, and excellent cooperation rates from the charter fleet. In the Gulf study, although there were no significant statistical differences between MRFSS and the weekly telephone survey estimates for annual Gulf-wide and state level effort, the new methodology produced higher charter angler effort in inland waters and lower charter angler effort in the exclusive economic zone (EEZ). This results in higher catch estimates for predominantly near-shore species and lower catch estimates for predominantly offshore species. The pilot study also indicates a significantly different seasonal distribution of charter angler effort, which the Gulf charter fleet considers more realistic. The weekly calling methodology also had better response rates and was more accurate and precise than the rotating panel.

The NMFS adopted the weekly telephone survey methodology as the new MRFSS charter boat method in the Gulf of Mexico starting in 2000, and hopes to implement it nationwide in 2002. To properly benchmark differences between the two surveys and preserve the historical time series, the NMFS will continue to conduct both the traditional MRFSS and the new survey side-by-side for at least 3 years. Thus the RDD will continue to collect trip data for charter and head boat fishing for the first 3 years of implementation on the Atlantic and Pacific coasts, but will be discontinued for the Gulf coast in 2002 and in East Florida in 2003 (the new survey began in East Florida in 2000 although those estimates are not yet officially adopted).

The new Charter and Head Boat Telephone Survey (CHBTS) is being conducted in East Florida and the Gulf of Mexico (charter boats only) through a cooperative agreement with the GSMFC. Implementation on the Pacific coast is currently underway through the PSMFC. On the Atlantic coast, the CHBTS will be conducted through the telephone contract. Conduct of the CHBTS in the U.S. Caribbean will be done through the telephone contract. Conduct of the CHBTS in Hawaii will be through a cooperative agreement.

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**Figure 2. Marine Recreational Fishery Statistics and Charter and Head Boat Telephone Survey Design**



For the Atlantic coast and Puerto Rico, the Intercept Contractor will be responsible for maintenance and updating of the CHBTS directory of vessels during each wave. They will also be responsible for coordinating transfer of updated directories between the Telephone Contractor before the next wave’s dialing. The Telephone Contractor will return updated directories to the Intercept Contractor when interviewing results in vessels on the frame being reclassified as hostile or uncooperative. The directory was compiled during 2002 by the Intercept Contractor and will be supplied to the 2002-2005 Intercept Contractor by NMFS. The directory for Puerto Rico has not been created and will be the responsibility of the Intercept Contractor.

It should be noted that during implementation and for some time thereafter, there may be some overlap of the CHBTS with current established monitoring programs of charter and head boats (state and federal logbooks). These other programs will continue to function until either the CHBTS or the alternative program is proven to provide better data, or until regulatory changes can be made to change the requirements for the other programs. In most cases, these other programs do not include the entire universe of charter and party boat vessels in their applicable area and thus are unable to provide complete landings and effort statistics for the for-hire fleet. If alternative programs are chosen for the long-term, it is expected that they would apply only to vessels covered by their jurisdiction and the MRFSS CHBTS would cover all remaining vessels. In the short-term it is expected that the CHBTS would cover all vessels, including those covered by other programs. MRFSS and

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state personnel will conduct outreach meetings with the charter and head boat industry to ensure they understand why there is duplication of effort and to encourage cooperation with the CHBTS and the other programs. These other programs include: a) the Northeast (Maine-Virginia) Regional Charter Boat Logbook (NERCBL), b) the Southeast Regional Head Boat Survey (SERHS), c) and various state logbook programs such as the New Hampshire Head Boat Logbook Survey (NHHLS), the Maryland Ocean-Boat Logbook Survey, and the South Carolina Charter Boat Logbook Survey (SCCBLS).

The directory maintenance will include all vessels in each state, even if those vessels are reporting under alternate methodologies. This is necessary to insure that “for-hire” vessels do not escape coverage by at least one methodology.

## 2.3. Economic Surveys

### 2.3.1. Intercept Economic Surveys

Most fishery economics studies are conducted to collect data which is used to estimate either economic impacts or net values. *Economic impact* is the extent to which a business, community, region or other entity is changed economically by some change, whether it be an improvement or degradation, in a fishery. *Net value* is the amount of benefit received by an individual or group from a product, service, or experience over and above the cost of obtaining it. The type of costs to consider for determination of net value may include lost time and inconvenience, as well as lost money. In general, net value studies of fisheries attempt to characterize the value of fishing opportunities in terms of the costs that people are willing to pay above what they are currently paying for those opportunities. Studies aimed at determining net values are often referred to as *economic valuation* studies.

Values that accrue to individual anglers are estimated in a different way from the economic impacts on businesses, workers and communities, hence the types of data required for economic valuation can differ significantly from the types required for economic impact assessments. For example, economic valuation may require information on foregone income and expenditures commonly associated with a given angler’s fishing trips, but it may not require information on that angler’s annual expenditures for either rental of his marina berth or maintenance of his boat. However, the latter types of expenditures would be relevant to an analysis of the impact of fishing on the local economy. Therefore, clearly defining what one wishes to estimate is a prerequisite to determining what type of data needs to be collected.

The objectives of the Supplemental MRFSS Economic Surveys, broadly characterized, are as follows:

1. to collect demographic, social and economic data on the people who participate in marine recreational fishing in the various regions of the continental United States



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2. to collect data needed for the statistical estimation of models to assess the net values of marine recreational fishing for specific finfish species that are highly sought by marine recreational anglers and are either currently managed by the Fishery Management Councils and/or the Interstate Marine Fisheries Commissions, or are expected to come under management in the near future;
3. to collect data needed for construction of models to assess the economic impacts of management actions on communities and both fishery-dependent and fishery-independent businesses.

In the 1990's the NMFS began two rounds of economic surveys across three regions (Northeast, Southeast, and Pacific Coast) in conjunction with the MRFSS. The first round was for estimation of valuation models and the second round was for expenditure data to estimate economic impacts.

For both the valuation and expenditure surveys, the MRFSS Intercept Survey is used to collect the data. The surveys are conducted through the use of the "flexible" questions for a brief set of questions during intercept interviews and to ask if the respondent is willing to participate in a longer economic telephone interview several weeks after the intercept interview. On the Atlantic and Gulf coasts, the Intercept Contractor conducted the longer economic telephone survey in combination with the 10% validation dialing. On the Pacific coast the telephone economic survey was contracted out by the PSMFC.

The valuation surveys were conducted in the Northeast Region in 1994, the Southeast region in 1997, and the Pacific coast in 1998. Those studies were not specifically designed to collect all of the data needed for thorough economic impact assessments but intended to estimate value. The 1994 Northeast Survey focused on opportunities to continue fishing for bluefish, striped bass, summer flounder, Atlantic cod, black sea bass, tautog, scup (North Atlantic only) and weakfish (Mid-Atlantic only) under alternate management scenarios. The 1997 Southeast Survey asked similar questions about the net values of fishing for red drum, spotted seatrout, king mackerel, Spanish mackerel, gag, greater amberjack, dolphin (South Atlantic only), red snapper (Gulf only) and red grouper (Florida only). The 1998 Pacific Survey asked anglers about the extent to which they value saltwater sportfishing for chinook salmon, coho salmon, lingcod, Pacific halibut, and rockfishes, particularly bocaccio (California only) and black rockfish (Oregon only).

In all three economic valuation surveys, there was also an add-on to the RDD telephone survey to collect data from angling and non-angling households in order to model participation. This was conducted by the RDD Telephone Contractor.

The expenditure surveys were conducted in the Northeast region in 1998, the Southeast region in 1999, and the Pacific coast in 2000. These surveys focused on the estimation of the economic impacts of recreational fishing. This round of surveys was designed to collect the detailed expenditure data needed for proper estimation of appropriate multiplier

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effects for regional income and employment. Such estimators are needed for appropriate estimates of recreational fishery management impacts on businesses, workers and communities.

The NMFS plans to conduct economic intercept surveys during the 2002-2005 MRFSS. Specific plans are outline in Section 4 of the Statement of Work. The 2002-2005 Economic Surveys are designed to provide data needed for both economic valuation and economic impact assessments, and questionnaires are most similar to past expenditure surveys. A standard set of questions designed to obtain certain minimum demographic, socio-economic, and expenditure data will be asked in all regional surveys. However, additional questions aimed at determining the effects of specific fishery management practices on angler attitudes or behavior will vary among the regional surveys. In 2002, the Intercept Contractor will use the intercept flex questions to collect minimum valuation data for Puerto Rico. In 2003, there will be an expenditure survey in the Northeast Region using the intercept flex and a telephone follow-up, which will be conducted by the Intercept Contractor. Beginning in 2003 and continuing into 2004, the Hawaii Division of Aquatic Resources will use the intercept flex questions to collect minimum valuation data. In 2004, the Intercept Contractor will conduct an expenditure survey in the South Atlantic and U.S. Caribbean using the flex questions and the telephone follow-up. A similar expenditure survey will also be conducted in 2004 in East Florida and the Gulf of Mexico by the GSMFC for the intercept flex questions, but the telephone follow-up will be conducted by the Intercept Contractor. This follows the successful 1998 model where the GSMFC asked the flex questions and provided the necessary interview data and names and phone numbers to the Intercept Contractor for conduct of the follow-up. In 2005, the PSMFC and HDAR will conduct an expenditure survey on the Pacific coast and in Hawaii using the flex questions. The telephone follow-up will be conducted by either the PSMFC through their cooperative Agreement or through a separate contract.

Individual angler level data from the intercept flex questions will be collected specifically for use in economic valuation studies. Species-specific demand models (travel cost models and random utility models) will be specified to begin to answer questions about the economic value or costs of participation and access to recreational fisheries. In keeping with the state of the art in recreational demand modeling, the demand models will be estimated as being contingent on both the choice to go marine recreational fishing and the choice of target species.

Detailed expenditure data will be collected specifically for economic impact assessments. A variety of analytical approaches could be used for regional impact modeling purposes. These approaches range from some quite sophisticated approaches (computable general equilibrium models) to simplistic ones (shift-share analysis, for example). The most common regional modeling approach is the Input/Output (I/O) model. I/O models have considerable appeal due to their extensive use in practical applications and readily available support literature. Further, since the conceptual basis for I/O is quite intuitive the

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results of an impact assessment can be readily explained to fishery managers and the public. To the extent that fishing communities are defined as economic or geographic entities, an I/O model provides a convenient bridge between requirements to perform (a) an economic impact assessment under the National Environmental Policy Act (NEPA), (b) a regulatory flexibility analysis under the Regulatory Flexibility Act (RFA), and (c) a National Standard 8 review under the Sustainable Fisheries Act (SFA). Regional I/O models will be constructed to track the economic activity (i.e., sales, income and employment) generated directly and indirectly from recreational anglers' expenditures.

#### **2.3.2 Intercept Conjoint Economic Survey**

The NMFS began a new type of survey in the Northeast region, starting in Wave 2 (March and April) 2000, to collect data to better understand saltwater anglers' preferences for various regulations such as bag limits and size limits. The 2000 survey directly sought the views of the angling community on important conservation and management issues related to summer flounder by asking about their fishing experiences. The analytical approach was originally developed for the consumer market research sector and has been adapted for use in exploring recreational fisheries issues. The conjoint survey was conducted in two parts in conjunction with the MRFSS:

- Use of the "flexible" questions on the intercept interview to add a few short questions that are used to describe saltwater recreational fishing participants and to ask intercepted anglers to participate in a mail follow-up survey.
- A mail survey of a subset of respondents who agreed to participate that asked about fishing related activities including target species, catch and release fishing, and preferences for different conservation management actions.

The NMFS plans to continue these types of studies during the MRFSS 2002-2005 cycle, although the mail survey component will not be conducted through this intercept contract. More details are outlined in Chapter 4. Beginning in 2002 and continuing into 2004 in the South Atlantic, East Florida and the Gulf of Mexico, the intercept flex questions will be used for the conjoint survey. The intercept contractor will be responsible for the flex questions in the South Atlantic, while the GSMFC will be responsible for them in East Florida and the Gulf of Mexico. The mail survey follow-up will be done through a separate contract for all areas.

#### **2.3.3 RDD Economic Survey**

The regional rounds of economic valuation surveys in the 1990's also included an add-on to the MRFSS RDD Telephone Survey that was designed to collect demographic data. This demographic data is used to profile marine angling participants, and when used in conjunction with census data, to predict marine angling participation rates into the future.

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The NMFS plans to conduct such an add-on in the Northeast in 2002 through the MRFSS Telephone contract. While this work will be done by the Telephone Contractor, the 2002-2005 MRFSS Intercept Contractor should be aware that this activity is occurring.

**2.3.4 CHBTS Economic Survey**

In 2001 the MRFSS began a project to collect cost-and-earnings economic data from the for-hire industry on the Pacific coast using the CHBTS directory as a sample frame. The cost-and-earnings information collected from this fleet will be used in support of analyses needed to comply with the NEPA, the RFA, the MFCMA, the Endangered Species Act and other applicable federal law. The data collected will be used for three general purposes. First, the data will be used to predict potential effects of alternative regulatory actions on the for-hire fleet. The need for economic data to conduct regulatory analysis has been heightened by a 1996 amendment to the RFA, which allows agencies to be sued for inadequately considering the effects of regulations on small businesses. Second, the data will be used to estimate the extent of overcapacity in the for-hire fleet and to help identify reasonable alternative approaches to reducing capacity, should such reduction be deemed necessary. Third, the data – in combination with effort and harvest - will be used to measure and monitor the economic performance of the fishery. Such routine monitoring is important for anticipating fishery management problems before they become severe and difficult to address.

Two types of surveys will be conducted: 1) a one-time survey to collect annual expenses, and 2) a recurring trip survey conducted as an add-on to the normal CHBTS dialing (hereafter referred to as the annual economic survey and the trip-level economic survey). The annual survey will collect data regarding the volume and types of activities engaged in by the for-hire fleet during the year, as well as annual economic revenues, costs and employment. The recurring survey will be conducted as an add-on to the CHBTS that focuses on trip level information as opposed to annual data. The recurring survey will be collected during weekly telephone interviews over the course of one full year to ensure that the range and seasonality of for-hire activity is captured.

The NMFS plans to conduct these surveys during 2002-2004. This activity is planned for East Florida and the Gulf of Mexico for 2002-2003, and for the Northeast Region, South Atlantic, U.S. Caribbean, and Hawaii in 2003-2004. While these economic surveys will be conducted by the Commissions and MRFSS Telephone Contractor, this background is provided for informational purposes. The MRFSS Intercept interviewers may get questions while conducting interviews. Intercept interviewers should be briefed and aware of the purpose of the CHBTS economic survey. They also may be asked by NMFS to distribute informational hand-outs to charter and head boat captains.

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### 2.4. National Conduct of the MRFSS Surveys

Table 1 shows the entities responsible for conduct of the various tasks that will comprise the 2002-2005 MRFSS.

The MRFSS Intercept Contractor will be responsible for

- the 2002-2005 Intercept Surveys in the Northeast Region, South Atlantic north of Florida, and U.S. Caribbean;
- the Intercept Economic surveys using the flexible questions
  - for valuation data in Puerto Rico in 2002,
  - for the conjoint data in the South Atlantic north of Florida in 2002-2003, and
  - for the expenditure data in the Northeast Region in 2003 and
  - for the expenditure data in the South Atlantic north of Florida, and U.S. Caribbean;
- the Intercept Economic telephone follow-up interviews
  - for expenditure data for the Northeast Region in 2003,
  - for expenditure data for the South Atlantic north of Florida and U.S. Caribbean in 2004;
- the 2002 CHBTS directory creation for the U.S. Caribbean (although the USVI may occur later),
- the 2002-2005 CHBTS directory maintenance in the Northeast Region, South Atlantic north of Florida and U.S. Caribbean;
- the 2002-2005 CHBTS dockside pre-validation of the telephone data in the Northeast Region, South Atlantic north of Florida and U.S. Caribbean.

The MRFSS Telephone Contractor will be responsible for

- the 2002-2004 RDD Telephone Surveys in all regions;
- the 2002 RDD Economic Demographic add-on for the Northeast Region;
- the 2002-2004 CHBTS weekly telephone survey in the Northeast Region, South Atlantic north of Florida, and U.S. Caribbean; and
- the 2003 CHBTS Economic annual and weekly surveys in the Northeast Region, South Atlantic north of Florida, and U.S. Caribbean.

Note: The current Telephone Solicitation is for the 2002-2004 surveys. A new solicitation will be issued for the 2005 Telephone Surveys and future option years.

The GSMFC will be responsible for

- the 2002-2005 Intercept Surveys in East Florida and the Gulf of Mexico;
- the Intercept Economic surveys using the flexible questions
  - for conjoint data for 2002-2003 in East Florida and the Gulf of Mexico; and
  - for expenditure data in 2004 in East Florida and the Gulf of Mexico;

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- the 2002-2005 CHBTS directory maintenance in East Florida and the Gulf of Mexico;
- the 2002-2005 CHBTS dockside pre-validation of the telephone data in East Florida and the Gulf of Mexico;
- the 2002-2005 CHBTS weekly telephone survey in East Florida and the Gulf of Mexico; and
- the 2002-2003 CHBTS Economic annual and weekly surveys in East Florida and the Gulf of Mexico.

The PSMFC will be responsible for the following activities on the Pacific coast (California through Washington):

- the 2002-2005 Intercept Surveys;
- the Intercept Economic surveys using the flexible questions;
  - for conjoint data for 2003;
  - for expenditure data for 2005;
- the 2002-2005 CHBTS directory compilation when and where the new survey is implemented;
  - Oregon and Washington to be determined;
- the 2002-2005 CHBTS directory maintenance when and where the new survey is implemented;
  - California in 2002-2005;
  - Oregon and Washington to be determined;
- the 2002-2005 CHBTS dockside pre-validation of the telephone data when and where implemented;
  - California in 2002-2005; and
  - Oregon and Washington to be determined.

The Hawaii Division of Aquatic Resources (HDAR) will be responsible for the following activities in Hawaii:

- the 2002-2005 Intercept Survey;
- the Intercept Economic surveys using the flexible questions;
  - for valuation data for 2003-2004;
  - for conjoint data in 2004-2005;
  - for expenditure data in 2005;
- the 2002-2005 CHBTS directory maintenance;
- the 2002-2005 CHBTS dockside pre-validation of the telephone data;
- the 2002-2005 CHBTS weekly telephone survey;
- the 2003-2004 CHBTS Economic annual and weekly surveys.

Separate contracts will be issued for:

- the Intercept Economic telephone follow-up surveys for
  - the 2005 expenditure data for the Pacific Coast and Hawaii;
- the Economic Conjoint mail follow-up surveys for

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- the 2002-2003 surveys in the South Atlantic, East Florida, the Gulf of Mexico, and the Pacific coast;
- the 2004 -2005 survey in Hawaii;

The contracts for the Pacific and Hawaiian telephone and mail follow-ups may be issued directly by the NMFS or by the PSMFC or HDAR with funding passed through those cooperative agreements. The MRFSS Program Manager will notify both the Intercept and Telephone Contractors when the solicitations are announced. Both the Intercept and Telephone Contractors may choose to bid for any of these separate contracts, but will not be required to do so.

**2.5. Statement of Work and Procedures Manual**

In previous procurement actions, the request for proposals included both a generalized Statement of Work and a more specific Procedures Manual which described very specific requirements. In many cases, the two documents overlapped and there was duplicate description of requirements. In other cases, the NMFS MRFSS staff and Contractors had to consult one of the documents, but it was not always apparent which document contained the specific information that was being sought. This statement of work incorporates both the Procedures Manual and the statement of work into one document. This should allow one unified description of all work to be accomplished and allow easier referencing.

Any questions or problems not covered in this statement of work should be directed to the National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Office of Science and Technology, Fisheries Statistics and Economics Division (F/ST1) through the Contract Officer.

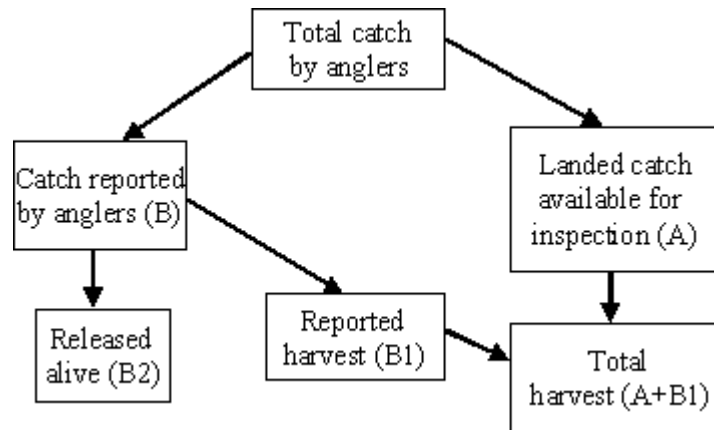
**3.0 MRFSS Definitions**

**3.1 Catch Types**

The MRFSS makes estimates for total catch by the marine recreational fishery; however, these catch types are made for separate categories of catch to account for fisheries mortality and the certainty about the accuracy of the data (Figure 3). Type A catch is identified to species and enumerated by trained interviewers, while Type B catch is reported by anglers, thus there is better certainty about the accuracy of Type A catch than Type B catch. Type A and B1 catch are synonymous with harvest and represent marine recreational fisheries mortality. Type B2 catch is released alive and there may be some cryptic mortality associated with this, but that can not be quantified by the MRFSS.

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**Figure 3. Catch Types used in the MRFSS**



**3.2 Cell**

A cell is the basic sampling stratum of the survey. Estimates are made independently for each cell.

Cell	Example
Year	2001
Region	Northeast
Sub-region	North Atlantic
State	Maine
Wave	4 (July-August)
Mode	Private/rental Boat
Fishing Area	Exclusive Economic Zone
Species	Striped bass
Catch Type	A - Fish available for inspection

**3.3. Coastal Counties**

The MRFSS RDD Telephone Survey is conducted in coastal counties of coastal states. Coastal counties are (1) those counties which border on marine waters, including areas where marine species of finfish are caught, and (2) those counties any part of which is within a distance from shore specified by NMFS. The specified distances from marine shoreline are intended to include most of the participants in marine recreational private boat and shore fishing. Past MRFSS results indicate that for most states and territories, a distance of 25 to 50 miles from the coast includes the population accounting for 70-80 percent or more of the total private/rental boat and shore fishing trips in the state. Generally counties with any part of their boundary within 25 miles of the coast or shorelines of major bays or estuaries are always considered coastal counties and are included in the



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telephone household survey. There are several extensions to this definition:

1. The boundary is extended to 50 miles in the South Atlantic and Gulf subregions from May through October (Waves 3 through 5).
2. For the Pacific Coast, the distance varies due to the large size of the counties, and may extend beyond 25 miles in many areas. Some counties on the Pacific Coast that are outside the 25 mile coastal zone are also included since they represent metropolitan areas that contain anglers known to go saltwater sportfishing.
3. Due to special residence and fishing participation patterns, North Carolina coastal counties are within 50 miles of the coast from November through April (Waves 1, 2, and 6) and within 100 miles of the coast from May through October (Waves 3, 4 and 5).

State and county codes for all states and counties are listed in Appendix A. Counties considered to be coastal for waves 1-2 and 6 and for waves 3-5 are listed in Appendix B.

### **3.4 Day Types**

Day types are defined as weekends, which includes Saturday, Sunday, and specified holidays, and week days. Specified holidays are the dates on which the Federal government celebrates the following: New Years Day (January 1), Martin Luther King's Birthday (third Monday in January), Presidents Day (third Monday in February), Memorial Day (last Monday in May), Independence Day (July 4), Labor Day (first Monday in September), Columbus Day (second Monday in October), Veteran's Day (November 11), Thanksgiving Day (last Thursday in November), and Christmas Day (December 25).

For the state of Hawaii, holidays also include Prince Kuhio Day, King Kamehameha Day, and Admission's Day.

### **3.5 Fishing Access Site**

The name and location of the place where anglers are intercepted. Each intercept site is given a unique name and code number. The fishing access site does not define the mode of fishing since anglers may use more than one mode at any given site. Fishing sites are discrete geographical areas from which saltwater recreational fin-fishing takes place. A boat fishing access site should include not more than approximately 100 yards of coastline area. A single interviewer should be able to cover an entire site on foot in a reasonable amount of time to intercept returning boat fishermen. Wherever appropriate, a site can have boundaries smaller than 100 yards. Some large access sites may be broken into smaller sites that allow single interviewer coverage; however, boundaries must be clearly identified. A docking area with both charter boats and private boats would be one site with both charter/head boat and private/rental boat fishing.

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### 3.6 Fish Dump

A monthly listing (electronic data file) of all fish records from the MRFSS intercept survey interviews, including species code, accepted common name, numbers of fish, weights and lengths of the fish, and disposition of the catch.

### 3.7. Fishing Modes

The MRFSS is structured around types or "modes" of fishing. While there are many types of fishing, three major mode groups are considered:

1. Shore mode (SH) includes fishing on man-made shoreline structures such as piers, jetties or bridges, and on natural beaches or banks. Definitions for individual types of shoreline are;
  - Man-Made Shore*
  - Pier--A structure built out over water and supported by pillars, and without long-term docking facilities for boats;
  - Dock--A structure built out over water and supported by pillars/anchors, with long-term docking facilities for boats;
  - Jetty--A kind of wall, usually made of rocks, built out into the water to restrain currents or protect a harbor;
  - Breakwater--An offshore structure used to protect a harbor or beach from the forces of waves;
  - Breachway--A shore along a connecting channel;
  - Bulkhead, Sea Wall--A retaining wall along a waterfront;
  - Bridge--A structure carrying a pathway or roadway over a body of water;
  - Causeway--An elevated or raised way across wet ground or water;
  - Natural Shore*
  - Beach--A level stretch of pebbles or sand beside a body of water, often washed by high water;
  - Bank--A stretch of rising land at the edge of a body of water not washed by high water, which could be rocks or an overhanging cliff; and
  - Other - Any other non-boat fishing.
  
2. Head boat mode (HB) includes fishing on boats on which fishing space and privileges are provided for a fee. Head boats are generally large, they may carry from 7 passengers up to 150 paying passengers, and anglers usually pay on a per-head basis for the opportunity to fish on them. The vessel is operated by a licensed captain (guide or skipper) and crew. In some areas of the country head boats are called party boats or open boats. These boats are usually not launched until a specified number of anglers have paid and boarded. Anglers on these full or half day trips usually do not know all of the other anglers on the boat. Head boats

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usually engage predominantly in bottom fishing. Head boats may make all-day or half-day trips.

3. Charter boat mode (CB) includes fishing on boats operating under charter for a specific price, time, etc. Charter boats are smaller in size than head boats, they usually carry fewer than 7 paying passengers, and they are usually hired, or “chartered”, by a group of anglers. They are operated by a licensed captain and crew, and the participants are usually part of a pre-formed group. Thus, charters are usually closed parties, as opposed to the open status of party boats. A subset of charter boats are also called guide boats, which are small boats fishing inland waters with two to three clients. Charter boats can engage in a full range of fishing techniques, including trolling, bottom fishing, and drift fishing. Charter boats may make all-day or half-day trips.
4. Private/rental boat mode (PR) includes fishing on both private boats and rental boats. A private boat belongs to an individual. Private boat trips are any boat trip where no fee is paid for the use of the boat. Individuals may contribute to the cost of the trip (i.e. friends chipping in for gas), but there is no commercial transaction. Rental boats are rented or leased from a commercial enterprise. No captain or crew is provided--the renter operates the boat.

### 3.8 Fishing Trip

A fishing trip is defined as fishing during part or all of one waking day in one mode. An angler who fished from both a pier and a jetty on the same day made one fishing trip since the pier and jetty are both in the shore mode. However, an angler who fished from a head boat in the morning and a pier in the afternoon is counted as having made two trips--a head boat trip and a shore trip. This definition is used for the telephone and intercept surveys and must be kept identical so that data can be matched correctly (effort in one-day trips times catch per one-day trip).

Fishing trips should be considered to be waking days, as opposed to calendar days. A trip beginning in the evening but ending past midnight would be considered one trip. Problems arise when an interviewer comes across an angler who has been on a trip, most likely a boat trip, lasting several days. In this instance, each of the angler's waking days would be considered a separate trip. If the angler's waking day was more than 24 hours, then the interviewer should record the data from the last day (24 hours) of the trip.

A fishing trip must have included actual fishing effort, i.e. have had gear in the water. Trips where anglers went in search of fish, but never actually employed any effort, for reasons such as sea-sickness or premature termination of the trip due to bad weather are not considered fishing trips.

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Note: On the economic and charter surveys, we may ask questions about multi-day trips (more than one night away from home or more than one day on the water)

#### **3.9 Hours Fished**

The time a fisherman actively fishes in a mode with fishing gear in the water, to the nearest quarter-hour. If a fisherman spends time fishing at other sites on the same day, that time is also included provided the fishing was done in the same mode. Not included is the travel time in a boat or travel time between sites.

#### **3.10 Intercept survey**

Interviewing anglers and examining their catch upon completion of their fishing trip or, under certain circumstances, while they are still fishing. This type of survey is also sometimes called a creel survey. A creel is the wicker basket used by trout fishermen for their catch.

#### **3.11 Intercept Interviewers**

Intercept Interviewers are the field staff who conduct face-to-face interviews of fishermen at fishing access sites, in addition to their other duties. In this statement of work, they will be referred to as simply “interviewers”.

#### **3.12 Length of fish**

Length is measured to the nearest millimeter. For fish with a forked tail, fork length is measured from the tip of the longest jaw or the snout, whichever is terminal with the mouth closed, to the center of the fork. For fish with a non-forked tail, total length is measured from the tip of the longest jaw or the snout, whichever is terminal with the mouth closed, to the tip of the caudal lobe or fin along the center line of the body. There are a few exceptions to this measurement (see Section 7.3.4 Length Measurements).

#### **3.13 Marine Recreational Fishing**

The MRFSS and CHBTS collect data on fishing in marine (or salt ) waters by recreational fishermen who are fishing for finfish, not shellfish, and whose trips begin and end anywhere in the United States.

##### **3.13.1. Marine Fishing Areas**

Marine or salt waters includes oceans and open water areas, as well as inland salt or brackish water bodies. Inland saltwater bodies include sounds, passes, inlets, bays,

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estuaries, brackish portions of rivers, and other areas of salt or brackish water like bayous and canals. Some coastal water bodies are called lakes but should still be considered saltwater, i.e., Lake Pontchartrain, Louisiana; however, high salinity non-coastal lakes like the Salton Sea in Southern California are not valid marine recreational fishing areas. Freshwater trip data are not collected through the MRFSS. NMFS has recently compiled a subset of the coastal counties that actually have saltwater coastline within the county boundaries (Appendix C). This list will be used in the RDD questionnaire to verify that reported trips were from access sites adjacent to saltwater. In past years, the MRFSS had defined saltwater/freshwater boundaries for all Pacific Coast rivers. During 2001, the NMFS is working with Atlantic and Gulf coastal states to establish easily identified landmarks for saltwater/freshwater boundaries. This list of landmarks will be completed before the start of the contract and provided to the contractor to use in conjunction with the area fished question to verify that the trip is saltwater.

**3.13.2. Recreational fishing**

Recreational anglers are those individuals whose primary purpose of fishing is for fun or relaxation, as opposed to providing income from the sale of fish. Thus fishermen who sell part of their catch, often to pay trip expenses, are included in the survey. If part or all of the catch was sold, the monetary returns should have constituted an insignificant part of the angler's income for the angler to be considered recreational. This can include subsistence fishermen if they are depending on the fish to feed their families rather than depending on the sale of the catch for income. Commercial trip data are not collected in the MRFSS.

**3.13.3. Geographic scope**

The survey includes individuals whose trips end and begin at coastal access sites anywhere in the United States. Fishing trips made out-of-state (i.e. a fisherman from Massachusetts who travels to Florida for vacation and goes fishing while there) are distinguished from trips made in the state or sub-state area where the survey is being conducted (i.e., the same Massachusetts fisherman making a fishing trip from an access site on Cape Cod) . Boat trips that left and returned from a surveyed state but fished in waters off another state are considered in-state trips. Boat trips that left and returned from a surveyed state but fished in foreign waters (Mexico, Canada, or non U.S. Caribbean) are not considered in-state trips and are not usually eligible. This last situation rarely occurs and only in the northernmost counties of Washington and Maine, the southernmost county in California, the U.S, Caribbean, and southeast Florida.

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**3.13.4. Finfish vs shellfish**

Only fishing trips directed at fish with fins are eligible for MRFSS interviews. Information on trips made in pursuit of crabs, shrimp, lobster, clams, oysters, mussels, scallops, and other invertebrates are not normally collected.

**3.14 Master Site Register**

A list of all sites where marine recreational fishermen have access to the water for fishing. The Master Site Register (MSR) contains the following information about each unique site: identifying code; 6-digit latitude and longitude codes to the nearest second; a description of the site; driving instructions; and estimates of monthly weekend and weekday fishing pressure. The pressure estimates are the numbers of fishing interviews expected to obtain at a site during a day for each mode present and each wave, month, and day type. Additional descriptive information is also included.

**3.15 Non-Coastal Marine Recreational Fisherman**

A recreational fisherman who lives in the state where the intercept interviewing is being conducted, but does not live in any of the coastal counties that are included in the RDD sampling frame.

**3.16 Out-of-State Marine Recreational Fisherman**

A recreational fisherman who lives in a state other than where the intercept interviewing is being conducted.

**3.17 Regions and Subregions**

The MRFSS is conducted in the following Regions and subregions:

<b>Region</b>	<b>Subregion No.</b>	<b>Name - States &amp; Territories</b>
Region I - Pacific Coast	Subregion 1	Southern California [San Diego County through Santa Barbara County]
	Subregion 2.1	Middle California [San Luis Obispo County through
	Subregion 2.2	Northern California [Humboldt County through Del Norte County]
	Subregion 3. 1	Pacific Northwest [Oregon]

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	Subregion 3. 2	Pacific Northwest [ Washington]
Region II - Northeast	Subregion 4	North Atlantic [Maine, New Hampshire, Massachusetts, Connecticut and Rhode Island]
	Subregion 5	Mid-Atlantic [New York, New Jersey, Delaware, Maryland, and Virginia]
Region III - Southeast	Subregion 6	South Atlantic [North Carolina, South Carolina, and Georgia]
	Subregion 7	Gulf of Mexico [Florida East coast (Nassau County through Dade County) Florida West coast (Monroe County through Escambia County), Alabama, Mississippi, and Louisiana]
	Subregion 11	U.S. Caribbean [Puerto Rico and U.S. Virgin Islands]
Region IV - West Pacific	Subregion 8	Hawaii

**3.18 Regional Representatives**

Regional Representatives (RRs) are the supervisors responsible for day-to-day oversight of the intercept interviewers.

**3.19 Sample Draw**

A list of assignments made by selecting fishing access sites randomly in proportion to their fishing pressure for a specified fishing mode, month and day type, and by randomly selecting the date of the assignment

**3.20 Tournaments**

A tournament is defined as a fishing contest lasting seven or fewer days for which participants have to register. Prizes are given according to the rules of the contest--most, biggest, etc. Informal "pools", such as those arranged on head boats, are not considered tournaments. Anglers would have ridden the head boat whether or not there was a pool.

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**3.21 Wave**

The MRFSS is structured around two-month sampling periods called "waves":

Sampling Wave	Months
1	January-February
2	March-April
3	May-June
4	July-August
5	September -October
6	November-December

**3.22 Week**

For the CHBTS, sampling within waves is conducted on a weekly basis. A week is defined as Monday through the following Sunday.

**4.0 General Requirements**

The 2002-2005 MRFSS Intercept Survey contract will include conduct of five tasks: 1) the Intercept Survey on the Atlantic coast north of Florida, and in the U.S. Caribbean, 2) compilation of the Charter and Head Boat Directory in the U.S. Caribbean, 3) maintenance of the Charter and head Boat directory on the Atlantic coast north of Florida and in the U.S. Caribbean, 4) pre-validation of the Charter and Head Boat data that is self-reported by vessel operators in the weekly telephone survey on the Atlantic coast north of Florida and in the U.S. Caribbean, 5) and the Economic Expenditure Surveys (intercept and telephone follow-up) on the Atlantic coast north of Florida, and the telephone follow-ups in East Florida and the Gulf of Mexico. Sections L and M describe proposal requirements and contents for each of these tasks.

The MRFSS Intercept Survey Contractor shall be responsible for all data collection tasks under this contract, as well as conducting all data entry, data checking, and data editing according to NMFS specifications, including but not limited to:

1. hiring, training, testing, deployment, and supervision of interviewers;
2. survey administration, including selection and scheduling of specific sampling units;
3. maintenance of the MSR of all saltwater fishing access sites;
4. collection of specified fishing effort, catch, and demographic information by interviewing marine recreational fishermen at shore, private/rental boat and charter



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- and head boat access sites;
5. collection of socio-economic and other topical management questions through the “flexible” questions added to the intercept interviews;
  6. collection of specified economic survey information from cooperating intercept respondents by follow-up telephone interviews and linking those interviews to the intercept records;
  7. creation of charter and head boat directories in the U.S. Caribbean;
  8. maintenance and updating of charter and head boat directories on a wave basis and timely delivery to the MRFSS Telephone Contractor;
  9. pre-validation of self-reported trip data supplied by charter and head boat captains through the CHBTS;
  10. validation of 10% of all intercept interviews;
  11. field quality control visits;
  12. making modifications to data entry programs to accommodate changes to the questionnaires;
  13. data entry and editing of every entered variable for possible coding or key-entry errors identifiable as out-of-range, illogical, or unreasonable and correcting all such errors identified in the data bases to produce error-free (defined in Section 9) data bases stored on electronic media;
  14. use of data distributions supplied by MRFSS for outlier analyses as appropriate to the intercept and economic surveys;
  15. preparation of summary tables for use in checking, editing and reviewing the data at wave review meetings;
  16. preparation of two-month progress reports (wave reports), as well as an annual final summary report of the data collection procedures and results;
  17. attendance and participation at three wave review meetings and one conference call review meeting per year;
  18. participation in bi-weekly conference calls with the NMFS and the MRFSS Telephone Contractor;
  19. making proposals to modify the data collection procedures based on review of survey results; and
  20. timely delivery of error-free electronic data bases to the NMFS.

The MRFSS Intercept Contractor’s responsibility shall include coordination of the intercept survey tasks with NMFS and the MRFSS Telephone Contractor, and for the economic surveys with the GSMFC.

Reports of the results of the previous surveys are available through our web site at [http://www.st.nmfs.gov/st1/procurement/mrfss\\_survey.html](http://www.st.nmfs.gov/st1/procurement/mrfss_survey.html). The user id is demo and the password is ur2sea.

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**4.1. Survey Scope**

**4.1.1. Intercept Survey**

The Intercept Survey Contractor shall conduct the MRFSS Intercept Survey in the Northeast Region (Maine through Virginia), North Carolina through Georgia, and the U.S. Caribbean from 2002 through 2005.

The survey is conducted continuously on a 10-month basis (March through December or waves 2-6) on the Atlantic coast north of Florida, except for Maine and New Hampshire. The survey is conducted on a 6-month basis (May through October or waves 3-5) in Maine and New Hampshire for the shore and private/rental boat modes. Sampling of head and charter boat modes also occurs in wave 2 in Maine and New Hampshire. If ordered, the survey will be conducted on an annual basis in the U.S. Caribbean subregion.

The Intercept survey consists of interviews of marine recreational fishermen at shore, private/rental boat, and charter and head boat access points, as specified by quotas ordered by the NMFS by state, wave, and mode. After implementation of the new CHBTS on the Atlantic coast and U.S. Caribbean, sampling in the head boat mode will entail riding on the boats rather than dockside sampling. Data collected through the intercept survey includes brief demographic data about the fisherman; trip details such as hours fished, area fished, and target species; and catch information, including species identification, and measurement of lengths and weights; and on occasion the use of "flexible questions" that vary by region and year to obtain economic data or address current issues.

Intercept sampling in other regions will be conducted through cooperative agreements with the GSMFC, the PSMFC and the HDAR.

**4.1.2. Intercept Economic Survey**

The 2002-2005 Intercept Contractor will be expected to conduct an intercept economic survey for the Northeast Region in 2003 and for North Carolina through Georgia and the U.S. Caribbean in 2004. The intercept economic surveys will occur during the same waves as the Intercept Survey.

The intercept economic surveys consist of 1) using the flexible questions to ask a few trip-related economic questions while conducting intercept interviews, 2) asking intercept respondents if they would be willing to participate in a longer telephone follow up survey, and 3) conducting a longer telephone follow-up. The Economic Intercept Interview will be administered to each intercepted angler over 16 years of age who completes a MRFSS Intercept Survey interview. The Follow-Up Telephone Interview will be administered to each intercepted angler who completes the economic intercept interview, volunteers to be

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further interviewed by telephone, and is reached by a telephone interviewer. The telephone interview will be attempted within 4 weeks of the date on which the angler completed the intercept interview.

The Economic Survey administered as part of the Intercept Survey interview will ask 8-12 questions to obtain data on trip duration, opportunity cost of time, distance traveled, travel costs and/or on-site expenditures associated with each intercepted angler's fishing day. These data may be used in the development of angler or trip profiles and/or in the development of statistical behavioral models to estimate values associated with recreational saltwater fishing.

The Follow-Up Telephone Interview administered to volunteers who completed the Economic Intercept Interview will ask 30-40 questions to obtain additional demographic, social and/or economic information. These data may be used to track trends in angler profiles and/or to provide baseline expenditure information needed for regional I/O models. The questionnaires ask for social and economic data, as well as information about recreational fishing avidity, attitudes, and experience.

The telephone follow-up components of the intercept economic surveys for East Florida and the Gulf of Mexico will be conducted by the Atlantic coast Intercept Contractor. The GSMFC will be responsible for the intercept economic survey and timely delivery of data to the contractor for use in the telephone follow-up. The telephone follow-up components of the intercept economic surveys for Hawaii and the Pacific Coast may be done either through those cooperative agreements or a separate contract. If done through a separate contract procured by the NMFS, the Intercept Contractor may choose to submit a proposal, but will not be required to do so. If the funding for that work is included in the cooperative agreements, the commissions/state may choose to conduct the follow-up telephone surveys themselves or to issue a contract for this work. The MRFSS Intercept Contractor will be notified of the intent to issue a contract so they may choose to offer a proposal for that work.

**4.1.3. CHBTS Directory Creation and Maintenance**

The 2002-2005 Intercept Contractor will be expected to create/compile the CHBTS directory in the U.S. Caribbean in 2002 (although for USVI this will depend on the recruitment of interviewers and may occur later) and conduct wave-by-wave updating and maintenance of the CHBTS directory in the Northeast Region, North Carolina through Georgia, and the U.S. Caribbean in 2002-2005.

The creation of the CHBTS directories for the U.S. Caribbean will be a one-time task. The CHBTS directory maintenance is partitioned into the same waves as the Intercept Survey. The CHBTS directory will be updated for March through December or waves 2-6 on the

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Atlantic coast north of Florida, except for Maine and New Hampshire. The CHBTS directory will be updated for March through October or waves 2-5 in Maine and New Hampshire. If ordered, the CHBTS survey will be conducted on an annual basis in the U.S. Caribbean and directories would be updated for all waves occurring after the initial compilation.

Data collected for the compilation of the CHBTS for the U.S. Caribbean includes vessel name and number, location, contact information, eligibility, and cooperation status.

Data collected for CHBTS directory maintenance includes all specified data for new vessels, new or revised information about each vessel in each state already on the directory, current fishing activity or eligibility of vessels, and cooperation status of the charter and head boat representatives.

The CHBTS weekly survey and associated economic surveys in all regions will be conducted by the MRFSS Telephone Contractor, GSMFC, PSMFC, and HDAR.

**4.1.4. CHBTS Pre-validation**

The 2002-2005 Intercept Contractor will be expected to conduct dock-side pre-validation of the self-reported trip data collected from charter and head boat operators through the CHBTS in the Northeast Region, North Carolina through Georgia, and the U.S. Caribbean for 2002-2005. This pre-validation is necessary to document any under or over-reporting of fishing effort in the CHBTS.

The CHBTS is partitioned into weeks and waves, and pre-validation occurs weekly within each wave sampled. The CHBTS survey is conducted on a 10-month basis (March through December or waves 2-6) on the Atlantic coast north of Florida, except for Maine and New Hampshire. The CHBTS survey is conducted on a 8-month basis (March through October or waves 2-5) in Maine and New Hampshire. If ordered, the CHBTS survey will be conducted on an annual basis in the U.S. Caribbean.

The CHBTS pre-validation task consists of using the CHBTS weekly samples of vessels sent by the MRFSS Telephone Contractor, visiting the access sites for a subset of those vessels during the week they are to be profiled (which is the week prior to the telephone interviews), and recording the time and location visited, the vessel of interest, and whether the vessel is docked or away. These visits should occur in conjunction with or on route to routine intercept assignments when physically possible.

The CHBTS pre-validation in East Florida and the Gulf of Mexico, and in Hawaii, will be conducted by the GSMFC, and HDAR, respectively. The PSMFC will be responsible for pre-validation on the Pacific coast where the CHBTS is implemented.

**Attachment J.1.1. Statement of Work****4.2. Sample Sizes**

Table 2 contains the approximate sample sizes that NMFS expects to order during 2002-2005 based on their normal funding for the program. Table 3 contains the expected add-on paid for by the Atlantic Coast Cooperative Statistics Program (ACCSP) program, which is expected to be similar to the 2001 add-on. These allocations are provisional and subject to revision. The NMFS will submit delivery orders with actual sampling distributions at least one month prior to each sampling wave for the 2002, 2003, 2004, and 2005 intercept surveys. If the ACCSP add-on is funded, it is expected that the Atlantic States Marine Fisheries Commission will contract directly with the Intercept Contractor. The MRFSS program will not accept data collected by any contractor other than the one awarded the 2002-2005 Intercept contractor, as there is no way to control how the data are collected or verify what quality control measures are in place.

**4.2.1. Intercept Survey**

For the 2001 MRFSS, the NMFS allocated approximately 30,300 intercept interviews among states in proportion to fishing effort, after allocating blocks of sample to each region based on historical sampling levels (Table 2). The base-level allocations for 2002-2005 are expected to be similar to those of 2001. The allocations are expected to be about 17,000 in the Northeast Region (Maine through Virginia) and about 13,000 in the Southeast Region (North Carolina-Georgia and U.S. Caribbean) for a full year of sampling.

In 2001, the ACCSP allocated funds to increase both telephone and intercept sampling in the Northeast region (Maine through Virginia). This funding resulted in an increase of approximately 9,100 intercept samples (Table 3). This increase to base by the ACCSP is expected to continue throughout the contract period, and the amount of funds may also increase, but it is not guaranteed. The 2002 proposal submitted to ACCSP has the initial approval at the Operations Committee level (operational steering committee) at the same level as 2001 (Table 3). Based on historical experience, the Coordinating Council (final decision level) generally agrees with the Operations Committee recommendations. In addition, the budget for ACCSP has an increase in both the House and Senate marks above the amount available in 2001. It appears very probable that ACCSP will fund this increase in 2002.

In 2001, the additional ACCSP samples were distributed according to the distribution of the MRFSS samples, after removing the minimum sample per cell among states and waves, thus they were strictly based on historical effort. This type of distribution is expected to continue in 2002-2005; however, it could change if states propose rational alternate strategies to optimize sampling for particular species, waves, or modes.

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### **4.2.2. Intercept Economic Survey**

The sample sizes for the economic surveys generally are based on the total number of interviews specified in the Intercept Survey, but are reduced by the age requirement, the respondents' willingness to cooperate, and the ability to reach respondents by phone. Maximum possible sample sizes are usually determined by the base MRFSS intercept interview allocations without including any state or ACCSP add-on. The MRFSS economists may decide to apply the economic surveys to additional ACCSP or state sampling in order to increase sample sizes for more precise modeling. If so, the cost-per-unit for the base level of sampling would apply to that additional sample.

The economic survey questionnaires (intercept and follow up) are only administered to anglers at least 16 years of age, which slightly reduces the number of follow-up interviews below the intercept quotas. In addition, not all anglers asked to participate in the telephone follow-up are willing to cooperate, it is usually not always possible to reach respondents at the supplied numbers, and there are subsequent refusals to the telephone interviews, all of which reduce the number of follow-up interviews considerably below that of the base MRFSS intercept quotas. Table 4 shows past results of economic survey attempts and the reductions relative to base intercepts due to the minimum age, willingness to cooperate, incorrect phone numbers, and ability to contact respondents during the follow-up. Response rate and other factors may vary during the 2003-2004 sample years.

Since the sampling unit for the MRFSS Intercept Survey and the Economic Intercept Survey is an individual angler fishing day, rather than an individual angler, anglers are eligible to be intercepted on more than one day during any given two-month wave of the Survey. Hence, every time that a given angler is intercepted and volunteers he/she should be contacted for the follow-up telephone interview. Anglers who are contacted more than once should be appropriately identified and administered an abbreviated follow-up questionnaire for all interviews subsequent to their first interview. It will be necessary to link all shortened, subsequent follow-up interviews with the original interview (see Section 6.1.4.13).

Since most of the intercepted anglers will be subsequently contacted for the telephone follow-up portion of the survey, unique calls for the sole purpose of validation of MRFSS Intercept Survey interviews (10%) are not necessary. Therefore, validation interviews are to be conducted in conjunction with economic follow-ups so that 10% of all intercepts are validated. The validation interview precedes the follow-up interview. Thus there may be two types of follow-ups: 1) combined validation and economic follow-up interviews, and 2) economic follow-up interviews. The contractor may choose to use only type 1 follow-ups if that is thought to be simpler to operate, which would substantially increase validation rates.

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### **4.2.3. CHBTS Directory Creation and Maintenance**

The CHBTS Directory will be created once for each of the U.S. Caribbean territories, so the sample size for that unit of work is two. The maintenance of the directory will be on a wave by wave basis for each state (Maine through Georgia) and territory (Puerto Rico and USVI), for active waves. The CHBTS directory is a listing of all known charter and head boats in a state, therefore there is only one list for each state. Information in the list is used to distinguish between the two types of vessels. The number of CHBTS Directory creation and maintenance units that are expected to be ordered is shown in the pricing sheets

Current estimates are approximately 2,400 charter and head boats from Maine through Georgia and in the U.S. Caribbean (Table 5). Approximately 1,400 are known to be charter boats, 278 are known to be head boats, and 700 are unknown as to vessel type. Since head boats are more distinguishable due to their larger size, we are assuming most of the unknown vessels are charter or guide boats.

### **4.2.4. CHBTS Pre-validation**

Charter and head boats that are selected for the CHBTS and are docked at public access marinas or sites in assigned slips or that are assigned to a permanent location in a storage shed must be validated during the week before the telephone interviewing occurs (i.e. during the sample week of trips that are to be profiled). Some charter vessels that are trailered to various boat access sites are difficult to pre-validate and pre-validation of those vessels is not required. Any selected vessels (by boat type) which can be validated at these assigned locations should be validated at least once per selected week. Multiple pre-validations per vessel per week are encouraged when they can be done in conjunction with scheduled intercept sampling (but only one pre-validation per vessel per day). Sites should be visited at a time of day when it would be likely that the vessel would be away from the dock on a for-hire fishing trip if booked (e.g. 8 am - 5 pm). The Government will order a minimum number of required pre-validations and based on more complete data from the CHBTS directories. The delivery orders will also provide the maximum number of pre-validations that would be accepted for payment. The delivery orders will be provided at least one month before a sampling wave begins.

Table 6 shows the number of weeks per wave. The pricing sheets show the expected sampling distributions of charter and head boat pre-validations based on current information, assumptions about the number of vessels in each category and state, and assumptions about how many vessels will be at sites where they can be validated.

**Attachment J.1.1. Statement of Work****4.3 State and Interstate Fisheries Commission Participation and Add-Ons**

In previous years of conducting the MRFSS, states and other organizations have participated in funding and conduct of the survey. In some cases, they have funded supplemental levels of sampling above those ordered by the NMFS to improve state-level estimates or to add supplemental questions for specific management needs. In other cases, the state has sub-contracted with the Intercept Contractor to use state personnel to conduct intercept interviews and other associated tasks. State sub-contracting to conduct the intercept survey tasks usually involves additions to sample size, but that is not always the case and it is not required. These add-ons and subcontracts are extremely helpful to the MRFSS program for a number of reasons: 1) add-ons improve the precision of the MRFSS estimates and thus provide better data for management, 2) buy-in by states either through additional sampling or through conduct of the intercepts helps build the positive image and public credibility of the Survey, and 3) partnerships with states and commissions helps improve understanding of the survey purpose and design by scientists and the general public. Thus it is vital that the Intercept Contractor has the ability and commitment to work in a cooperative manner with the coastal states and commissions to implement these add-ons and state subcontracts.

Straight add-ons to sample sizes have been implemented either as an additional delivery order to the NMFS contract or by state or interstate commission contracting directly with the Intercept Survey Contractor for additional samples. NMFS will provide the Intercept Survey Contractor with a list of contacts for the state fishery agencies and the relevant interstate fisheries commission. The Intercept Survey Contractor shall work with individual state agencies or the commissions wishing to add to the sample size, modify the content of the intercept portion of the survey, and/or subcontract for intercept tasks. States who funded add-ons in 2001 included Massachusetts, Rhode Island, New Jersey, Delaware, and Virginia. States who are currently sub-contracting to use state personnel for the Intercept Survey include Maine, New Hampshire, Connecticut, North Carolina, Georgia, and Puerto Rico (where a mix of state and contract interviewers are used). All of these sub-contracting states except Georgia and Puerto Rico collect additional samples above those ordered by NMFS. Massachusetts has indicated their intent to subcontract to conduct the intercept sampling in 2002.

In 2001, the Atlantic Coastal Cooperative Statistics Program (ACCSP) provided funding to increase the intercept and telephone sampling in the Northeast Region by almost 50 percent. This increase in sampling is expected to continue throughout the 2002-2005 contract period. Due to procurement thresholds and the expected cost of the 2002-2005 Intercept contract, it is expected that the ASMFC will need to contract directly with the Intercept and Telephone Contractors for these add-ons. The Government will help the ASMFC determine appropriate sample sizes and on any other necessary details. Table 3 does provide information on the expected increase based on 2001 levels.



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State subcontracts are negotiated directly between the Intercept Contractor and the interested states, as there are different levels of participation. The Intercept Contractor and the state have to determine who is responsible for the various tasks, such as who pays for travel to wave meetings, responsibility for training (different for new versus experienced states), etc. The NMFS requires that proposals for intercept data collection must include a description of proposed state subcontract procedures, including formulas for calculating the maximum "pass-through" to the subcontracting state for conduct of intercept interviews or "hold-back" to cover the contractor's administrative and operational costs (whichever is easiest), and assumptions concerning assignment of duties of the Contractor and the subcontracting state or commission. (Refer to Section H.12, Subcontracting with State Governments.) When the state is subcontracting to conduct the MRFSS intercept tasks, the amount the Intercept Contractor keeps for their portion of work should primarily apply to the base level of sampling ordered by the NMFS. Additional samples conducted with state funding and personnel are not expected to require the same levels of administration, and there should be economies of scale. Therefore the proposals must also include separate costs for data entry and quality control of additional state samples. If a state or commission chooses to participate by assuming under sub-contract the responsibilities for intercept data collection, they shall assume the identical Contractor responsibilities for survey conduct, and provide all necessary information to the Contractor to comply with Section F - Deliveries or Performance.

Any proposed modifications by states or other entities to the survey must be approved by NMFS in writing in advance of implementation. Any add-on questions or additional sampling paid for by an entity other than NMFS, and collected through the MRFSS shall be included in the data bases provided to NMFS. The NMFS will not accept add-on samples obtained by any contractor other than the MRFSS Intercept Survey Contractor, as the NMFS can not interfere or monitor contracts between states and other contractors, and thus can not be sure of the quality of that sample.

There is some interest by ACCSP partners in conducting the MRFSS Intercept Survey tasks through a cooperative agreement with the ASMFC, similar to the arrangements on the Gulf and Pacific coasts; however there is not universal agreement that this should occur. Currently about half of the state partners are conducting the intercept survey as a subcontractor or they are planning to do so. The other half have not been interested in doing so, which presents a large impediment due to the difficulties that would be involved with having the Atlantic States Marine Fisheries Commission (ASMFC) hire and supervise a large number of interviewers for those states.

The MRFS staff will be working with the ACCSP and ASMFC to determine the best plan for the future; however, the earliest we could envision transfer of the Atlantic Coast Intercept Survey to a cooperative agreement would be 2005.

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### **4.4 Privacy Act Statement**

All surveys conducted by the federal government are regulated by the Privacy Act of 1974. This Act stipulates that each person interviewed must be informed of the following: the auspices under which the survey is being conducted, whether participation is voluntary or mandatory, what will happen if they choose not to participate, and how the information will be used. Under the Privacy Act, for the MRFSS, the person interviewed remains anonymous, the responses to the questions are completely voluntary, and there is no penalty for refusal to answer any or all of the questions. All of the information collected remains completely confidential. The Act is paraphrased on all questionnaires and those statements must be read at the designated point in the screening introduction. A copy of the Privacy Act Statement (Appendix D) must be in possession of the interviewer and may be read at any point during the interview to reassure a wary respondent.

The Privacy Act stipulates that this information may be on the form used to collect the information or it may be on a separate form that can be obtained by an individual requesting it.

### **4.5 Computer Assisted Telephone Interviewing and Other Software Requirements**

While the 10% validation of Intercept interviews does not require the use of Computer Assisted Telephone Interviewing (CATI) system, use of CATI is recommended. Validation data are not required to be submitted to the NMFS; however, the results of validation calls are required to be summarized in the wave and annual reports (see Section 10.2). In addition, the economic survey telephone follow-up requirements would be best served by use of a CATI system. CATI offers increased efficiencies over manual paper surveys and increased accuracy of coding through reduction of errors introduced by secondary data entry. CATI systems also increase accuracy through built-in probes, automated looping and skip patterns, and error checks. If CATI is used, the Intercept Contractor is responsible for purchasing and maintaining their own CATI system software and hardware (i.e., those costs should not be included in the cost of this contract, except as normally included in overhead costs).

The NMFS will provide the current CATI questionnaires in electronic version (see the web site [http://www.st.nmfs.gov/st1/procurement/mrfss\\_survey.html](http://www.st.nmfs.gov/st1/procurement/mrfss_survey.html). The user id is demo and the password is ur2sea). The Intercept Contractor is responsible for maintaining and updating the questionnaire and all computer programs necessary for accurate data collection throughout the contract period, and for modifications to all quality checking programs when there are changes made in the questionnaire.

The intercept data entry program is government property and the most current version will be supplied to the Intercept Survey contractor. It must be maintained by the Intercept

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Survey contractor for use throughout the contract period (2002-2005). Maintenance is necessary when the questionnaire is changed and when flexible/economic survey questions are used. It is estimated that maintenance will require approximately 20 hours per wave, based on past modifications to existing question layouts. The maintenance costs should be included on separate pricing sheets. Expected hours that would be required should also be included in the written proposal itemized by 1) modification to existing layout (e.g. changing the wording of a question on entry-screen and/or changing the name/format of the linked storage variable), 2) addition of a new variable (the question on entry-screen, linked storage variable & format, proper export to permanent file), and 3) addition of a new page and exported data file with up to 10 questions and variables. The estimated time of 20 hours per wave is based on performing only tasks 1 or 2. Option 3 would be ordered as an additional task beyond the standard maintenance. Actual hours for any work requested would be billed, and may exceed 20 hours in a given wave, but the 20 hour/wave estimate is provided for costing this task.

There currently is no data entry program for CHBTS pre-validation data. The Intercept Survey contractor may use any software they wish for these data, but the data must be delivered to NMFS in SAS (a statistical programming language brand name) data files (see Data Delivery).

The Intercept contractor will also need at least one SAS license (Personal Computer (PC) or mainframe) in order to run government-supplied sample selection programs and use/deliver MRFSS data bases.

The current intercept contractor developed an in-house web site for use by field interviewers and regional representatives in reporting weekly tallies of obtained sample, distributing the fish dumps, and sharing of other operational materials. The contractor considers their web site to be proprietary thus it can not be shared with other offerors. Offerors are encouraged to develop their own web sites and/or institute any procedures which would improve survey efficiency and/or timeliness of data delivery.

**5.0 Survey Sampling Frames and Sampling Methods****5.1 Intercept Survey Sampling Frame and Sampling Methods**

The sampling approach for the MRFSS intercept survey utilizes a comprehensive list of fishing access sites as a sampling frame. Each site is rated according to the expected number of eligible anglers that would be encountered by interviewers during the eight-hour period when fishing activity is highest on an average "good weather" day. Estimates of "fishing pressure", defined as the mean number of anglers returning to the site from completed fishing trips, are made separately for average weekdays and average weekend days in each fishing mode for each month of the year. These fishing pressure estimates

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are taken into account when sites are selected for interviewing assignments, such that sites with higher pressure are drawn more frequently than sites with lower pressure. Activities specific to proper conduct of sampling for the MRFSS Intercept Survey include:

1. Development and wave-by-wave maintenance of a comprehensive list of fishing access sites in coastal counties specified by NMFS;
2. Wave-by-wave revision of site fishing pressure categorizations by fishing mode, month, and day type (weekend vs. weekday);
3. Determination of interviewing goals by state subregion, mode, month, and day type.
4. Determination of numbers of site/date interviewing assignments needed in each sampling stratum to reach interviewing goals.
5. Generation of monthly samples of site/date assignments for conducting angler trip interviews in each fishing mode, using programs provided by the NMFS.
6. Matching of site/date assignments with interviewers and tracking of interviewer progress in completing assignments and obtaining interviews.

**5.1.1 Description of Sampling Method****5.1.1.1 Traditional Sampling Method**

The traditional sampling method for the MRFSS Intercept Survey was a multi-stage process. In the first stage, sites were divided among eight different fishing pressure categories and fixed proportions of the interviewing assignments were allocated to each of those categories. The different site categories corresponded to different ranges of expected fishing pressure as shown in Table 5.1.1.1. Each site category was given a weight (also shown in Table 5.1.1.1). A fixed proportion of all assignments was then allocated to each category. The proportion allocated to each category was simply calculated by dividing the weight of the individual site category by the sum of the weights of all site categories represented. For example, if site categories 0-7 were all represented, then the proportions of assignments allocated to each category were as shown in the next to last column of Table 5.1.1.1. Alternatively, if only categories 0-6 were represented, then the proportions allocated to each category were as shown in the last column of Table 5.1.1.1.

The second stage of the sampling process randomly distributed the assignments allocated to each site fishing pressure category among the sites in that category. Site selection within each category was random with replacement subject to constraints set by the maximum number of days available for assignments at a given site. For example, if weekend assignments were being made for a month with 8 weekend days, then any individual site that was already drawn 8 times would no longer be replaced for further sampling. All sites within a given site category had the same probability of being drawn in this stage of the sampling process. Each site assignment was given a control number which reflected the order in which it was drawn.

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Table 5.1.1.1. Site fishing pressure categories, category weights, and proportions of assignments allocated to each category.

Site Fishing Pressure Category	Range of Expected Fishing Pressure (Number of anglers)	Site Category Weight	Proportion of Assignments (Categories 0-7 represented)	Proportion of Assignments (Categories 0-6 represented)
0	1-4	1	1/66	1/53
1	5-8	2	2/66	2/53
2	9-12	8	8/66	8/53
3	13-19	9	9/66	9/53
4	20-29	10	10/66	10/53
5	30-49	11	11/66	11/53
6	50-79	12	12/66	12/53
7	>79	13	13/66	-
8	unknown	not applicable	-	-
9	0	0	-	-

The third stage of the sampling process randomly assigned a specific date to each site assignment. All available dates were given equal weight in this selection process and no date was assigned more than once to the same site.

Finally, interviewers have always been allowed to select up to two alternate sites for interviewing if the assigned site proved to be unproductive on the assigned date. Specific rules have dictated how alternate sites were to be selected.

Assignments have traditionally been drawn independently for each month, day type (weekend vs. weekday), and fishing mode. Therefore, a 12 x 2 x 3 matrix of fishing pressure estimates must be compiled and maintained for each fishing access site included in the site register. Party/charter boat mode interviewing assignments have always been drawn first, shore mode assignments have been drawn next, and private/rental boat assignments have been drawn last. No site is allowed to be selected for more than one assignment on any given date. The order in which mode assignments have been drawn reflects the increasing availability of possible sites as you go from one mode to the next.

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Because fewer sites provide access to party/charter boat fishing, assignments for interviewing in that mode are effectively given higher priority than assignments for interviewing in other modes at those sites.

For each mode, the control numbers of site assignments were used to establish a priority order, such that lower numbered assignments were given higher priority than higher numbered assignments. The intent of setting a priority order was to assure that the temporal and geographic distributions of completed assignments would be sufficiently random.

#### **5.1.1.2 New Sampling Method**

The traditional sampling approach described above has proved to be undesirable for several reasons. First of all, the two-stage method for selecting sites does not sufficiently assure that sites with greater fishing pressure will always be given a higher probability of selection for interviewing assignments. Secondly, the differential weighting of sites can easily create situations where the geographic distribution of sampling will not be representative.

The new method of sampling to be implemented in 2002 eliminates the two-stage approach, randomly selects sites in direct proportion to their individually assigned weights, and assures a more consistent geographic distribution of the site assignments. The new approach will continue to categorize sites according to county and estimated fishing pressure. With the exception of sites in categories 0 and 1, each site will be assigned a weight equal to the minimum pressure of its pressure category as shown in Table 5.1.1.2. Each site in categories 0 and 1 is assigned a weight that is equal to  $\frac{1}{2}$  of the minimum pressure of its category. As with the traditional method, this is done to further reduce the probability of drawing assignments for sites with an expected number of interviews less than the traditional minimum target of 8 (one per hour) for a typical 8-hour interviewing assignment. These “low pressure” sites are still eligible for selection but the extra down-weighting of these sites relative to other sites is intended to maintain a reasonable level of interviewing productivity.

In order to illustrate how the selection probability of an individual site would be calculated, Table 5.1.1.2 includes a column showing a hypothetical distribution of sites among pressure categories. To calculate the selection probability of a single site in any given fishing pressure category, one must divide the weight assigned to that site by the total of the weights assigned to all available sites. For the example distribution of sites in the next to last column of Table 5.1.1.2, the total of the site weights is obtained by summing the products of the number of sites and individual site weights for all pressure categories represented. In this example, the total of the individual site weights is 1,950. The calculated individual site selection probabilities for this example are shown in the last

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column of Table 5.1.1.2.

Table 5.1.1.2. Site fishing pressure categories, individual site weights, an example distribution of sites by category, and individual site selection probabilities for that example.

Site Fishing Pressure Category	Range of Expected Fishing Pressure (Number of anglers)	Individual Site Weight	Number of Sites in Category (Example)	Individual Site Selection Probability (Example)
0	1-4	0.5	70	0.00026
1	5-8	2.5	40	0.00128
2	9-12	9	30	0.00462
3	13-19	13	25	0.00667
4	20-29	20	15	0.01026
5	30-49	30	10	0.01438
6	50-79	50	6	0.02564
7	>79	80	4	0.04103
8	unknown	not applicable	-	-
9	0	0	-	-

The SAS program to be used for drawing site/day assignments under the new method will be supplied to the Contractor by the NMFS at least two months prior to the first wave of interviewing. This program will draw sites using systematic sampling of a list of sites ordered by county and sorted randomly within counties. Each site will be replicated in the list as many times as needed to reflect its relative probability of selection. The number of replicates of each site will be equal to two times the weight assigned to the site. In other words, the list will include one entry for each category 0 site, 5 entries for each category 1 site, 18 for each category 2 site, 26 for each category 3 site, 40 for each category 4 site, 60 for each category 5 site, 100 for each category 6 site, and 160 for each category 7 site. The complete list of replicated sites will be ordered by county and randomly sorted by site within counties. The replicate entries of the same site remain clustered together within the random sorting of all sites in a county. For each round of site sampling, a sampling interval  $n$ , equal to the size of the total list divided by the number of site assignments to be drawn, will be used and systematic sampling of the list will start at a randomly selected start point between 0 and  $n$ . The site sample will then be drawn by selecting every  $n$ th entry on one complete pass through the list. If there are any sites that are replicated in the list more than  $n$  times the number of available assignment dates, they will be removed from the list

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prior to the draw and automatically selected for the maximum number of times. The remaining site assignments would then be drawn from the remaining list of sites after adjusting the sample size and recalculating the sampling interval.

The site sampling program will be set up to draw a specified number of assignments in three rounds (fixed, flexible, and reserve assignments). Each selected site assignment will be assigned a unique control number which will reflect the round in which it was selected. Site assignments will be prioritized according to the round in which they were selected. Therefore, priority should always be given to completing assignments drawn in earlier rounds over assignments drawn in later rounds.

**5.1.1.3 Future Sampling Improvements**

In 2002, the selection of alternate sites by interviewers according to specified alternate site selection procedures will continue. However, starting in 2002 the Contractor shall obtain and/or update latitude and longitude coordinates (to the nearest second) for each site which NMFS can use to accurately map sites for the purpose of calculating driving distances between sites with mapping software. The NMFS plans to evaluate methods for automating the clustering of sites based on minimizing driving distances so that appropriate clusters of sites can eventually be fixed, assigned weights and selection probabilities, and drawn for interviewing assignments. This clustering of sites and the assignment of fixed site clusters for interviewing assignments would take the selection of alternate sites out of the hands of interviewers and allow the total selection probabilities of individual site clusters to be known.

Upon implementation of the CHBTS on the Atlantic coast and U.S. Caribbean, head boats and charter boats will become separate strata. There are no changes planned for the assignment draw for charter boats; however, for head boats, an assignment will become a boat trip and interviewers are expected to ride the vessels as a paying passenger. The CHBTS directory for head boats may be used as the sample frame. The assignment draw will be changed to draw boats with selection probabilities based on passenger capacity. The assignment draw should be drawn early enough so that interviewers can make reservations for a boat assignment well in advance of the assigned sample day or week. All other requirements, such as monthly, day type and good geographical representation, shall be the same. The Government will work with the contractor to develop statistically appropriate and mutually-agreed on procedures for this separate stratum.

**5.1.2 Site Sampling Frame – The Master Site Register**

The MSR includes identified access sites for marine recreational fishing in each state, including sites in tidal areas where marine fishes are caught. Originally developed from secondary sources, the MSR has been continuously updated using historical data and



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input from intercept interviewers, field supervisors, and state fisheries personnel over the last 22 years (Appendix E contains an example for South Carolina wave 6, 2000). The Intercept Contractor is responsible for maintaining and updating the MSR for the Atlantic coast north of Florida and in the U.S. Caribbean for each wave of Intercept sampling from 2002-2005. NMFS will provide the successful Contractor with the most current MSR for the Atlantic coast (Maine through Georgia) and the U.S. Caribbean.

Sites are uniquely coded and they keep their same codes through time. For example, a marina that changes its name through new ownership will keep the same site code. Codes for deleted sites (e.g. inactive, closed, destroyed) will not be reassigned. Each interviewer must be given a MSR for his/her state or county(s) of coverage. A new MSR must be issued for each wave and supplied to the NMFS in an electronic format.

Historically, the MSR has included the fishing activity estimates (=pressures) and several descriptive fields including the name and location information. The required formats were American standard code information interchange (ASCII) columnar fields in 2 files, one with the site identifier and pressure variables and the other with the site identifier and the descriptive fields. The former was the input file for the site selection program used to draw the field intercept assignments. Beginning in 2002, the NMFS will be adding additional descriptive variables which are currently included on the Site Description Form (SDF) and will combine all variables into a single SAS database file. Programs will be provided by NMFS to produce the traditional hard copies of the site description and pressure variables, to produce the ascii description and pressure files for input into the site selection program (if used), and to estimate the monthly split within waves of angler activity for use in the site selection program. The SAS database shall be the deliverable file of the MSR and should combine all Atlantic states (Maine - Georgia & Caribbean) into one database.

Each site in the Site Register includes a two-digit state code, a three-digit county code, a unique four-digit site code, and the estimated fishing pressure by mode and month. Location information includes a site name variable, 2 site description fields, and the city or town the site is located in or nearest. The description fields should include a street address, if available, and directions from a discrete starting point such as a recognizable landmark or intersection. Additional existing fields include the name and phone number of a primary contact person who supervises the site, the county name the site is located in, the shore mode present (or not applicable (NA) if no shore fishing is available or allowed at the site) and indicator variables to code hostile or inactive sites ('hostile' and 'delete', respectively). Currently latitude and longitude are combined in one character-string variable and both values are expressed as degrees and decimal-minutes, but this format is not conducive to mapping software, nor is it precise enough to locate the access sites. The NMFS will convert this variable into separate latitude and longitude variables, a six-digit latitude code (degrees, minutes and seconds) and a six-digit longitude code (degrees, minutes and seconds), prior to intercept sampling on the Atlantic Coast in Wave 3, 2002. The latitude and longitude of all sites in the MSR must be re-located (measured) to the

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nearest second during 2002. The NMFS recommends use of Global Positioning Satellite (GPS) units in the field for this purpose.

New variables added to the MSR include information on whether the site is public or private access, the presence/absence of night fishing, whether the site is safe at night, whether a commercial fee is charged for using the site, if there is permission to interview, if use of the site is affected by the tide, a date variable to indicate when a modification to the site record was made (this must be updated whenever any variable's value is changed - it provides a record indicating when a site descriptor/pressure was last modified), variables to indicate the number of head boats and charter boats present at PC sites, a variable (portcode) which may contain the Federal Information Processing Standards (FIPS) port code of the site if such a descriptor can be mapped to the access site, and a field to add comments, such as how a site is affected by the tide. (see Appendix F). Much of this information is currently coded on the SDF and entered by the contractor into a file, but the old format of the MSR did not provide for retention of these data. A consensus value for these new fields from multiple visits/forms will need to be determined by the RR or designated staff and entered into the database. The number of head and charter boats at each site should be determined during site visits in 2002 (see SDF below). In the SAS format, additional variables can easily be added and will not affect printing of hard copies or producing the intercept assignment draws. The contractor may add such fields at their convenience. For example, the best times of day for sampling at each site could be added if the field staff would find that useful. Since interviewers are expected to begin riding head boats in 2003, it also may be desirable to add a field to the SDF for current per person head boat fees in 2002.

Assignment locations for conducting intercept interviews are drawn from the MSR. Sites are selected randomly within states with non-uniform probability based on angling pressure. Pressure codes are used in the site selection process so that the more heavily used sites have a higher probability of selection. Beginning in 1990, separate pressure estimates were developed for each month within a wave. The MSR includes estimates of fishing pressure at each site for each mode, wave, month, and day type. Fishing pressure is a scaled value representing the average number of anglers expected to use that site on a weekday or weekend day, under ideal conditions (e.g. favorable weather). Table 5.1.1.2 lists the pressure categories used to estimate average angler activity at the access sites.

**5.1.2.1 Maintenance Tasks**

Since sites to be sampled are selected relative to their estimated fishing pressure, it is imperative that the MSR contain the best information possible. The MSR is not static, since fishing activity is constantly changing. It must be updated at least once a wave based on information obtained from interviewers and RRs. Interviewers and RRs provide information to the Intercept Contractor to add sites, delete sites, or change data about an

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existing site on the MSR.

The Intercept Contractor shall be responsible for maintaining and updating the MSR continuously during the period of contract award, and for providing updated site lists on magnetic media to NMFS each wave. The Contractor shall review and update the information regarding fishing pressure for each site before each wave, and shall ensure that every site is physically inspected at least once a year to update the MSR, regardless of whether or not that site was assigned during the year. Any site that contains a pressure of "8" (unknown) must be visited as soon as possible, so that a valid pressure ("0-7" or "9") can be assigned.

Interviewers are responsible for estimating fishing pressure during each interviewing visit to each site. They must estimate the average number of anglers using each site on a weekday and weekend day for each month of the year by day type. Anecdotal information from marina operators, pier owners, boat ramp fishing shops, etc. can be used in the estimation of fishing pressure. Newspaper and weekly magazine fishing reports also provide useful background information for adjustment of fishing pressures and adding and deleting sites.

If more than one set of pressure estimates for a site are submitted by different interviewers, RRs must make the final determination of the appropriate values to use in updating the Site Register. More weight should be placed on pressure estimates for waves during which sites were visited and empirical data was gathered, as opposed to pressures estimated almost a year in advance. RRs should also consider the experience of interviewers submitting pressure estimates for the same site. Data from newer interviewers may not be as reliable as that from more experienced interviewers.

Certain sites at which interviewers are not welcome by the site management should be indicated as "hostile sites." Hostile sites may be excluded from assignment draws, but may be used as alternate sites when appropriate. Accurate fishing pressure estimates must be maintained for hostile sites even though they would be excluded from sampling. The MSR serves as a useful database for assessing the geographical and temporal distributions of fishing activity. Such information is important for setting appropriate interviewing goals by county, month, and day type (weekend vs. weekday).

The MSR is updated using the Site Description Form (Appendix G). These forms are completed during intercept assignments. Updates for sites that are not scheduled to be visited during the current wave (when updating is occurring for the next wave) may be done by interviewers while driving to nearby sites or whenever the opportunity exists.

The site register updates must be completed before the assignment draw for each wave, which generally occurs approximately three weeks before the wave begins. This allows

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enough time to schedule assignments and inform interviewers of their schedule. The updated SDF's are submitted to the RRs who scan through multiple SDF's for a unique site and develop a general consensus pressure score for each site. This information is then forwarded to the Intercept Contractor for updating of the MSR for the next wave. Therefore updated SDF's should be provided to RRs approximately four weeks prior to the beginning of the next wave.

Data files containing historical intercept data are available through the MRFSS web page at <http://www.st.nmfs.gov/st1/recreational/data.html>. The interviewing results summarized in the Assignment Summary Data files may be useful for evaluating the site-specific fishing pressure categories provided in the MSR.

#### 5.1.2.2 Site Description Forms

Site Description Forms are used to update site description information, including fishing pressure for the current wave and the next wave. A SDF must be completed for every site visited during an assignment. Additional SDFs may also be submitted any time interviewers or RRs feel there is additional information about a site that should be included in the MSR. The SDF traditionally has been printed on green paper to distinguish it from other required forms. The guidelines provided below for completing the form are keyed to the section numbers of the forms (Appendix G). The current SDF has a checkbox for presence of Party/Head and Charter boats, but to accommodate the new MSR fields to enumerate each of these types of vessels present at PC sites it is suggested that this field be converted to a numeric record (number of each in assigned locations at each PC site, or a best estimate of typical numbers being launched on an average day if the PC site is a ramp or launch site).

**General Information** -- The interviewer fills in the interviewer name, date, interviewer ID number, and state, county and site number (if it is an existing site) of the assignment. The interviewer should indicate whether this was the assigned site for the assignment or an alternate.

- 7. Upon Arrival**– The interviewer writes down the time (military time 00:00-24:00), the number of boat trailers in the parking lot or empty slips at a marina, or shoreline anglers (depending on the mode and the site) at the time he/she arrives at the site. While at the site, they gather (for new sites) or verify information about the site itself, including:

*Site Name:* If there is no proper name, use a brief description.

*Site Street Address:* (e.g., 100 4<sup>th</sup> Street.) If there is no address, choose the closest building with a street address and write it down. If an address is not possible, a

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location is needed (e.g., 4<sup>th</sup> Street and Pine.) If descriptive information must be used instead of an exact address, this should be indicated on the form.

*Site City/Town, State and Zip Code.*

*Latitude and Longitude:* Enter degrees, minutes and seconds.

*Directions from recognizable landmark:* If the site does not have a street number or address, and it is near or adjacent to an existing site on the Site Register with specific directions (e.g., street number or address) you may indicate directions from that existing site.

*Contact Person and Phone Number.* Interviewers should make an effort to obtain this information for new sites and to verify for an existing site.

*Number of Charter and Head Boats Present.* Interviewers should count the number of assigned wet or storage slips used by each type at PC sites (ask dockmaster for count of storage slips if in boat-sheds or dry-storage slots). If PC boats, primarily trailered guide boats, utilize primarily PR ramps or launches then a best estimate of number of charter boats launching on an average fishing day should be included.

- 8. Upon Departure** – Fill in the time (military time) and number of boat trailers, empty slips, and/or shore anglers present at the site when the interviewer completes the assignment. The interviewer should also check the appropriate box to indicate the weather conditions while at the site.

*Modes Present at the Site* – For each mode, the interviewer should indicate whether the mode is present, not present, or if they are unable to make this determination. All modes should be checked.

*Night Fishing:* Note that there are separate categories for indicating if night fishing is present for shore or private/rental modes. The interviewer should also check whether there is adequate lighting available to safely conduct interviews after dark.

*Private Access:* The interviewer should check the appropriate box to indicate if the site is not open to the general public, even for a fee. In addition, check whether they may be permitted to interview at the site if it is private. There may be instances of a privately-owned, restricted-access site may not welcome interviewers. If this is the case, the interviewer should indicate this on the form (access=private, hostile=yes).

*Tide:* If the fishing pressure would be affected greatly by the tidal cycle, the

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interviewer should check “yes” and explain in the comments section at the bottom of the site description form (e.g. a boat ramp inaccessible at low tide affecting PR mode.)

*Fishing Pressure Estimates* – The “fishing pressure” is the mode and site specific average number of completed angler fishing trips that an interviewer would expect to encounter during an eight-hour period of peak activity on an average good weather day, expressed on the SDF and in the MSR as a categorical value from 0 - 7, with 9 indicating that the fishing mode is not present at the site.

Using the numerical codes provided on the Site Description Form, the interviewer should estimate the fishing pressure for each mode for both months of the current wave and the next wave. The interviewer should fill in the calendar month in the space provided in front of the /YY (e.g., Month 1 is March and Month 2 is April in Wave 2.) According to the definition, the pressure should be an estimate of the average number of eligible anglers that a given interviewer would expect to encounter during an eight-hour period of weekend/weekday activity for the month, including peak activity, under ideal conditions. If this is an existing site and the interviewer’s estimate is different from that on the current register, reasons why should be explained in the comments section.

*Comments* – The interviewer should use this section to clarify the information recorded earlier and to provide additional information of interest to future interviewers at the site.

**5.1.2.3 Addition of New Sites**

In addition to discovering new sites by accident, interviewers and field supervisors should maintain contacts with local anglers, residents, State fisheries personnel, NMFS regional personnel, marina operators, bait stand owners, etc. in order to learn when new sites are planned or established. State agencies must use 10% of Sport Fish Restoration Funds (Wallop-Breaux funds) for boating access and safety programs; state personnel in charge of these programs would be valuable contacts.

When a new site is encountered that is not presently included in the MSR, the interviewer should complete a SDF with the best estimate of pressure for all months indicated. If possible, interviewers should talk to the site personnel and attempt to include monthly pressure estimates for the remainder of the year. The boxes for the site number code should be left blank, and the interviewer should provide an explanation for why the site should be added. The interviewer should also indicate that a new site was visited by writing “NEW SITE” on the Site Description Form. An example form illustrating this procedure is shown in Appendix G. It is also important that “NEW SITE” is written in place

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of the site number of the Assignment Summary Form (ASF) and on any Intercept Forms completed at that site. As new sites are added to the site register, each will be assigned a new and unique four digit code from a master list of available numbers which is maintained by the NMFS MRFSS biologist. The Contractor shall be responsible for obtaining new site numbers from the NMFS biologist when needed.

#### **5.1.2.4 Deactivating Sites on the Master Site Register**

If an interviewer visits a site presently on the MSR which he/she feels should be removed (e.g., Establishment has gone out of business), he/she should fill out a SDF and clearly mark it as an “INACTIVE SITE” at the top of the form. The interviewer should provide an explanation for why the site should be deactivated (Appendix G).

Sites are NEVER removed from the Site Register. Inactive sites are kept on the Site Register, but have 9-filled pressure estimates (indicating that mode is not present) and the variable ‘delete’ is coded ‘D’ which should be output on hardcopies of the Site Register in **bold** type. This is done to prevent an interviewer from visiting the site as an alternate site, as well as to allow for re-activation of the site in the future and to keep site codes unique to a geographic site. Interviewers should inform their RRs if they learn that a previously inactive site has become active.

NOTE: Sites marked as “INACTIVE” will not be assigned to interviewers (i.e. will not be selected by the site assignment program), and should not be selected as alternate sites unless the interviewer has recent information indicating that the site is active.

#### **5.1.3. Sample Allocation Tasks**

The Contractor shall be responsible for ensuring that the temporal and geographic distributions of sampling within a given wave for each state and fishing mode are representative of the true distributions of marine recreational fishing effort. Therefore, angler trip interviews should be distributed in a representative manner between the two months of the wave, across an entire month, among the different daytypes of each month, and among different geographic areas within each state.

##### **5.1.3.1. Setting Interviewing Goals**

Before generating a sample of site/date interviewing assignments, the Contractor must determine appropriate interviewing goals by state, wave, fishing mode, month, and day type (weekend vs. weekday). The interviewing goals for each state, wave, and fishing mode shall be set as minimum quotas by the NMFS. However, the distributions of those minimum quotas between months, between day types, and across geographic areas of a state must be determined based on the most current data available on the expected

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distributions of angler fishing trips.

**5.1.3.1.1 State/Wave/Mode Quotas**

Intercepts are allocated by the NMFS among regions, states, modes and waves in a two-stage procedure: 1) a minimum number of samples per cell is distributed across all cells, and 2) the remaining samples are distributed among and within states proportionate to fishing effort. The approximate NMFS allocations of intercept survey interviews by state, mode, and wave for 2001 are shown in Table 2. The NMFS will issue delivery orders providing the sample quotas by state, wave, and mode, at least one month before the start of a wave.

A minimum number of interviews is allocated first for each state/mode/wave stratum of the survey. The minimum samples per stratum are 30 interviews in the shore and private/rental boat modes, and 45 interviews in the charter/head boat mode. The higher minimum sampling level in the charter/head boat mode was chosen to allow collection of data from more boats, since clustering effects are high for this mode and there is a high proportion of group catches.

For the most part, additional interviews beyond the minimum levels are allocated among state/mode/wave strata to reflect the expected distribution of fishing effort among those strata. However, the boat modes of sampling are given three times as much weight as the shore mode, hence interviews above the minimum levels are distributed among the modes in the following proportions:

proportion of shore interviews =  $(1/3 \times \text{expected shore trips}) / ((\text{total expected boat trips} + (1/3 \times \text{expected shore trips}))$ ,  
 proportion of charter/head boat interviews =  $(\text{expected charter/head boat trips}) / ((\text{total expected boat trips} + (1/3 \times \text{expected shore trips}))$ , and  
 proportion of private/rental boat interviews =  $(\text{expected private/rental boat trips}) / ((\text{total expected boat trips} + (1/3 \times \text{expected shore trips}))$ .

Interview distributions for 2001 were based on the distributions of mean 1998-2000 MRFSS estimates of fishing.

During 2003-2005, the NMFS expects to divide the charter/head boat mode into two separate modes and to increase the proportion of total interviews allocated to the separate charter and head boat sampling modes. IN addition to splitting this mode, head boats would be sampled by interviewers riding the head boat as a paying (but non-fishing) passenger. This would be done in concert with implementation of the new CHBTS. Without the new effort estimates provided by the CHBTS, splitting out these two modes and increasing sample sizes would not result in major improvements to the estimates, due



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to the inherent inefficiency of the RDD frame for this fishery. The pricing sheets show the expected sample sizes that would be ordered for each of the new separate strata once the new CHBTS is in place. Pricing for these two separate strata is discussed in Section B.4 of this Solicitation.

**5.1.3.1.2 Monthly Goals**

The interview quotas shall be distributed between the two months of a sampling wave to reflect the distribution of expected fishing activity between months. The MSR serves as a useful database for approximating the relative distribution of fishing activity between months. The separate categorizations of fishing pressure at each site for each month can be used to approximate the expected distribution of total fishing pressure between months. The NMFS will provide a SAS program that uses the monthly pressure ratings in the MSR to determine the appropriate distribution of interviews for each state/mode/wave stratum between months (Appendix H).

Within each month, sampling effort should be distributed evenly and monitored on a weekly and sometimes daily basis to prevent clustering of samples at the beginning or end of the month. This clustering could be caused by meeting the monthly goals too early in a month, or by trying to catch up and finish the quota at the end of a month. Monthly allocations of interviews are set as sampling goals and are not to be treated as monthly quotas. Deviation of the actual distribution of interviews from these monthly goals will not determine the Contractor's success in meeting minimum quotas set at the state/mode/wave level (Section B of the Solicitation). However, large deviations from the monthly distribution goals could potentially be considered by NMFS as an indication of poor performance.

In some low activity waves when fishing activity changes greatly between the two months of a wave, it may be desirable to establish different interviewing goals for the first and second half of a given month. For example, in Wave 6 the fishing activity in Connecticut drops off considerably after the first two weeks of November. In order to get a distribution of interviews that reflects the true distribution of activity, it would be desirable to get most of the interviews during this two week period. In such cases, it will be possible to allocate the wave quota of interviews among the four half-months of the wave and draw assignments accordingly. In order to accurately assess such abrupt shifts in fishing pressure within a month, information on such shifts should be added to the MSR on a site-by-site basis.

**5.1.3.1.3 Weekend/Weekday Goals**

The interviewing goals for the weekday and weekend days of each month in each fishing mode should reflect the distribution of total angler fishing trips between the two day types. This distribution can also be approximated by using the distribution of total weekend and

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weekday fishing pressures as categorized over all sites in the MSR for each month. NMFS will supply a SAS program that uses the weekend and weekday pressure ratings in the MSR to determine the appropriate distribution of interviews for each state/mode/wave/month sampling stratum (Appendix H).

#### **5.1.3.1.4 Geographic Distribution Goals**

Ideally, the interviewing goals for different specified geographic subregions of each state in each fishing mode should reflect the distribution of total angler fishing trips among those subregions. As new estimation methods are implemented over the next few years, the NMFS may choose to further stratify sampling for some states into specified state subregions to improve sampling distributions. This could also allow further stratification of catch and effort estimates if sample sizes are robust. The NMFS will work with the contractor to develop procedures to ensure that samples are allocated in a representative way among these state subregions. The mode-specific interviewing goals for the different subregions of each state should be determined by using the distribution of total site fishing pressures between day types reflected in the MSR for each wave. NMFS will supply a SAS program that uses the total pressure ratings by subregion in the MSR to determine the appropriate distribution of interviews among subregions.

#### **5.1.3.2 Determining Sample Sizes – Numbers of Site/Day Assignments**

The Contractor is responsible for determining the appropriate numbers and distributions of site/date interviewing assignments needed to achieve interviewing goals. An assignment is defined as a 2-8 hour effort to intercept and interview anglers at an assigned site on an assigned date. Assignments should be drawn separately for each fishing mode, month, day type, and state (or state subregion). All of the assignments for a given wave of interviewing should be drawn at least one month prior to the start of the wave. The fishing pressure category on the master site list is used to determine the probability weighting of each site. A maximum of 20 interviews in the assigned mode may be conducted on any single assignment in the Northeast Region. A maximum of 30 interviews in the assigned mode may be conducted on any single assignment in the Southeast Region. If sample sizes for any Northeast states are increased to 2.5 times the base number, then a 30-interview maximum may be used.

Once the CHBTS is implemented and separate head boat and charter boat modes are used, the maximum number of interviews collected at charter boat sites will be set to 20 or 30 depending on the sample sizes ordered. If the Government can afford to keep the sample size that was allocated to the combined mode at the same level, but just applied to charter boats, then the maximum could be set to 30 interviews.

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When the two modes are split, interviewers will be required to ride head boats (except for small or hostile boats). The Government is expecting up to 45 completed interviews per boat assignment to be included in the price of the boat assignment, and will pay for the data entry and quality control for up to 30 additional interviews per boat trip, with a state/wave maximum shown in Section B.2.

**5.1.3.2.1 Estimating Minimum Numbers of Assignments Needed**

The Intercept Contractor must estimate the number of sampling assignments required to obtain the interviewing goals in each state/mode/wave/month/day type/subregion sampling stratum and then draw assignments accordingly. Historical interviewer productivity data should be used for this purpose. Such data are available in past Intercept Survey wave reports (Table 3 of the reports) located on the following web site:

[http://www.st.nmfs.gov/st1/procurement/mrfss\\_survey.html](http://www.st.nmfs.gov/st1/procurement/mrfss_survey.html) .

The “user id” which must be entered is “demo” and the “password” is “ur2sea”.

The minimum number of assignments needed to achieve a specified sample of angler trip interviews for any given sampling stratum can be approximated by dividing the historical mean number of interviews per assignment into the number of interviews established as the goal. For example, if the mean number of interviews per assignment over the last three years of the survey has been 5.5 for a given mode/month/day type/state stratum and the sampling goal is 200 interviews, then the minimum number of assignments needed would be calculated as follows:

$$\begin{aligned} \text{minimum number of assignments} &= (200 \text{ interviews needed}) / (5.5 \text{ interviews/assignment}) \\ &= 36.4, \text{ which rounds up to } 37 \text{ assignments} \end{aligned}$$

In any given year, the actual number of completed assignments needed to reach the sampling goal may be higher or lower than the minimum estimate based on historical productivity, because levels and distributions of actual interviewing productivity can vary from year to year for a variety of reasons. Therefore, it may be necessary to draw some additional assignments above the estimated minimum needed to assure that all interviewing goals can be reached. On the other hand, drawing too many assignments can lead to a situation where interviewing quotas would be greatly exceeded and unnecessary costs incurred that NMFS would not cover. Therefore, it is important to balance the potential costs of too many assignments against the potential costs of too few.

Once the minimum number of assignments has been estimated, this number should be increased by some amount to set the number of assignments to be drawn and issued to interviewers. The site sampling program will draw this number of assignments in the first two separate rounds of sampling, with each site assignment coded to reflect the round in

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which it was selected. Assignments drawn in the first round will be “fixed assignments” that will given priority over the “flexible assignments” drawn in the second round. The fixed assignments must be completed even if interviewing goals are reached before the end of a month or wave. The flexible assignments should always be completed unless interviewing goals for the month or wave have already been reached. Therefore, once interviewing goals for a month or wave have been reached, the Contractor may cancel all remaining flexible assignments for that month or wave.

As indicated above, the Contractor shall assure a representative distribution of sampling throughout the two months of each sampling wave. Therefore, the Contractor should avoid drawing so many assignments that interviewing quotas are exceeded within the first month of a wave or within the first couple of weeks of a given month. Although such an approach would seem to be the most cost-effective one, because remaining assignments could be cancelled once quotas were exceeded, it would most certainly result in temporal distributions of interviews that would not be representative of true distributions of fishing effort. Excessive “front-loading” of intercept survey sampling without any consideration for the accuracy of resulting sampling distributions will be considered unacceptable by the NMFS.

**5.1.3.2.2 Reserve Assignments**

The Contractor should determine an additional number of assignments to draw for each month beyond the minimum number estimated to meet the sampling goals. These additional assignments can then be drawn during the third round of the assignment draw and held in reserve. If interviewing productivity is running lower than expected during the first two weeks of the month or during the first month of the wave, “reserve assignments” can be issued to provide additional sampling coverage for the remainder of the month or wave. Overuse of reserve assignments could also lead to temporal distributions of interviews that would not be representative of true distributions of fishing effort. Therefore, the number of reserve assignments should be minimized and should not exceed 1/3 of the total assignments (fixed + flexible) originally issued.

**5.1.3.2.3 Roving Assignments**

The design of the MRFSS requires that at least two interviews be obtained with coastal residents in each cell (state/wave/mode). This is because intercept data are used to expand the estimate of trips obtained in the RDD to account for trips taken by non-coastal and out-of-state anglers. The RDD provides only an estimate of trips taken by persons living in coastal counties, i.e., counties that are located within a certain distance of the saltwater coastline. This expansion requires calculation of a variable which divides the total number of intercept interviews obtained by the number of intercept interviews obtained

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with coastal residents. Since no number can be divided by zero, some coastal resident interviews are needed. While one would do, two allow a measure of variability.

In the event that sampling for a particular state/mode/wave stratum fails to produce a minimum of two angler trip interviews with coastal county residents within the first seven weeks of the two-month wave, then the Contractor should ask NMFS for approval to designate remaining assignments for that stratum as “roving assignments”. A roving assignment has no upper limit on the number of alternate sites that can be visited to seek interviews.

Once the new CHBTS is implemented and bench-marked fully, we will be getting estimates for all trips regardless of residence, and roving may no longer be necessary for charter and head boat modes. This problem is most prevalent in the charter and head boat modes, so after the three-year bench-marking process, roving assignments should be relatively rare events.

When instructed to “rove”, the interviewer should keep moving from site to site following alternate site selection procedures until two interviews with coastal county residents have been obtained. Once two coastal county resident interviews are achieved, the interviewer should stop roving and no additional roving assignments should be conducted (i.e., normal rules apply). Permission for converting normal assignments into roving assignments must be obtained in advance, and visiting more than three sites on an assignment should never be allowed for any reason other than conducting a designated roving assignment .

**5.1.4 Sample Generation Tasks**

After determining the numbers of assignments needed to meet sampling goals for each state/mode/wave/month/day-type/state-subregion sampling stratum, site/date sampling assignments should be drawn using the program supplied by the NMFS. The sampling distribution and schedule shall be the responsibility of the Contractor and subject to approval by NMFS. The complete schedule of site/date interviewing assignments for each wave must be submitted to NMFS prior to its distribution to interviewers. NMFS will have three working days to review and approve the schedule. Posting the sample assignment schedule to a web site, with email notification of the designated NMFS staff, would meet this requirement.

The draw of fixed, flexible, and reserve assignments should be conducted at least one month prior to the start of a given wave of sampling. The assignment sampling program will require inputs of the numbers of initial (fixed and flexible) and reserve assignments to be drawn for each state/mode/wave/month/day-type/state-subregion stratum. Individual site/date assignments will be assigned a unique control number that reflects the type of assignment (fixed, flexible, or reserve). The control number can be used in tracking the

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ultimate outcome of the assignment. The control number should also be retained in the assignment summary file.

#### **5.1.5 Alternate Site Selection**

On a given assignment, an interviewer may visit up to two alternate sites if he/she determines that he/she is unable to obtain one usable interview per hour at the originally assigned site. An alternate site is the next nearest fishing site with fishing anticipated in the same mode (fishing pressure category 0-7). If a site with expected fishing activity in the same mode does not exist within a radius of a 1-hour drive from the assigned site, then the alternate site shall be the next nearest fishing site with fishing anticipated in any mode.

Although the alternate site selection procedure described briefly above will continue in 2002, NMFS will be evaluating methods for fixing alternate sites in 2003-2005. Once an appropriate method has been determined for clustering sites and drawing assignments for site clusters, the on-site selection of alternate sites by interviewers will be eliminated.

#### **5.1.6 Sample Distribution Tasks**

Once the sample of site/date interviewing assignments has been drawn for a given wave of interviewing, the Contractor is responsible for issuing those assignments to individual interviewers, tracking the completion of those assignments, and reporting progress made toward meeting the established interviewing goals.

##### **5.1.6.1 Matching Assignments with Interviewers**

The first step of implementing the sampling schedule is matching the schedule of assignments with individual interviewers. "Fixed" assignments should always be given priority over "flexible" assignments, and both fixed and flexible assignments should be given priority over any "reserve" assignments issued during the wave. Assignments may be matched with interviewers to minimize travel costs, but all issued assignments must be covered regardless of interviewer proximity or availability. The staffing of interviewers must assure coverage of all fixed and flexible site/date assignments. Assignments should not be rescheduled to accommodate the preferred schedules of interviewers. If necessary, new interviewers must be hired and trained to assure that assignments are covered on the assigned dates. The interviewing staff should be geographically distributed such that coverage of all sites is assured. Under no circumstances should fixed or flexible assignments not be issued because "no interviewer is available" to cover the site.

Site assignments may never be changed once the assignment has been drawn. The date of an assignment may only be changed if the assignment has been cancelled due to "bad weather" or due to unexpected interviewer problems, such as illness or car trouble.

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During periods of low fishing activity, it may be feasible to schedule two assignments for one interviewer on the same day. Employment of this strategy would depend on NMFS approval of a workable implementation plan proposed by the Contractor. Such a proposal should attempt to minimize potential clustering effects in the temporal and geographic distributions of sampling.

#### **5.1.6.2 Re-Scheduling of Assignments**

Fixed and flexible assignments may be rescheduled if they have to be postponed due to bad weather or unexpected interviewer problems. If the weather on the assigned date is so bad that no fishing is likely to occur at the assigned site, then the assignment may be rescheduled to the same day of the week in a subsequent week of the same month. If the assignment could not be completed on the assigned date because the assigned interviewer became ill, had car trouble, or failed to visit the site for some other reason, then the assignment may also be rescheduled according to the same procedures. Interviewer failures to complete issued assignments on the assigned dates should be minimized and unreliable interviewers should be replaced as needed with reliable ones. Any failed assignments initially assigned to the last week of a month should be cancelled because they cannot be rescheduled to a later week.

Once interviewing assignments have been issued to interviewers, the Contractor's staff must monitor progress in completing those assignments. If a given interviewer quits, gets fired, or otherwise becomes unavailable, then assignments issued to that interviewer must be reassigned to another interviewer as soon as possible to assure that no gaps occur in the temporal and geographic distributions of sampling. If necessary, such re-assigned assignments may be rescheduled as described above for "bad weather" assignments. A record should always be kept of the originally assigned date of each assignment, as well as any subsequently rescheduled dates.

Some rescheduling of sampling assignments may be necessary to prevent overlaps with samplers working to conduct interviews for other surveys. This is of particular concern when the Large Pelagics Survey (LPS) is conducted from May through September in Virginia through Maine. Because of its fixed sampling requirements, the LPS takes precedence, although once the LPS interviewer is through with their four-hour shift, MRFSS interviewers can go to that site. This may change as the MRFSS Program is being given responsibility for conduct of the LPS beginning with 2002. The MRFSS Program staff will provide LPS assignment schedules to the Intercept Contractor prior to their issuing of assignments.

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### **5.1.7 Sample Tracking Tasks**

The Contractor is responsible for tracking and reporting the fates of all issued interviewing assignments in a timely manner. For each completed assignment, the Contractor is also responsible for reporting the number of interviews obtained in each fishing mode in a timely manner so that NMFS can monitor progress toward sampling goals.

#### **5.1.7.1 Assignment Tracking**

The Contractor must track the success of interviewers in completing assignments so that any failed assignments due to “bad weather” or “interviewer problems” can be successfully rescheduled and/or re-assigned in a timely manner. A record must be maintained of any re-assignments of interviewers or re-scheduling of dates such that the fates of all originally issued assignments can be reliably tracked through to completion or cancellation. Reasons must be recorded and provided to NMFS for all failed assignments that are either rescheduled or cancelled. The Contractor should maintain a complete accounting of the fates of all assignments drawn for each wave. This information should be provided to the NMFS in a SAS dataset at the end of the wave in the assignment completion file.

#### **5.1.7.2 Tracking Progress toward Interviewing Goals**

The Contractor shall be responsible for taking appropriate control and administrative measures to ensure that the entire sampling quota set by NMFS is met for each and every state/mode/wave stratum. The Contractor shall require all interviewers to report the numbers of assignments completed and the numbers of interviews obtained on those assignments each week. Weekly tallies of assignments completed, rescheduled, or cancelled, as well as weekly tallies of interviews obtained in each fishing mode must be delivered to the NMFS Contracting Officer’s Technical Representative by Tuesday of the following week to allow accurate tracking of progress toward reaching sampling goals. Use of a web site to provide this information would meet this requirement. These weekly tallies should list, at a minimum, the date and site of each completed scheduled assignment, any alternate sites visited, alternate date if the assignment was rescheduled, and a summary of the number of interviews obtained in each fishing mode by each site visited.

During any given sampling wave, the Contractor should also track the distributions of interviews obtained relative to the established sampling goals by month, day type and state subregion to determine whether or not it may be necessary to either issue reserve assignments to assure that quotas and/or interview distribution goals will be met, or to cancel remaining flexible assignments to prevent unnecessary overages. Tables showing how interviewing distributions compare with the established interview distribution goals for each wave should be included in the Wave report (see Section 10).



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### **5.1.7.3 Issuing Reserve or Rover Assignments**

Reserve assignments should only be issued in the last two weeks of a month or wave as needed to assure the attainment of minimum sampling goals. All issued reserve assignments should be tracked in the same manner described above for fixed and flexible assignments. Any assignments that are converted into rover assignments with NMFS approval should also be coded as “rover” assignments and tracked as described above.

## **5.2 Telephone Validation of Intercept Survey Interviews**

Activities specific to proper conduct of validation for the MRFSS Intercept Survey include:

1. Generation of a 10 percent sample of intercept survey respondents to be called and interviewed for the purpose of validating intercept interviews;
2. Tracking and reporting of progress in completing follow-up telephone validation of intercept interviews.

### **5.2.1 Validation Sampling Method**

The Contractor is required to conduct follow-up telephone interviews to validate 10% of all the intercept survey interviews obtained. The sample sizes for the follow-up validation survey should be determined separately for each state/mode/wave stratum. The total validation sample for each stratum should be calculated as 10% of the total intercept interviews conducted, regardless of whether or not a valid telephone number was obtained. In order to distribute the validation sample for each week in a representative manner across interviewing assignments, the Contractor should order interviews by date, interviewer, assignment number (first or second of day), and interview number and then take a systematic sample from the list.

Because some intercept survey respondents may refuse to provide a telephone number for the purpose of follow-up validation, the number of intercept interviews will frequently exceed the number which can potentially be validated. Therefore, it will usually be necessary to sample more than 10% of the intercept interviews with potential for validation in order to validate 10% of all intercept interviews.

In addition, some level of non-response should be expected because some telephone numbers provided by intercepted anglers may prove to be invalid and some intercepted anglers who supplied valid numbers may be difficult to reach. In order to adequately compensate for potential non-response, the Contractor should select more than the minimum number needed to achieve the 10% validation goal.

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Calculation of an appropriate sample size can be illustrated with an example. Suppose 110 intercept interviews have been collected in a given sampling stratum. In order to meet the 10% validation goal, 11 follow-up interviews should be conducted with intercept survey respondents. If only 100 intercept respondents supplied a telephone number for a follow-up interview and the expected non-response rate for respondents who supplied telephone numbers (invalid or valid) is 20%, then a validation sample of 11 would have to be obtained from approximately 80 possible validation survey respondents. The percentage of interviews with telephone numbers to draw for validation purposes should be calculated as follows:

$$\begin{aligned} \text{sample size} &= (0.10 \times 110 \text{ intcpt}) \times (100 \text{ intcpt w/phone} / 80 \text{ potential validations}) \\ &= 13.75 \text{ rounded to } 14 \text{ intercepts w/phones.} \end{aligned}$$

### 5.2.2 Tracking of Validation Progress

Once the weekly sample of angler intercepts with telephone numbers has been selected and telephone interviewing has begun, the Contractor should track and report weekly progress toward validating the minimum 10% sample of interviews. Weekly reports should include the number of intercept interviews obtained, the number of validations attempted, and the number of validations completed. Data collected in the validation interviews should be reported to the NMFS as specified in the Wave report.

## 5.3 CHBTS

Activities specific to the MRFSS CHBTS Survey include:

1. Development and maintenance of a state-by-state directories of charter boats and head boats (party boats) to be used as a sampling frame for the CHBTS on the Atlantic coast and U.S. Caribbean;
2. Wave-by-wave revision of the CHBTS directories and delivery of the updated directories to the Telephone Contractor in a timely manner;
3. Receiving and incorporating updates to the CHBTS directory from the CHBTS dialing results for each wave of dialing; and
4. Generation of a sample of boat/week/day assignments for dockside pre-validation of effort reported by respondents to the CHBTS.

### 5.3.1 CHBTS Directory

The new Charter and Head Boat Telephone Survey, which will be conducted by the MRFSS Telephone Contractor on the Atlantic coast north of Florida and in the U.S. Caribbean, uses a directory of all charter and head boats in those states and territories. The Intercept Contractor for the Atlantic coast north of Florida and the U.S. Caribbean will

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be responsible for creation of the directory for the U.S. Caribbean, and maintenance of all the directories. The Intercept Contractor was given this responsibility since intercept interviewers and RRs are out in the field and should be able to hear about current charter and head boat operations, while the Telephone Contractor would not have access to such information. A directory of for-hire boats for Maine through East Florida was developed during 2001 for the purpose of implementing the new survey method. The NMFS shall provide this initial boat directory (scheduled for completion November 2001) to the Intercept Contractor.

Maintenance of the directory must occur prior to the sample draws for the next wave's sampling by the Telephone Contractor. Maintenance includes addition of new vessels, de-activation of vessels if they leave the state or the charter or head boat fishery, and updates to records for vessels already in the directory, as needed.

Each vessel in the directory shall be listed by name and/or state registration number. Names, addresses and phone numbers of vessel operators shall be included in each vessel record. For some vessels, the name of the owner may be included as one of the operators of the vessel. A principal "representative" should be designated for each vessel in the directory. That principal representative may be the owner, one of the captains of the vessel, or some other person designated by the owner. Other Information in the directory includes:

- the physical address, port, island, county and state where the vessel is located/docked;
- a unique number assigned to each vessel (NMFS will provide the numbering scheme);
- licensed and permitted capacity of the vessel;
- permit or license number;
- vessel length;
- whether the vessel is active or inactive;
- whether the vessel is cooperative/willing to participate in the survey (assume Yes for all vessels, initially);
- whether the vessel is an eligible for-hire saltwater fishing boat;
- the best time for contacting the vessel representative; and
- site code of vessel location if kept at a MRFSS Access Point.

Appendix F contains the variable names, formats and codes for the CHBTS Directory, the Sample Frame, and the Bad List file. Updates should be accomplished by a variety of means including checking license files, advertisements, and field contacts. The directory should include all vessels, whether they are known to be active or not. De-activated vessels should be kept on the directory but respondent eligibility is coded so they are not used by the Telephone Contractor in the sample selection.

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The NMFS Beaufort Laboratory conducts the voluntary SERHS from Virginia through Georgia. Head boats that are surveyed through this program will be listed in the vessel directory, with notation that they are included in the SERHS. Vessels included in the SERHS may or may not be sampled through the CHBTS, depending on the outcome of the ACCSP recommendations. The NMFS Northeast Regional Office (NERO) maintains a list of charter and head boats that are permitted for the multi-species fishery, and those vessels are required to report their effort and catch on log books. Those vessels also will be listed in the vessel directory, with notation that they are included in the NERO program. It is expected that those vessels will be sampled through the CHBTS and will need pre-validation, to allow comparison and bench-marking with the logbook program. The NMFS will provide the lists of vessels included in the SERHS and NERO programs to the Intercept Contractor.

**5.3.1.1 CHBTS Directory Stratification**

The sample directory of for-hire vessels shall be stratified to two types of vessels: charter boats and head boats (definitions, Section 3.0). Some boats may operate as charters on some trips and as head boats on other trips. For the CHBTS, each unique vessel will be assigned to only one of the two types of vessel, based on the preponderance of activity. The boat type is a variable in the directory (Appendix F ). Within each boat type, vessel size and/or passenger capacity may be used to further stratify or sort the sample, so its very important that this information is obtained and properly coded. Vessel length should be recorded rounded to the nearest foot and recorded as integer values (do not use decimals). License and/or Permit capacities may be coded by state depending on categories assigned by the regulatory agency. The county the boat primarily works from (location of marina/port or launch site used) should be coded using 3-digit FIPS code and must be a valid coastal county. Vessels should be included in the directory of the state from which they operate, not necessarily the state of residence of the owner or operator.

The Telephone contractor will produce the sampling frame from the directory for each wave's dialing prior to the time the Intercept Contractor issues wave assignments to interviewers. The Intercept Contractor can then use the frame to schedule pre-validations. Sample frame production is an integral part of the weekly sample draw program and any stratification or sorting of the frame will be programmed appropriately by the NMFS. This program is provided to the Telephone Contractor.

The vessel frame includes only vessels that are eligible to be called in the CHBTS. To be considered eligible for sampling for a particular two-month period, a vessel record must include the following, referred to as the 'key elements':

1. at least one vessel representative's name and telephone number,
2. the name of the vessel or a registration number (State or U.S. Coast Guard

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- number) for the vessel,
- 3. evidence that the vessel is currently active in the fishery,
- 4. the coastal county of operation of the vessel,
- 5. the type of for-hire vessel (charter or head/party boat)
- 6. a unique vessel identification number (following NMFS numbering scheme).

The vessel frame shall be provided to all interviewers who conduct head and charter boat interviews for use in completing the intercept question “Is this boat on the CHBTS sample frame?”. This response may be determined post-interviewing using the recorded vessel name or number (from the vessel whose anglers were intercepted) and the vessel frame.

**5.3.1.2 CHBTS Directory Transfers**

Interviewers should provide updates to the directories for each wave to the RRs on a continuing basis as new data becomes available. The Intercept Contractor shall deliver an updated electronic copy of the CHBTS Directory to the Telephone Contractor and NMFS at least four weeks prior to the start of the wave. The Telephone Contractor shall deliver copies of the Sample Frame (=the ‘good list’), the Sample Draws for all weeks of a given two-month MRFSS sampling wave, and the ‘bad list’ (list of vessels with missing elements critical to inclusion in the sample frame) to the Intercept contractor at least three weeks prior to the start of the wave for use in scheduling pre-validation visits by interviewers, in coordination with their Intercept assignment schedules, and for use in coding the on/off frame intercept question.

Establishment of the CHBTS directories on a password-protected web site that allowed appropriate updates by various partners (interviewers, RRs, and the Telephone and Intercept Contractors) might greatly facilitate the routine maintenance of the CHBTS directory and should be considered by the Intercept Contractor. Version control procedures would also need to be specified.

Additional informational updates other than the vessel status information specified above which may be obtained by the Telephone Contractor during weekly dialing shall be provided to the NMFS and the intercept contractor within two weeks of the end of dialing for a wave.

**5.3.1.3 CHBTS Directory Tolerances**

Within 6 months (3 waves) of initiation of the CHBTS, no more than 15% of the vessel records for each state should be missing key information that makes a vessel eligible for sampling (at least one vessel representative’s name and telephone number, the name or registration number, vessel activity status, and the coastal county of operation). A table of directory parameters shall be included in the wave reports (see Survey Reporting

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Requirements, CHBTS Directory Update Wave Report Tables).

#### **5.3.2 CHBTS Pre-Validation Frame**

The sample draws for all weeks of a given two-month MRFSS sampling wave that are supplied by the Telephone Contractor serve as the frame for CHBTS pre-validation. The Intercept contractor should check the vessels in the weekly draws and use their port and site codes to schedule pre-validation visits by interviewers. If possible, these pre-validation visits should be scheduled with routine intercept assignment schedules, and the vessel access site can be visited en route to or from an assigned site or during non-productive sampling periods at an assigned site.

#### **5.4 Economic Surveys**

Activities specific to proper conduct of sampling for the Intercept Economic Surveys include:

1. Generation of a sample of volunteering intercept survey respondents to be called and interviewed for the Intercept economic telephone follow-up survey;
2. Combining 10 percent validation interviews with economic telephone follow-up interviews when economic add-ons are being conducted;

The Intercept Interview Economic Survey is simply an add-on of a small set of questions to anglers reached through the routine MRFSS. The economic telephone follow-up frame is the names and addresses of intercepted anglers who volunteer to be included in the telephone follow-up.

#### **6.0 Assignment Procedures**

##### **6.1 Intercept Survey Interview Procedures**

###### **6.1.1 Overview**

Intercept interviewers are responsible for a variety of tasks associated with each intercept sampling assignment. While preparing for an assignment, interviewers are responsible for:

- determining best sampling times,
- determining if the weather is adequate,
- calibrating scales, and
- ensuring that all forms and equipment will be on hand.

While on assignment, interviewers are responsible for:

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- courtesy notification of site manager on arrival,
- completing a site description form,
- starting the assignment at the assigned site,
- choosing alternate sites correctly (if needed),
- conducting screening for eligible fishermen,
- reading a brief statement regarding the Privacy Act of 1974,
- conducting intercept interviews of eligible fishermen,
- examining the catch for species identification and enumeration,
- weighing and measuring the catch,
- asking flexible questions,
- interviewing fishermen in the alternate modes, and
- tallying people who are not interviewed by activity.

After an assignment is completed, interviewers are responsible for:

- completing the ASF,
- cleaning and storing equipment for the next assignment,
- calling in weekly tallies,
- ensuring all forms are complete and accurate, and
- sending all forms to the RRs or the Intercept Contractor.

### 6.1.2 Assignment Goals

For each assignment, the primary goal is to obtain 20 to 30 “good” intercept interviews in the assigned mode in eight hours or less. In the Northeast region, the maximum is 20 interviews in the assigned mode. In the Southeast and U.S. Caribbean, the limit of has been increased to 30, due to increases in base sample sizes. In the Northeast, in states where the state adds on at least 2.5 times the base shown in Table 2, up to 30 interviews per assignment will be allowed. One exception is head boat interviewing in the combined party/charter mode in 2002, when the interviewer has boarded and is riding a head boat. In this case, there is no limit to the number of interviews possible. While interviewing on head boats, the goal is to get at least 20 “good” interviews. This will change once the CHBTS is fully implemented and the party/charter boat mode is separated into two modes.

When the CHBTS is implemented in 2003 and the head boat mode is a separate stratum, the interviewers will be expected to get up to 75 “good” interviews per boat trip. For each boat assignment, the base price includes up to 45 “good” interviews. In addition to the base of 45, the interviewer can obtain up to 30 additional “good” interviews. The number of additional interviews is capped at 30 to control costs for data entry and quality control. In addition to controlling costs, it is likely that catches will be similar for many passengers on the head boat trip, so there is less utility in getting interviews from all passengers, and more utility in sampling additional boats.

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“Good” interviews are interviews in which all key data are obtained. Key questions that must be completed are marked with an asterisk on the intercept form. This includes: fishing mode; water fished; three/ten mile limit for ocean fishing; state and county of residence; questions related to the fish caught and the fishermen who contributed to the catch; and the total number of anglers on the boat.

Another goal is to ensure that at least two coastal residents are interviewed in each State/wave/mode (cell). It is not possible to adequately expand the intercept data unless this requirement is fulfilled. Toward the end of the wave, if no coastal residents have been intercepted in a particular state and mode, roving assignments can be attempted (Section 6.1.4.14). Interviewers on roving assignments can conduct interviews at any site within the State and mode of concern until two coastal residents have been successfully interviewed; however, all anglers intercepted must still be interviewed regardless of residence.

### **6.1.3 Assignment Preparation**

#### **6.1.3.1 Determining Best Interviewing Time**

Each assignment specifies an assigned mode, starting site, and date. However, a starting time will not be specified, so it is up to each interviewer to select an appropriate starting time for the assignment. This should be done with the understanding that an assignment can last up to eight hours, and that fishermen must be interviewed at the completion of their fishing trips. The interviewer should plan on being at the site during its peak hours in terms of fisherman activity. New interviewers should review their proposed starting time with their RRs prior to finalizing the schedule.

The time of day selected for sampling should reflect the time that boats return from daily fishing activity. For example, if anglers typically use a shore fishing site at high tide only, then that should be the time of day for conducting intercepts. Also, if night fishing pressure is high (i.e., on a lighted pier), then some interviewing should be done at night, as long as it is safe to do so. Most fishermen return to boat launching and mooring areas in early morning from night trips and mid to late afternoon for other trips. Again it is the responsibility of the interviewer to ascertain the optimum time for achieving the best intercept results for each sample site.

Interviewers should gather information on fishing activity in advance of their assignment to enhance their productivity. Newspapers and weekly magazine fishing reports are useful in monitoring activity and the seasonal opening and closing of marinas, charter operations, etc. The RRs, biologists with state agencies responsible for natural resources, and NMFS regional personnel such as port agents are also good sources of information. This information can be particularly useful during seasonal or specific “runs” of a given species



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within waves, during the winter waves when fishing pressure is low. The information also can be beneficial in the selection of alternate sampling sites.

Interviewers must start their assignments at the assigned site, and must give priority to obtaining interviews at the assigned site in the assigned mode. When possible, they should do some advance checking with the person in charge at that site before going on an assignment. This is especially important for assignments at private marinas and charter boat docks, etc. where it is important to know the hours of operation. A contact name and phone number is included on the site register whenever possible. When phone numbers are not provided, the interviewer should use his/her phone directory to find a listing for the site. Any revisions or additions should be noted on the Site Description Form and on the interviewer's own copy of the Site Register.

#### **6.1.3.2 Weather**

Interviewers should not attempt an assignment if the weather is such that there will be no anglers. For example, if there are small craft warnings, interviewers should not go out on a boat assignment. There may be shore fishing activity even though boats are not active. The interviewer should pay close attention to the weather in his/her area, and call his/her RR or the Contractor no later than the day after the assignment to reschedule "weathered-out" assignments.

#### **6.1.3.3 Assignment Materials and Equipment**

Before each assignment, interviewers should make sure they have adequate supplies of all necessary manuals and forms and that all needed equipment is in useable condition.

Manuals:

- Marine Recreational Fishery Statistics Survey Procedures Manual - The contractor should supply all interviewers with a copy of the manual (the current version is found at [http://www.st.nmfs.gov/st1/procurement/mrfss\\_survey.html](http://www.st.nmfs.gov/st1/procurement/mrfss_survey.html) with user id=demo and password = ur2sea). This manual should be taken on all assignments and referred to as needed.
- Coding manual: A lists of all codes used on the various forms should be supplied to interviewers and taken on all assignments (the current version is found at [http://www.st.nmfs.gov/st1/procurement/mrfss\\_survey.html](http://www.st.nmfs.gov/st1/procurement/mrfss_survey.html) with user id=demo and password = ur2sea).

Forms: The following forms and informational materials should be supplied to all interviewers.

- Letter from NMFS - a letter on NMFS letterhead giving a brief description of the survey, including information required by the Paperwork Reduction Act and the

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- Privacy Act of 1974, and contact information for the MRFSS Program Manager (Appendix I);
- MRFSS Brochures and other informational materials - Informational materials (brochures, web cards, videos, etc.) will be provided periodically by NMFS to the Intercept Contractor in volumes suitable for wide-spread issuance to all interested respondents and other parties interviewers may encounter. Examples of the fact sheets may be found at <http://www.st.nmfs.gov/st1/recreational/pubs.html>
  - Site Description Form – the form used to update information about the assignment site (Appendix G);
  - Screening Introduction - a series of questions used to determine an angler's eligibility for the survey (Appendix G);
  - Intercept Questionnaires – the questionnaire used for collecting fisherman, trip, and catch information (Appendix G);
  - ASF – the form used to summarize the hours worked at the site, number of people by activity, and other relevant information (Appendix G); and
  - Flex questionnaire - the flexible questions and coding sheets when applicable (examples available at [http://www.st.nmfs.gov/st1/econ/rec\\_econ.html](http://www.st.nmfs.gov/st1/econ/rec_econ.html)).

Equipment: All interviewers will receive the following materials and will be responsible for maintenance and proper usage:

- Chatillon brass spring scales (2 kg and 12.5 lb kg) - Interviewers should always carry both scales since they cannot predict the size of the fish that may be encountered.
- Tape measure;
- Measuring board;
- Fish Guides and Keys, including but not limited to, Peterson's *A Field Guide to Atlantic Coast Fishes of North America* and a dichotomous fish identification key appropriate to each area;
- Legal-sized clipboard;
- Plastic bags- food storage size for weighing small fish and large-sized bags to protect the scales when they are not in use; and
- Cloth rags or towel - These are useful for wiping hands between fish handling and form handling.

*Other Assignment Materials:* Prior to each wave of interviewing, the Intercept Contractor should send each active interviewer the following which should also be carried on all assignments:

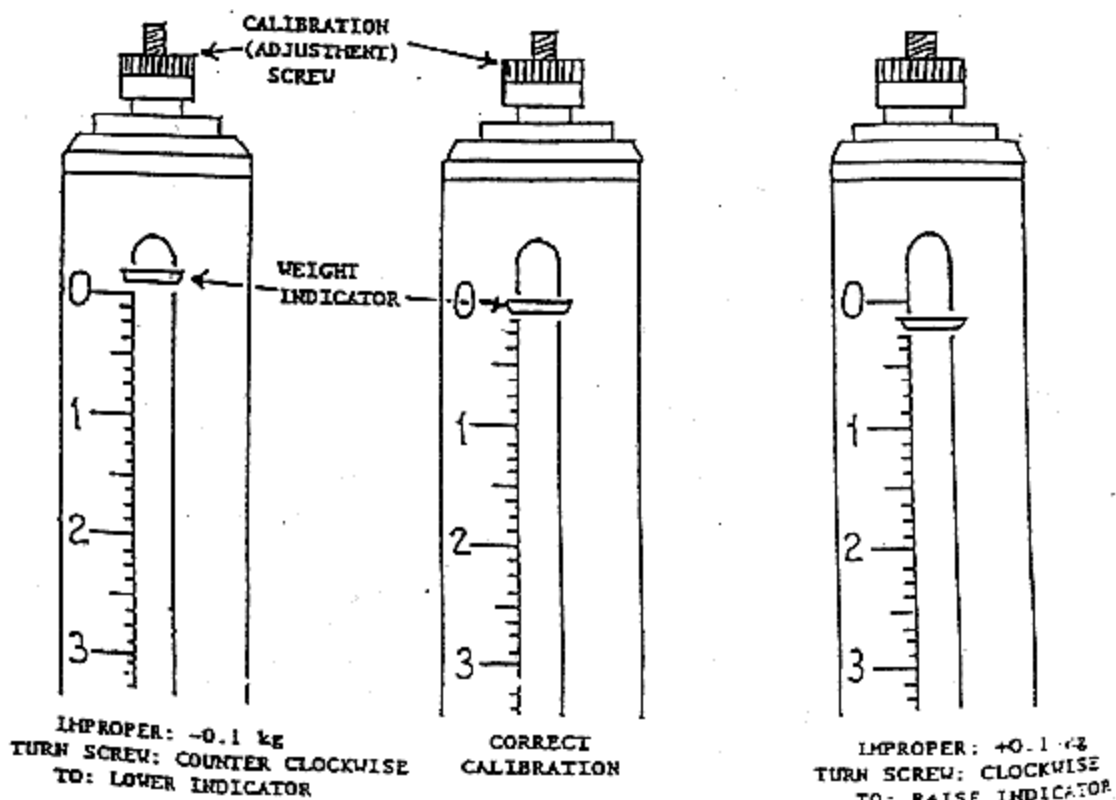
- Site Assignment List - a listing of assignments for each individual interviewer.
- Site Register - a list of all known saltwater fishing sites in the state with pressures for the current wave (an example is shown in Appendix E).

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## 6.1.3.4 Calibrating and Zeroing of Scales

An extremely important aspect of obtaining accurate weight measurements is scale calibration. While scales should be calibrated at least once or twice a year using a set of certified standard weights, interviewers should also prepare for every assignment by ensuring that their scales are zeroed properly. Most instances of improper zeroing result in rather small errors of between 0.1 - 0.2 kgs. This amount may seem insignificant, but when catch estimates are expanded from raw data, these "small" errors can cause a large and undesirable weight bias. For example, suppose an interviewer frequently encounters a small species of fish which rarely exceeds weights of 0.2 kgs. If a scale is not set properly, and reads 0.1 kgs light, then they would under report the biomass of those fish by as much as one-half the actual value. Of course, the more out of adjustment the scale, the more significant the error becomes. It is important that interviewers realize that even apparently minute maladjustments can cause bias. Figure 6.1 shows how to properly calibrate Chatillon spring scales.

Figure 6.1 Calibration of Chatillon Scales



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Over time, springs inside the scales may stretch and measure inaccurately. If interviewers feel their scale(s) is weighing improperly, they should find an object of known weight (preferable a standard weight) and test it on the instrument to see if it conforms to the expected weight. If it does not, then the interviewer should not use that scale and should contact his/her RR for a new, verified unit.

#### **6.1.4 On-Site Procedures**

##### **6.1.4.1 Courtesy Notification and Canvassing Introductions**

Upon arriving at the site, interviewers should first check in with the person in charge (or the person previously contacted). Many sites, especially public boat ramps, will have no such person, but privately owned or closely supervised public operations will have a manager in charge. Both for permission and as a courtesy, the interviewer should introduce himself/herself and give a summary of the purpose of the survey. Copies of the letter from NMFS (Appendix I), and the informational materials should be provided to substantiate the legitimacy of the survey and encourage cooperation, especially at new sites. These should be given out as needed. These letters also contain language that is required by the Paperwork Reduction Act and the Privacy Act of 1974 to be available to survey respondents upon request.

NOTE: The importance of these letters cannot be over-stressed. They are a direct link from NMFS to the fishermen and should be distributed freely. All business facilities, privately-owned facilities, and monitored public facilities should be given a copy for their files and bulletin boards. Interviewers should always have some copies available when on assignment.

At some fishing sites, especially shore fishing sites, it is possible and advisable to build a rapport with the people fishing prior to conducting any interviews. All anglers approached should be told the interviewer's name and that the study is sponsored by the National Marine Fisheries Service. At no time should an interviewer claim to be an employee of NMFS. Fishermen who have had the opportunity to meet the interviewer and discuss the survey tend to be more cooperative when asked for an interview at the end of a fishing trip. A key factor in gaining the respondent's initial cooperation and confidence in the study lies in assuring the respondent that the interviewer is not part of any enforcement effort and informing the respondent about the basic research nature of the survey. When explicitly given the purpose and scope of the survey very early in the introduction, a fisherman's initial reluctance and misgivings usually dissolve and the interview will proceed in an atmosphere of confidence and cooperation.

The canvassing introduction is a useful tool for interviewers to determine the most productive time and place to conduct interviews. By determining in advance the estimated

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times that individuals anticipate their fishing trips will be completed, interviewers can decide if it will be necessary to visit alternate sites.

The canvassing process should be very informal and as unobtrusive as possible. The conversation might begin with: “Catch anything?” or “How’s the fishing?” While canvassing, the interviewer might mention the desire to identify, weigh, and measure the fish caught. This alone often provides an incentive for the interview. If deemed appropriate, the interviewer may also suggest that each angler keep his/her catch separated.

#### **6.1.4.2 Completing the Site Description Form**

Interviewers are responsible for updating information about the assigned site and any alternate sites visited during each assignment, using the procedures outlined in section 6.1.4.4.

#### **6.1.4.3 Visiting the Assigned Site**

While the goal is to obtain 20-30 “good” interviews in the assigned mode at the assigned site, interviewers will not always be able to meet this goal. Interviewers may need to visit one or two alternate sites before completing an assignment; however, an interviewer must always visit his/her assigned site FIRST. There are only a few exceptions to this rule, including:

- An interviewer is unable to locate the assigned site, or
- The assigned site is an official tournament weigh station.

There may be very rare occasions when the interviewer will be unable to locate the assigned site, and is unable to reach the RR for assistance. When this happens, the interviewer should select an alternate site as close as possible to where the assigned site was thought to be located. This site would be treated as a starting site, and up to two alternate sites may still be visited. The interviewer must contact his/her RR afterwards to locate the site and include better descriptive information in the Site Register.

Interviewers are prohibited interviewing at tournament weigh-in sites, as participating fishermen are likely to bring in the largest fish, therefore biasing the data. In addition, the type of tournament will dictate catch per unit of effort because of targeted species and the recent evolution of tag and release events. Assigned sites and dates are randomly selected without regard to what might be happening at each site. If an assigned site turns out to be the official weigh station for a tournament, the interviewer should note the activity but select an alternate site as close as possible to where the assigned site is located. This site should be treated as a starting site, and up to two alternate sites may still be visited. The same prohibition also applies to alternate sites. The tournament site does not have

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to be counted as a site visited in terms of the maximum of three sites for an assignment. In other words, an interviewer can go to three sites in addition to the official weigh station for a tournament. An angler who has participated in a tournament, but is intercepted at a site other than the tournament weigh station is eligible to be interviewed.

Interviewers should not leave their assigned site if they encounter another MRFSS interviewer at the assigned site. Unless an error was made during scheduling, the interviewer will be the only one assigned to that site on that day. The other interviewer may have selected the assigned site as an alternate site, and should leave as soon as he/she completes any interviews in progress.

If interviewers do not start their assignment at the originally assigned site for either of the reasons above, the interviewer should document the reason on the ASF.

#### **6.1.4.4 Alternate Site Selection**

It is acceptable for interviewers to conduct interviews at sites other than the assigned site, however for each state and wave, fifty percent of any mode's interviews during a wave should be collected during assignments drawn for that mode and at the assigned site. In order to achieve this goal, the Contractor should not rely on alternate mode interviews to make quotas. Therefore, interviewers should not be encouraged to seek out alternate mode interviews when quotas are not in danger of being missed for the wave, in order to minimize sampling bias and contractor costs. Even so, there may be occasions when it is not feasible to obtain many interviews in the assigned mode at the assigned site and alternate site interviewing is desired. Interviewers may travel to alternate sites which are identified by checking the Site Register for the closest site(s) with same mode fishing activity pressure present. Some examples of when it would be appropriate for interviewers to visit alternate sites include:

- If there is no fishing activity (no anglers at a shore site or no boat trailers at a boat ramp) in the assigned mode at the assigned site;
- If fishing activity is low and a preliminary canvass shows that it will be quite a while before any fishermen will be finished for the day (i.e. interviewer checks with marina operator or charter boat booking agents and they don't expect any boats in for 4-5 hours); and
- If the interviewer has reason to believe that at least one interview per on-site hour cannot be obtained.

The following rules apply when selecting alternate sites:

- Any alternate site(s) selected must be in the same state and mode, and must be the nearest to the assigned site, but not further than a one hour drive.
- The site must have fishing activity in the assigned mode. The pressure estimate listed on the site register for that particular site and for the assigned mode must

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- range from “0” to “7”; and
- If the assigned site for a SH assignment is a beach, bank or natural shoreline, then any alternate site(s) visited must also be a beach, bank or natural shoreline area. Interviewers cannot select a pier, bridge, jetty or other man-made structure as an alternate site in this situation. The reverse is not true, however. If the assigned site is a man-made structure, then interviewers may select any shore site, including a beach or bank site, as an alternate site.
- Only two alternate sites (or a total of three sites) may be visited on one assignment. The only exception to this rule is if an alternate site is an official tournament weigh station, or if another interviewer is already at the site. In these particular cases, that site does not have to be counted as a visited site.

These restrictions on selecting alternate sites prevent interviewers from continually visiting the same highly productive sites as alternates.

A newly discovered site may be used as an alternate even if it has not yet been added to the MSR, as long as that site is in the same mode and is the nearest in location to the assigned site. Interviews conducted at new sites would be sent in without site codes, but with the site description written out in the white space on the intercept form. A Site Description Form must also be completed and sent in with the intercept forms. The Intercept Contractor will assign codes for these new sites and they must be added to the Site Register in accordance with the instructions in Section 5.1.2.3.

Interviewers may select a hostile site as an alternate site if it meets the above mentioned requirements; however, they are *not required* to do so.

If, after visiting the assigned site and one alternate site, the interviewer determines that there is no fishing activity in the assigned mode on that day within a one hour drive of the assigned site, the interviewer may interview in an alternate mode. If possible, interviewing in the alternate mode should take place at one of the previously visited sites. If those sites do not have an alternate mode, the interviewer can select the second alternate site (or third site) with an alternate mode in mind. Any time an alternate site is visited, a reason code must be given for leaving the assigned site on the ASF.

It is not necessary to obtain all the interviews at one site. If three sites are visited, interviews may be conducted at any or all of these sites. In addition, interviewers may return to previously visited sites at any time if they have information from local fishermen or marina operators that eligible fishermen will be present later in the day. It is important to remember that the site code recorded on the intercept form must be for the site where the interview was actually conducted (not necessarily the code for the assigned site).

Interviewers should number the intercept forms consecutively, starting with “01” for the first

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interview on an assignment, regardless of where this interview was completed (assigned or alternate site). In other words, interviewers should **not** begin numbering the intercept interviews with "01" at each site they visit.

#### **6.1.4.5 Interviewing in Other Modes**

It is acceptable for interviewers to conduct interviews in modes other than the assigned mode, however for each state and wave, fifty percent of any mode's interviews during a wave should be collected during assignments drawn for that mode and at the assigned site. In order to achieve this goal, the Contractor should not rely on alternate mode interviews to make quotas. Therefore, interviewers should not be encouraged to seek out alternate mode interviews when quotas are not in danger of being missed for the wave, in order to minimize sampling bias and contractor costs. It is a good idea, if possible, for interviewers to check with the RR before the assignment to find out if interviews in another mode are needed to meet target sample goals.

Any interviews in other modes should be conducted during non-productive time spent while waiting to interview in the assigned mode. For example, if the assigned mode is PR and the interviewer is waiting for boats to return, they could interview shore fishermen who have completed their trips. Or, if an interviewer obtains 20-30 "good" interviews in his/her assigned mode relatively quickly, the interviewer could focus on alternate modes for the remainder of the day.

Finally, an interviewer may interview in a mode other than the assigned mode if there is no fishing activity at the assigned site and there are no alternate sites with fishing pressure in that mode within a one hour drive. Such a determination should be made only after visiting the assigned site and at least one alternate site for the assigned mode. If there are no other sites within a one hour drive that are in the same mode as the assigned site, a visit to the assigned site would be enough and interviewing in another mode could begin. If an interviewer has reason to believe that the mode would not be active within a one hour drive of the assigned site **prior** to going out on the assignment, the interviewer should postpone the assignment and inform the field supervisor of the postponement.

In summary, interviews in alternate modes may be obtained during non-productive times after the assignment goal has been met, or after determining that the assigned mode is not active in the interviewer's sampling area on the assigned day. In addition, no more than 20 "good" interviews should be obtained in any one alternate mode. In other words, if an interviewer manages to conduct interviews in all three modes, the interviewer should turn in no more than 60 "good" interviews (except where the HB mode was the assigned mode and more than 20 head boat anglers were interviewed).

#### **6.1.4.6 Two Assignments in One Day**



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Occasionally an interviewer will be asked to take two assignments on the same day. The interviewer should use his/her best judgement to determine which assignment should be worked first. Once that determination is made, the interviewer must completely work that assignment before the second assignment is attempted. In other words, before beginning the second assignment, the interviewer must either obtain 20/30 "good" interviews in the target mode or visit the maximum of three sites to determine that one interview per hour in the target mode is no longer possible on the first assignment. An interviewer cannot just visit the starting site and call it "quits" on the first assignment before 20/30 "good" interviews are obtained in the target mode.

If time permits after the first assignment is completely worked, the second assignment should be attempted. If the second assignment happens to be in the same assigned mode as the first assignment, the interviewer should not repeat any of the sites used on the first assignment. If needed, different alternate site(s) should be selected. If the second assignment happens to be in a different mode and no interviews were obtained in that mode on the first assignment, then it is permissible to use the same sites as alternates if those are the next nearest with the target mode. If it is not possible to work both assignments on the same day, the interviewer should call their RR to reschedule the incomplete assignment.

Both assignments should be treated as separate assignments. Each should have its own ASF and SDF. In addition, the assignment should be labeled as a second assignment on the ASF.

**6.1.4.7 Assignment Time Limits**

There are no set MRFSS on-site time limits for obtaining interviews; however, the contractor may set a limit for the sake of efficiency. Interviewers should strive for efficiency and should not sit at sites where there is no expectation that at least one interview per hour could be obtained. Generally interviewers should try to obtain at least 20/30 good interviews in an 8-hour assignment, although they may not visit more than three sites during one assignment, and sometimes will not reach 20-30. On-site time is defined as the time spent between arriving at the assigned site and leaving the last site to return home. While travel time from home to the first site and from the last site back home is not included, on-site time does include the time spent traveling between sites.

Selecting an appropriate time of arrival at a site is essential to determine the likelihood of obtaining at least one interview per hour. During the first two hours of on-site time, interviewers should determine whether they will be able to obtain at least one interview per hour for the entire interviewing day. If the activity is low, then during the first two hours of the assignment, the interviewer should also visit two alternate sites.

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Assignments may be split so an interviewer can be on site during peak; however, if any fishermen are expected to return between peak hours, some coverage of non-peak hours should occur to prevent any bias. Bias could occur if fishermen that return during non-peak hours fish differently than those returning at peak hours (i.e. different target species, catch rates, sizes, etc.).

#### 6.1.4.8 Mode-Specific On-Site Procedures

For all modes, interviewers should **not** station themselves next to a fish cleaning stand, weigh station, or hoist if that would prevent them from intercepting anglers without catch.

Only fishermen who caught fish will stop at those areas, and the sample will be biased towards fishermen with catch. Fishermen without catch must be given the same priority as those with catch.

Interviewers should not engage in fishing activity while on assignment. This includes time spent between interviews, or while waiting for anglers to complete their fishing for the day. This is considered both unprofessional and unproductive.

The on-site procedures differ slightly for each mode of fishing. The following subsections describe the typical procedures for each mode.

##### 6.1.4.8.1 Shore (SH)

If the assigned mode is a **pier, jetty, or bridge**, the interviewer should station himself/herself at a point of access (entry-exit) to the site. The station should be such that all anglers leaving the site can be easily seen and approached. If all anglers are actively engaged in fishing, the interviewer should canvass the area to inform them about the survey, solicit their cooperation, and point out where he/she will be stationed.

When a **beach or bank** site is assigned, the interviewer will typically have to cover a rather extensive stretch of coastline with anglers scattered along the fishing area. If there is a predominant exit point from the site (e.g., a central parking facility), the interviewer should position himself/herself there. If no such point exists, the interviewer should position himself/herself such that the majority of anglers are within sight and easily accessible. Close observation of the fishing activity is required since the interviewer must be alert to those anglers leaving the site.

If no suitable observation spot can be found and the angler's completion times are undetermined, a drifting method is acceptable, with concentration on the locations where the most anglers are present.

##### 6.1.4.8.2 Head/Charter Boat (PC)

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In North Carolina, South Carolina, Georgia, head boat anglers are not currently eligible to be interviewed. This may change depending on the outcome of the ACCSP selection of appropriate methods for collecting effort for this fishery.

The Intercept Contractor may decide to have interviewers ride head boats if it proves too difficult to obtain monthly goals or wave quotas. Another reason to board head boats would be if the interviewer has knowledge that most of the fish are filleted at sea and could not be identified to the species level by interviewing at the dock. There are financial ramifications since the head boat operators may charge the same fee for the interviewer as he/she does their paying passengers; therefore the Contractor may wish to require prior approval for riding the boats, in order for an interviewer to be reimbursed for the head boat fee. If a fishing site has boats taking ½ day trips (dock to dock: less than 7 hours) as well as ¾ or full day trips (dock to dock: 7 to 12 hours), interviewers should sample these boats in proportion to their occurrence and frequency of trips. Interviewers should usually not board a head boat with fewer than 20 anglers, but there may be occasions when this is necessary to meet quotas, particularly during winter waves.

In some cases the assigned site will have both head boats and charter boats. In such cases, the interviewer will have to use his/her judgment concerning head boat boarding. If it is possible to obtain 20 "good" interviews while stationed on the dock, the interviewer should stay at the dock. This, of course, is a function of how many boats have departed from the site and their expected times of return. If only a small number of boats have departed or if all boats will return at the same time, the interviewer might not be able to obtain 20 "good" interviews and should board a head boat.

Interviewers should attempt to sample Head Boats and charter boats at mixed sites in proportion to their activity. If the interviewer rides a head boat on one assignment, it would be appropriate to stay at the dock and sample charter boats along with some head boat patrons on the next assignment at that site.

When head boats arrive at a site, and the interviewer is not boarding the boat during the trip, it is often difficult to obtain 20 "good" interviews by staying on the dock. This is due to the relatively few numbers of head boats at any one site along with the large number of anglers who complete their trips at the same time and are exiting the boat. The ability to get 20 interviews will depend on how many head boats are located at the same site and the schedules of those head boats. Interviewer should always call ahead to determine the best time to arrive at the site.

Interviewers should never board a head boat without the full knowledge and cooperation of the boat captain. Prior to boarding, the captain must be informed about the survey. The interviewer should introduce him/herself and explain the survey to the boat captain. Good rapport with the captain will often result in increased cooperation of the head boat patrons. In some cases, the operator will allow the interviewer to board for free or at a reduced

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price, but generally the interviewer will have to purchase a ticket as if he/she was going to fish. If possible, reservations should be made well in advance of the trip since head boats are often full.

#### 6.1.4.8.3 Head Boats (HB)

Once the CHBTS is implemented and head boats are sampled as a single stratum, interviewers are expected to ride the head boat. Individual boat assignments will be made for an upcoming wave, and interviewers should call well in advance to reserve a spot on the boat according to the week and day type specified. It may not be necessary to assign a specific day within a day type to a head boat assignment and the interviewer could choose a day where it appears likely that the head boat will have enough customers to make the trip. Interviewers should probe for the number of reservations already made in order to maximize the probability that the head boat will make that trip, barring bad weather. Trips canceled due to bad weather should be rescheduled as soon as possible.

Canvassing introductions should begin as soon as the boat leaves the dock, and continue until all the anglers are aware of the survey. On head boats it is permissible to conduct partial interviews prior to trip completion. The interviewer can work through the interview up to the items concerning catch, with the exception of area fished, and time spent fishing. Since each angler's name will be on his/her form, the interviewer can go back to each angler and get the remaining information as trips are completed. If more than 75 fishing passengers are on board, the interviewer should use randomize which anglers are interviewed. This can be accomplished by obtaining a total count of fishermen, selecting a starting point such as the middle of the bow, and sampling every  $n$ th angler (determined by dividing the number of fishermen by 75). Final interviewing should begin as soon as the anglers have completed their fishing and the boat begins the return to the dock.

Some form of sub-sampling may also be necessary if the time required for travel back to the dock is minimal. While times vary, an interview and creel inspection requires approximately ten minutes. The interviewer should approximate the number of interviews that can be conducted, and then systematically sample from the total number of anglers on the boat. For example, if only 15 interviews can be conducted and the boat is carrying 45 anglers, every third angler should be interviewed after starting with a randomly selected angler. Under no conditions should the interviewer just approach the more friendly anglers, the anglers with the *most* fish, or the angler with *certain species* of fish.

In some cases, head boats may be too small to get a spot or the boat captain may be hostile and not allow samplers on board. These boats should still be sampled if possible by dockside sampling. When not riding head boats and conducting interviews at the docking site, the procedures are similar to those for charter and private/rental boat sites.

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Additional specialized procedures may need to be established for this separate mode during 2003. The Government will work with the contractor to establish reasonable procedures and incorporate them into training and the interviewer manual.

#### **6.1.4.8.4 Charter Boats (CB)**

Interviewers should never board a charter boat. Intercept procedures for charter boats resemble those for private and rental boats (described below). With charter boat sites, however, it is well worth the effort to call the site in advance to find out the boats' schedules. With this information, the interviewer can plan to arrive at the dock just prior to the scheduled returns. In Waves 1, 2, and 6, specifically, the interviewer may check charter boat schedules by telephone for the assigned site as well as two alternate sites and reschedule the assignment if there are no charter boats going out from any of the three sites due to bad weather. If no charter boats are going out because there is little fishing activity the interviewer should treat the assignment as resulting in zero intercepts.

Interviewers should strive to complete individual interviews and catch records for each member of the charter group. However, this may be difficult for charter boats, since anglers often have little control over the handling of their fish, which are often stored together. Under no circumstances should complete interviews be conducted with charter captains or mates. They are not considered "recreational anglers" even though they might have fished. Captains and mates may be consulted to determine the actual water area fished or other pertinent information such as species identification of fish released alive.

#### **6.1.4.8.5 Private Boats (PR)**

Because there are large differences between one boat landing/docking facility and another, the best procedure for covering a particular site must be determined by the interviewer. For private boat interviews, the fishermen may be interviewed while waiting for a boat hoist or while cleaning the boat at the dock. Others may be interviewed in the parking lot while waiting for access to a ramp to remove the boat from the water. Often, an offer to handle a boat line or assisting in loading the boat onto a trailer is a good way to obtain cooperation for the interview. The interviewer will have to use discretion in determining the best approach.

Ideally, all fishermen on all boats will be interviewed. However, time constraints may not allow for this. Once an interviewer approaches a boat, the interviewer should attempt to interview each angler in the boat. If it is not possible to interview every angler on every boat, the interviewer should randomly select a subset of boats and fishermen to interview. If there are many boats returning at once, a non-biased method of sub-sampling is needed whereby every second or third boat is approached. It is better to interview one angler from each boat than every angler on one boat if an interviewer is unable to interview all

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fishermen on all boats.

**6.1.4.9 Screening for Eligible Fishermen**

The Screening Introduction serves two major purposes:

- To introduce the interviewer and the survey; and
- To determine if the angler is eligible for an interview.

While interviewers will be given several copies of the Screening Introduction, it should not be needed on a routine basis if the interviewer fully understands the study background and eligibility requirements. Angler screening questions must be repeated for each new angler interviewed, regardless of whether interviewed anglers were fishing together or not.

All approached fishermen should be told the interviewer's name and that the study is sponsored by the NMFS. At no time should an interviewer claim to be an employee of NMFS. If the angler is willing to cooperate, the interviewer would then ask the eligibility questions. The MRFSS screening questions are used to determine if the purpose of the trip was recreational, if fishing occurred in saltwater, if they were fishing for finfish or if fishing for shellfish also caught some finfish, and if the fishermen are through fishing in their mode of fishing for the day (see trip definition). To be eligible for an interview, an angler must meet all of the following criteria:

- must have fished in saltwater;
- must have completed his/her fishing trip, defined as one waking 24 hr day of fishing in one mode;
- must have fished in U.S. waters; and
- must be five years of age or older.

*Screening Questionnaire*

Hello, my name is \_\_\_\_\_ and I represent (CONTRACTOR NAME). We are interviewing marine recreational anglers for a study sponsored by the National Marine Fisheries Service of the U.S. Department of Commerce. I'd like to ask you a few questions about your fishing.

1. Was the primary purpose of your trip today for recreation, that is, for fun and relaxation, or was it to provide income either from the sale of fish or from the sale of the fishing opportunity?

Recreation → Continue  
To provide income → End interview, angler not eligible

2. Were you saltwater fishing today? By saltwater fishing, I mean fishing in oceans, sounds or bays, or in brackish portions of rivers.

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- Yes → Continue (if in Maine, Puerto Rico, or U.S.V.I. ask 2a)
- No → End interview, angler not eligible
- 2a. Was the majority of your fishing in Canadian or Non-US waters?
- Yes → End interview, angler not eligible
- No → Continue
3. Were you fishing for finfish today?
- Yes → Continue with question 4
- No → Continue with question 3a
- 3a. Did you catch any finfish today?
- Yes → Continue
- No → End interview, angler not eligible
4. Have you completed your saltwater fishing today?
- Yes → Angler is eligible, start main MRFSS questionnaire
- No → Continue
5. Are you coming back here or going somewhere else to fish?
- Coming back here → Continue
- Going somewhere else → Continue
- 5a. Will you still be fishing from a (SPECIFY MODE)?
- Same mode → End interview, angler not eligible
- Different mode → Angler is eligible, start main MRFSS questionnaire

*Screening Question Rationale*

- Item 1 This question is necessary to determine whether the angler meets the "recreational" criteria. A "to provide income" response to the question would end the screening -- the angler is not a recreational angler. A "recreation" response to Item 1 would lead to Item 2.

For this survey, a recreational fishing trip is one that is taken for fun or relaxation as opposed to one taken to provide income from the sale of fish. The purpose of the trip at the beginning of the day defines the trip. Anglers who sell their catch to cover the expense of their fishing trips are not necessarily fishing to provide income. These anglers would be eligible. A commercial fisherman might have a bad day and think about changing the purpose of the trip. If the fisher started the trip with the purpose of providing

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income from the sale of fish, the fisherman is not a recreational angler and should not be interviewed.

In some states an angler may be "commercial" or "recreational" on any given day. Interviewers must ask about the intent for the particular trip taken that day, regardless of the type of fishing license possessed.

Item 2        The purpose of this question is to verify that the fisherman was fishing in saltwater. An fisherman is a saltwater fisherman if he/she thinks he/she is a saltwater fisherman. At sites where both freshwater and saltwater fishing occur, the interviewer must ask each angler whether they were freshwater or saltwater fishing. Fishermen who say they were freshwater fishing are not eligible for the survey and should not be interviewed. A "no" response to Item 2 will end the screening. A "yes" response will lead to Item 3.

In northern areas of Maine, if an interviewer has reason to believe that an angler may have spent time fishing outside of United States waters, the interviewer should also if the angler fished in Canadian waters. If the majority of his/her effort was **not** in United States' waters, the angler is **not** eligible for an interview and the screening should be terminated. If the "majority" is determined to be in United States' waters, all of the angler's fishing time, catch, etc., should be included on the Intercept questionnaire -- even time spent and fish caught in foreign waters.

Item 3        The purpose of this question is to verify that the person is a finfish angler, that is, the fishing trip is directed at fish with fins. A "yes" response to Item 3 would lead to Item 4. Note that a person does not have to have caught a finfish to participate; he/she must only have been fishing for finfish. A "no" response to Item 3 would lead to Item 3a.

Item 3a.      The purpose of this item is to identify shell fishermen who might have landed finfish. The only way a shell fisherman can be eligible is for him/her to have caught one or more finfish. A "no" at this item would lead to termination of the screening. A "yes" would lead to Item 4.

The angler's actual catch has no effect at all on his/her eligibility. If the angler has thrown fish back or did not catch anything at all, the angler would still be eligible for an interview as long as there was intent to catch finfish. Generally, respondents pursuing crabs, shrimp, lobster, clams, oysters, and other invertebrates are not eligible for the survey; however, if they happened to catch a finfish (whether it was kept or not) during the fishing trip, the respondent should be interviewed.



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- Item 4 All saltwater fishermen are asked whether they have completed their fishing for the day. If the response is “yes,” the angler is eligible for the survey and the interviewer should start the main Intercept Questionnaire. If the response is “no,” the interviewer will continue by asking Item 5.
- Item 5 Fishermen who are coming back to the same site to fish are eligible only if they plan to fish.
- Item 5a Fishermen are not eligible if they are planning to fish from the same mode at the same site later in the day. Similarly, fishermen who are going somewhere else to fish are eligible only if they plan to fish from a different mode at their next site. They are not eligible if they are planning to fish from the same mode at a different site later in the day.

For the most part, interviewers will be intercepting fishermen who have completed their fishing trips. A trip is considered completed if an angler has completed fishing in that mode for the day. If an angler is moving from one site to another site in the same mode, that angler has not completed the trip and is not eligible for an interview. If an angler is moving from one mode to another mode (e.g., from a private boat to a charter boat) at either the same site or different sites, that angler has completed a trip and is eligible to be interviewed about that trip. If an intercepted angler has completed two trips, having fished in two different modes, the interviewer should ask questions pertaining only to the most recently finished trip. No incomplete interviews or complete interviews of anglers who have not completed their fishing trips shall be accepted towards the intercept interview quotas. There is an exception to this rule for the beach-bank mode (Section 6.1.4.8.1).

A one-day trip refers to the angler’s waking day, as opposed to a calendar day. A trip beginning in the evening, but ending past midnight, is considered one trip. When an interviewer intercepts an angler who has been on a trip lasting several days, most likely a boat trip, each of the angler’s waking days is considered a separate trip. The interview should be conducted considering only the most recent waking day of fishing. If the angler’s waking day was more than 24 hours, only the most recent 24 hours should be considered.

**6.1.4.10 Incomplete Trips**

It is permissible to obtain some interviews from anglers who have not yet completed their trips, but only in the beach/bank mode. These are called “incomplete trip” interviews. To be eligible for an incomplete trip interview, however, the angler must have completed at least one-third of the fishing trip. Also, incomplete trip interviews may never exceed 50 percent of the interviews obtained in the beach/bank mode. After half of an interviewer’s on-site time has elapsed, he/she may get one incomplete trip beach/bank interview for every complete trip beach/bank interview that is obtained. Incomplete trip interviews

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should never be taken during the first half of an interviewer's on-site time, but only as a last resort during the latter half of the interviewing day.

#### **6.1.4.11 Privacy Act Statement**

As soon as the fisherman's eligibility is established, the interviewer must read the Privacy Act statement, which states:

"Your participation in this survey is voluntary. Your responses will be treated as confidential records under the Privacy Act of 1974 and NOAA Administrative Order 216-100."

The brief statement above satisfies the Privacy Act requirements, as long as an additional form with the information is available. This information is included in the letter from NMFS, which should be handed out to fishermen who want more information. Most fishermen are satisfied after hearing the abbreviated statement.

#### **6.1.4.12 Conducting Complete Intercept Interviews**

Interviewers are responsible for conducting complete intercept interviews for eligible fishermen at an access site in an unbiased manner. A complete interview includes asking each respondent data about their fishing trip, asking demographic data that is used to match intercept data to the MRFSS or CHBTS telephone data, examining the catch for species identification and enumeration, and weighing and measuring the catch. For the intercept survey, the quota is the number of complete, usable interviews and does not include refusals or incomplete interviews of eligible anglers.

All eligible anglers shall be asked to:

1. provide details for the current trip, including: mode of fishing, gear used, general area of fishing (river, bay, ocean less than three miles, ocean greater than three miles, time spent actively fishing, time spent getting on the water (boat modes), fish targeted, number of people fishing together, and details about any fish caught unavailable for inspection (species and disposition of unavailable catch);
2. recall their total number of marine recreational fishing trips for finfish made in the past two months, and the past twelve months;
3. allow the interviewer to identify, weigh and measure any fish available for inspection, and to provide the interviewers with details about the disposition of this available catch;
4. give brief details about where they live including their county and state of residence, postal zip code, and whether or not their home has a telephone, and
5. provide their name and a telephone number for validation purposes.

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### **6.1.4.13 Conducting Economic Survey Intercept Interviews**

The economic intercept surveys will be administered to all survey eligible anglers aged sixteen and above. If an individual is under the age of 16 or an interviewer is unable to determine the age, then terminate (after completing the intercept interview) and thank respondent.

The contractor shall ask the economic intercept survey questions at the end of the routine MRFSS verbal questions and before examining the catch. This should not be done if it would decrease the interviews where the catch is examined. If it does not affect the examination of the catch, this ordering could improve the flow of the interview and the response rates. Anglers would not be told these are additional questions; rather the survey would appear to be a normal part of the MRFSS survey.

Data from the Economic Intercept survey will be coded and keyed to match exactly the identification code (ID\_CODE) from the MRFSS Intercept Survey. Thus, it will be necessary to administer these surveys congruently. Questionnaires will be administered to anglers who are at least 16 years of age (regardless of target species), and who complete all MRFSS **key** data items preceding the catch inspection questions.

The NMFS shall supply the Contractor's interviewers with copies of a brochure which explains the purpose for the economic data collection. The Contractor shall be responsible for distributing a copy of this brochure to each intercepted angler who requests information on the MRFSS Supplemental Economic Survey's purpose.

### **6.1.4.14 Roving Assignments**

Rover assignments are special procedures that typically are used during the second month of a wave, when no interviews have been obtained with residents of coastal counties. Roving assignments are given out to interviewers when circumstances warrant. Interviewers should never attempt these types of assignments without specific direction from the contractor.

Rover assignments are mode-specific. That is, an interviewer might be asked to do a SH, a PC, or a PR Rover. On a Rover assignment, the objective is to obtain interviews in the target mode from coastal anglers. Coastal anglers are those whose state and county of residence are the state of intercept and a county located within 25 or 50 miles of saltwater in that state, depending on the wave and state. The Intercept Contractor will either designate a starting site or ask the interviewer to suggest a starting site -- a site known to be active. While that site must be visited first, other "standard" on-site procedures do not have to be followed. Instead, these special Rover assignment procedures should be

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followed:

- If the interviewer cannot obtain interviews with coastal residents at the assigned site, he/she can visit any alternate site in the state with the assigned mode. The alternate site(s) do not have to be the next nearest or within a one-hour drive of the starting site. If the starting site has only beach, bank, or natural shoreline fishing, the interviewer is not restricted to beach/bank interviews.
- There is no three site limit. The interviewer can visit as many sites as he/she wishes so long as there is a possibility of meeting the Rover objective.
- On a Rover assignment it is permissible to interview non-coastal and out-of-state anglers. It is also permissible to interview anglers from other modes. However, the main objective is to get interviews with coastal residents in the target mode. If two interviews with coastal residents are obtained before the maximum of 20/30 "good" interviews are obtained in the mode, then the interviewer must stop at 30. However, the interviewer can keep interviewing beyond the 30 person maximum until such time as two interviews are obtained with coastal residents.

Rover assignments are given out one at a time in a specific mode. Therefore, the outcome of each Rover must be known as soon as possible. Interviewers who are asked to take a Rover assignment must call their designated contact the business day following the Rover. The interviewer should be prepared to report on the number of "good" interviews obtained in each mode and the state and county of residence of all anglers intercepted.

Since an unlimited number of sites may be visited during a Rover assignment there will not be room to code all sites visited on the original ASF. Interviewers should record alternate sites (in excess of 2) on additional blank ASF's in the order they are visited and staple them to the original ASF.

### **6.1.5 Completion of Assignments**

#### **6.1.5.1 Completing the Assignment Summary Form**

While on assignment, interviewers are responsible for tallying all people at the site by activity by whether they were interviewed or not, and entering that data on the ASF.

Upon completion of each separate assignment the interviewer is responsible for completing an ASF (Appendix G). The ASF is submitted with all the interview questionnaires and updated SDFs for data entry.

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The ASF has to be completed for *every assignment* whether or not the interviews are obtained. The ASF should be printed on a different color of paper to help distinguish it from the SDF and Interview Forms. The ASF (ASF) should be completed according to the following instructions:

*NAME* – The interviewer should print and sign their name in the rectangular box provided at the top right of the page.

*ASSIGNMENT NUMBER* – This entry indicates if this was the first or second assignment for the day. This entry will be a “1” unless an interviewer completes two assignments on the same day. In that case they should write “2” for the second assignment of the day. These assignments are **only** given to the most efficient and qualified interviewers, and are **extremely rare**.

*INTERVIEWER CODE* – The interviewer enters their four-digit identification number.

*YR/MO/DAY COMPLETED* – The current year will be hard-coded on the form. The interviewer should enter a two-digit number for the month followed by a two-digit number for the day of the month when they completed the assignment. Do not use any forms with a year other than current year – forms may look similar, but changes may have been made. All forms from previous years should be discarded.

*STATE* – Enter the two-digit state code for the state where the assignment was completed.

*MODE* – Enter the appropriate one-digit number for the ASSIGNED mode. Use “1” for shore mode, “2” for charter boat mode, “3” for private boat mode, and “4” for head boat mode.

*CONTROL NUMBER* – Enter the appropriate four-digit control number for the assignment. This number is provided on the list of assignments that interviewers receive from the Intercept Contractor or RR.

*DID YOU RIDE A HEAD BOAT?* – This question should be answered if the interviewer is interviewing in the Head Boat or a combined Head and Charter Boat mode. If this question is not applicable to a particular assignment, then the box is left blank and the interviewer skips to the *TOTAL ON-SITE HOURS*.

*HEAD BOAT DOCK-TO-DOCK HOURS* – Enter the hours from the time the boat left until it returned. This question is applicable only if the interviewer rode a head boat.

*TOTAL ON-SITE HOURS* – Enter the calculated total on-site hours for the assignment. If an interviewer calculates their total on-site hours in the “On-Site Record” section of the form, they should be sure to also enter the result in the four coding boxes provided here.

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Remember to round to the nearest .25 hours (15 minutes = 0.25 hours).

*EDITING HOURS* – Enter the total editing hours for the assignment. In the past, intercept contractors have placed limits of on editing time per assignment (five minutes per interview guideline, six minutes if there is an add-on survey in the state, with a maximum of two hours of editing time claimed per assignment). This limitation is at the discretion of the offerors.

*TOTAL MILES* – Enter the total number of miles an interviewer traveled to complete their assignment. They can calculate the total miles in the “travel section” on the right side of the form, but should be sure to enter it in the three boxes provided. Remember to round to the nearest mile.

*REASON FOR FIRST ALTERNATE SITE* – Leave these boxes blank if the interviewer stayed at their assigned site for the entire assignment. If they left the assigned site to visit an alternate site, enter the appropriate code number that best describes the reason for leaving the assigned site to their FIRST alternate site. The list of two-digit “reason codes” is located on the bottom of the ASF form. A new code should be added for “conducting charter or head boat pre-validation.”

*SUMMARY SECTION* (bottom part of the form) – The first row of this section is labeled “Asg.,” which is an abbreviation of “Assigned Site.” The interviewer should **always** record the county and site codes for the **assigned site** in the first row. When applicable, the county and site codes for the first and second alternate sites should be recorded in the second and third rows of coding boxes. The second section represents the number of “good” (status 1 & 2 only) interviews obtained, by mode, for the assignment. The third section represents the number of status 3 (initial refusal), 4 (language barrier) and 5 (refused **key** item) anglers encountered in the **target mode**. Status 3, 4 & 5 anglers encountered in modes **other than the target mode** should be indicated in the Other Modes Status section.

The interviewer must enter his/her tally of “missed” and “ineligible” anglers encountered **in the target mode only at all sites visited**. “Missed” anglers are those in the target mode who were *probably eligible*, but who were not approached because the interviewer was actively interviewing other anglers. Under “Not Done” the interviewer should enter his/her estimate of the number of anglers actively fishing at the site in the target mode when he/she leaves the site. If the interviewer returns to a site later in the assignment, the estimate should cover the number of anglers actively fishing in the target mode when he/she leaves the site for the **last time**.

The other “ineligible” categories include those approached but found to be ineligible because of responses to questions in the screening introduction. Interviewers need to make sure they understand what should, and should not, be included in these categories.

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- Only include anglers who are “probably eligible” for the survey, i.e. those who were fishing, or caught a finfish. Do NOT include sunbathers, swimmers, boaters, etc.
- “Not US” = Recreational anglers fishing more than 200 miles off shore or in Mexican, Canadian, or other foreign waters (i.e. not in U.S. waters).
- “Not Rec” = Commercial anglers/anglers whose primary purpose of the trip is to provide income.
- “Not Salt” = Recreational anglers fishing in freshwater.
- “Not Fin” = Saltwater recreational anglers who did not target, or catch, finfish.
- “Not 5 Yrs” = Saltwater recreational anglers under 5 years of age who targeted, or caught, finfish.

*ON-SITE RECORD* – This section of the form is provided for the purpose of recording the “start” and “stop” times for visits to each site during the course of the assignment. Interviewers should always identify each site by entering the appropriate code number in the boxes under the “site” heading. Leave the “site” blank if the site visited is a “new” site, but be sure to indicate that it is a new site in the additional space provided. List the sites in the order that they are visited, including any return trips to sites previously visited. No more than two alternate sites may be visited per assignment. **Interviewers can not record more than five visits on the ASF and should NOT use a second ASF, or write in additional visits below the provided boxes.**

*TRAVEL* – This section is provided for the calculation of total miles traveled. Record both “beginning” and “ending” odometer readings, calculate the difference, and record that difference in the space labeled “Total Miles.” Be sure to record this result, rounded to the nearest mile, in the coding boxes labeled “Total Miles.”

*EDITING TIME* – This section is provided for the calculation of total editing time. Record both “start” and “stop” time, calculate the difference, and record that difference in the space labeled “Editing Hrs.”

**6.1.5.2 Cleaning and Storing Equipment**

Interviewers are responsible for all equipment, which should be wiped clean and dry before finishing a day’s work.

*Care of Scales:* All interviewers are expected to take good care of their scales. These scales are expensive, and it is critical to the success of the survey that all interviewers have accurate scales every time they are in the field.

Interviewers should never store any spring scale by hanging it from the weighing hook as this will stretch the spring. They should avoid contact with water if possible and never leave scales lying in a puddle or bucket of water. If the scales do come in contact with

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saltwater, interviewers should rinse with freshwater and allow them to dry thoroughly before storing. Spring scales should be protected in sealed, dry, clean zip-lock baggies when not in use.

When interviewers receive new scales they should spray them with any all purpose anti-corrosive grease (e.g. WD40) for extra protection. This should be repeated every four to six months, depending on use.

#### **6.1.5.3 Calling in Weekly Sample Tallies**

The Intercept Contractor should designate the contact point, method such as email, telephone, web site, and schedule for interviewers to report the number of eligible interviews obtained in a week (Monday through Sunday). These tallies must be reported to NMFS by the Tuesday of the following week. This is important for meeting target sampling goals as a sampling wave progresses. Incomplete weekly tallies may result in a failure to meet the required quotas. For this reason, even an assignment in which zero intercepts were obtained must be reported (and sent in). The following information for each assignment should be provided when reporting the weekly assignment results:

- Interviewer name and identification number;
- the originally scheduled date and site;
- the state where the assignment was completed;
- the control number (a number given to each assignment);
- the date the assignment was completed;
- all sites visited (original and alternate)
- total number of “good” interviews obtained by mode Example: 3 PR mode interviews and 2 PC mode interviews) by site; and
- a telephone number and time at which the interviewer can be reached.

#### **6.1.5.4 Editing Data**

At the end of each assignment, interviewers are expected to review and edit all forms for completeness, legibility, and accuracy. Editing may occur while on site waiting to interview eligible fishermen or after the interviewer has returned to his/her office (or home).

#### **6.1.5.5 Delivering Completed Assignment Packets**

As specified by the contractor, interviewers should mail or deliver the forms for a week’s (or less or more) assignments to the contractor’s designated contact. A packet for each assignment should include:

- One ASF;
- Up to three SDFs (one for each site visited); and
- All completed Intercept Questionnaires, and



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- All “bad” status 5 interviews.

## **6.2 Conducting the Economic Telephone Follow-up Interviews**

The Follow-Up Telephone Interview is designed to collect data which is not trip-specific and does not require immediate questioning of the respondent for accurate recall. The Contractor shall attempt to contact all individuals who indicate they would be willing to participate in the Follow-Up Telephone Interview (including more than one member of the same household), within four weeks of the intercept data collection. Only anglers who were intercepted in the MRFSS should be interviewed. Interviewing of another, so called “proxy”, respondent who may feel qualified to supply information for the missing angler is not permitted. If after reading the introductory paragraph to the follow-up, it becomes obvious that the respondent has been previously interviewed about another trip (in a different wave or even within the same wave), an abbreviated version of the questionnaire should be used.

These data shall be coded to match the identification code (state, site, date, and ID\_CODE) of the corresponding initial MRFSS Intercept Survey interview. Appropriate coding must be incorporated to allow the linkage of the telephone follow-up records to the intercept interview of same angler. Additionally, it is necessary to link all subsequent, shortened follow-up interviews with the angler’s original long-form interview. The angler’s full name and phone number may be required at the time of intercept to track this. The contractor may suggest other ways to code and track this information.

The Contractor for the MRFSS Intercept Survey shall work together with the NMFS to develop the questionnaire to be used for the Follow-Up Economic Telephone Interview in each given year for a given Region. NMFS will supply draft questionnaires at least two months prior to the start of data collection. The Contractor shall provide advice on wording and structure of questions. The final questionnaires shall be developed by at least one month prior to the start of data collection. The questionnaire shall consist of 30-40 questions. “Key” questions shall be identified in the questionnaire by an asterisk (\*). Responses to key questions will be considered more important for proper analysis of the data than responses to non-key questions. The Contractor shall be expected to specifically monitor refusal rates for key questions and to make suggestions for changes to reduce key item refusals.

### **6.2.1 Survey Pretest**

A pretest shall be conducted for the Follow-Up Telephone Interview components. A minimum of 15 pretests shall be conducted for the combination of interviews at least one month prior to the start of data collection. The contractor shall submit a brief report entailing recommendations and proposals for procedural changes based on pretest results.

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The expertise of the Contractor will be relied upon to make inferences as to the pretesting location, strategy, and design.

#### **6.3 Charter Boat Directory Maintenance**

Maintenance of the CHBTS directory must occur prior to the sample draws for the next wave's sampling by the Telephone Contractor. Maintenance includes addition of new vessels, de-activation of vessels if they leave the state or the charter or head boat fishery, and updates to records for vessels already in the directory, as needed.

Appendix F contains the variable names, formats and codes for the CHBTS Directory. Updates should be accomplished by a variety of means including checking license files, advertisements, and field contacts. The directory should include all vessels, whether they are known to be active or not. De-activated vessels should be kept on the directory but respondent eligibility is coded so they are not used by the Telephone Contractor in the sample selection.

Variables critical to telephone sampling (the key elements listed in **5.2.1.1.**) should be the priority for updating. The program that produces the sample draws and sample frame (a SAS data file following the naming convention 'gd<st><yy><wave>', e.g. gdsc006.sas7bdat - for South Carolina 2000 wave 6) also produces a 'bad list' file which lists the vessel identifier and flag variables indicating which key element is missing, hence the exclusion of the vessel from that wave's sampling frame (follows naming convention 'bd<st><yy><wave>'). This list will be delivered by the Telephone Contractor with the Sampling Frame and Weekly Draws to the Intercept Contractor and NMFS. The Intercept Contractor should attempt to obtain the missing information, either by phoning the vessels' representative, in person if the docking location is known, or through indirect sources such as charter boat booking offices or advertisements. Additional missing elements in the directory should be identified and targeted for updating throughout the subsequent wave. Other important information includes the vessel length, mailing address, location for validating (MRFSS access site), additional operators and contact information. When editing or updating the directory the 'date\_mod' field should be updated to note any change to the vessel record; the 'date\_new' field should only be completed once, when the vessel record is originally added to the directory (or the date of completion of the initial directory for the state). These date fields are important for version control and evaluation of the status of the directory.

#### **6.4 Charter Boat Pre-validation**

At the beginning of the sample wave, appropriate contractor personnel should determine which of the assigned vessels work out of access sites which have been assigned for intercept interviewing, or are on the travel route to or from intercept assignments. The

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intercept interviewers would then be assigned pre-validations to perform with specific assignments. If absolutely necessary, separate pre-validation assignments (travel to sites solely for the purpose of validating CHBTS-selected for-hire boats) may be scheduled which would specify dates, sites and vessels to be validated.

During site visits, the interviewer should check permanently assigned boat slips to see if the vessel is in or out. The visual check will also work with vessels that are assigned to a permanent location in a storage shed. The sampler next needs to determine if vessels not assigned a permanent boat slip or storage shed are utilizing a site on a regular basis (e.g. a guide tends to use the same marina's ramp for launching his boat and meeting clients). This information can be used to update the directory and allow for indirect pre-validation through queries with the marina's dockmaster (i.e. 'Has Capt. Q launched his boat today? Is he on a charter fishing trip?').

If the preliminary check determines that a vessel is out, the sampler must then try to determine what activity the vessel is engaged in such as actively charter fishing, fishing for his/her own pleasure, checking out the engines, etc.. In order to do this, the sampler may speak to a reliable source such as a marina operator or booking agent. If the source wants to know why you need this information, be courteous and explain that we are trying to locate and document areas with charter boat activity in order to improve our effort estimates. If a boat captain asks why the sampler is inquiring about fishing activities the sampler should explain that we are required to obtain data to help us determine if fishing activities are being under or over reported (both cases have been documented) during the weekly for-hire fishery phone survey. The sampler should also explain that he is also trying to update the site register in order to improve our dock side sampling efforts.

While at a site the sampler should also try to identify charter boat vessels which are not included in the CHBTS during the sample week but who are using the site. This information should be provided to the appropriate staff at the contractor's office to update the for-hire vessel directory which will help with future pre-validations.

For sites with reliable sources, such as marina operators or booking agents, the sampler may make one pre-validation phone call per week. During the phone call, the surveyor will need to document which charter vessels are out of port and try to determine what activity they are engaging in.

Vessels may also be pre-validated during dock-side intercept sampling if the vessel has been pre-validated previously during the week or will be pre-validated subsequently during the week. However, if intercept interviews are obtained from a boat that is on the list of those selected for CHBTS sampling, then a pre-validation record should NOT be included for that date (i.e. do not interview anglers from and validate the same boat on the same day - if the captain/operator understands what a pre-validation visit is and obviously notices you interviewing his anglers then he is likely to be sure he reports that trip - this is a bias

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which may influence him to change his 'normal' reporting behavior). Validating boats at a PC-assignment site is acceptable if their anglers are not intercepted (e.g. visit the site for pre-validation in mid-afternoon for pre-validation of several selected vessels, then return later and interview anglers coming off non-selected for-hire boats at the completion of their trips).

## 7.0 Interview Procedures

Sample Intercept and Economic Survey questionnaires can be found at <http://www.st.nmfs.gov/st1/mrfss/>. NMFS reserves the right to make changes in data items for regional or annual customization and in order to improve response rates or accuracy of the responses. NMFS will submit any questionnaire changes to the Contractor at least 45 days before the beginning of each wave. All questionnaires must be approved by NMFS.

### 7.1. General Instructions

Some general instructions for conducting the intercept interviews and the economic surveys are:

1. Wording - The questions to be put to the anglers are written out in full for a purpose. Methodological studies have shown that even slight changes in wording, for example, "should" versus "could", drastically influence item response. The interviewer should always read each item on the questionnaire exactly as it is written. Instructions to interviewers that are not to be read during the interview are written in italics.
2. Provide Definitions, Not Answers - If the angler asks for the interviewer's opinion about an item, the interviewer should provide a definition for the item in question, rather than supply an opinion or the actual response, for most cases. For example, if an angler is unsure about what gear he was using, the interviewer should explain the differences and let the angler decide.
3. Codes for Not Applicable Questions - As a general rule, items on the questionnaires that are not applicable to a particular angler (i.e., items falling out in skip patterns) are coded with "8"s, as indicated on the questionnaire.
4. Codes for Refused Questions - As a general rule, items on the questionnaires that are refused are coded with "9"s.
5. Codes for Don't Know - As a general rule, items on the questionnaires that the respondent does not know the answer to are coded with "9"s and a last digit of "8".

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6. Right Justify and Add Leading Zeros - If an answer does not require use of all boxes provided for an item, the interviewer should right justify the entry and add leading zeros.
7. "Other (SPECIFY)" - In some cases, the response codes for some data items are not exhaustive and include codes designated "Other (SPECIFY)". If a respondent gives an answer not covered by the pre-coded responses, the interviewer should enter the "other" code and write out the respondent's exact response next to the coding boxes. Questions requiring written responses will be specifically identified in the statement of work or in the written specifications for questionnaire changes or use of flexible questions.
8. Notes/Footnotes - For some items, footnotes will be required under some conditions. Examples are: if weight and/or length measurements are missing; if a site code is needed; if a state and/or county code; or if a species code is needed. In such cases the interviewer should place an asterisk (\*) by the item and provide a footnote explaining the situation near the bottom of the Coding Form.
9. Best Use of Time - There will be times during the day when the interviewer will seemingly have little to do. This time can be used to fill in the identifying information on forms that will be used later at the site. This time can also be spent reviewing, editing and "cleaning up" completed Coding Forms.
10. Maps - Maps for the state being sampled should be available to help interviewers locate areas of fishing. Saltwater cut-off points for rivers are particularly useful to help determine if the respondent was fishing in freshwater or saltwater and may be supplied by the MRFSS staff.
11. Terminate - If a respondent refuses or can not answer a "key" question, the interviewer must thank the respondent pleasantly and say goodbye. The interview status code should be checked with the appropriate code.

**7.2 Intercept Questionnaire****7.2.1 Key Items**

Several data items are critical to the data expansion routines and are termed key items. If a response to any of the key items is missing, then the interview is not valid. Key items have bold print in the following instructions and have asterisks next to the Item number on the Intercept Questionnaires and Coding Forms. Key items include mode and area of fishing; distance from shore; state and county of residence; group catch questions; catch

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disposition, number of catch by species; and party information.

#### 7.2.2 Item-by-Item Instructions

These instructions apply to the 2001 Intercept Questionnaires (Appendix G). Some minor changes in data items should be expected from year-to-year. Changes from 2001 to 2003 are:

- The Privacy Act statement should be changed to more adequately reflect those requirements (section 6.1.4.11) and apply less stress on the fact that answers are voluntary.
- fishing area

Items 1-10 are not questions to be asked of the angler. They are identifying information.

- Item 1      Record Type - "1" is reserved for all intercept interviews but is not on the form.
- Item 2      Assignment No. - "1" is preprinted on the Coding Form. The instructions read: "Enter "1" if first assignment for day; "2" if second assignment for day." It is possible, but rare, for one interviewer to be given two assignments in the same day. If an interviewer does two assignments in the same day, the interviewer should overwrite the pre-coded "1" with a "2" on all Coding Forms submitted for the second assignment.
- Item 3      Interviewer Code - Each interviewer will be given a unique four-digit identification number. This number must be used on all submitted forms.
- Item 4      Year/Month/Day - The interviewer should record the date of the intercept. The year is usually precoded on the form, therefore, the interviewer should only enter the month and day (two digits each).
- Item 5      Interview Number - Throughout an assignment the interviewer should consecutively number the forms completed for the assignment. The first form used should be coded "01", the second "02", etc., regardless of whether the interview was obtained at the assigned site or an alternate site. All forms sent in should be numbered, regardless of interview status. At the end of the assignment the last number used should be the same as the number of forms submitted.
- Item 6      Hour - Using military time, the interviewer should record the time the interview was completed. Military time runs on a 24-hour clock starting at

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0001 hours (one minute past midnight) and ending at 2400 hours (midnight). For example, 4:45 p.m. should be coded "1645" hours.

- Item 7      State - The interviewer should enter the two-digit FIPS numerical code for the State of intercept (Appendix A).
- Item 8      County - The interviewer should enter the three-digit FIPS numerical code for the county of intercept (Appendix A)
- Item 9      Site - The interviewer should enter the four-digit numerical code for the site where the interview takes place. This will not necessarily be the assigned site. Site codes and names are unique and are found in the Site Register. If the interview takes place at a newly discovered site not listed on the Site Register, the interviewer should write the name of the site next to the coding boxes and leave the boxes blank, and would also fill out a new Site Description Form.
- Item 10     Interview Status - This item must be completed at the end of the interview. It serves as an indicator of interview "completeness". Interviews of status "1" or "2" are "good" interviews in that all **key** data have been obtained. Status "1" and "2" interviews do count toward the interviewing goal of 20/30 interviews. Interviews with a status of "5" do **not** count toward the interviewing goal of 20/30 interviews.
- "Questionnaire complete = 1" - This code should be used if the angler responds to all items asked in the interview. In other words, the angler does not refuse to answer any question.
- "Refused non-key items = 2" - This code should be used if the angler refuses one or more non-key items but answers all key items. If a angler refuses a non-key item, the interviewer should code "9"s in the coding boxes at that item and continue with the next question.
- "Refused key item = 5" - This code should be used if the angler refuses to answer a key item. If a key item is refused, the interviewer should code the item with "9"s and terminate the interview. Status "5" forms do not count toward the goal of 20 "good" interviews.

Beginning with Item 11 are questions to be asked of the anglers. Boxed items on the Intercept Questionnaire are not asked, but are either instructions to the interviewer or items to be recorded by the interviewer. Key questions are indicated by bold item numbers and printed asterisks.

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**\*Item 11** Fishing From Which Mode? - Interviewers must use discretion in the wording of this question for SH anglers. Obviously, if an angler is leaving a pier, from which no boat fishing was possible, it would be inappropriate to ask whether that angler was fishing from a charter boat. A pier angler should be asked: "Would you say you were fishing from a pier, a jetty, or what?" As much as possible, the interviewer should include in the stem of the question responses from at least two coding categories.

All HB, CB and PR anglers should be offered all four boat alternatives: "Would you say you were fishing from a head boat, a charter boat, a private boat or a rental boat?" If the interviewer can definitively determine that the angler's response is incorrect then the technically correct response should be coded. If the angler has difficulty with the definition of a particular mode, the interviewer should provide definitions and let the angler decide. Charter and Head Boats should be coded as the type of boat it predominately operates as to agree with the stratification of the for-hire fleet as coded in the CHBTS Directories.

On occasion, the angler will be unable to give a short answer to Item 11. That is, there might be extenuating circumstances that require a more detailed response. The following examples are illustrative of how these "detailed" responses should be handled:

IF THE ANGLER SAYS:	CODE THE MODE AS:
"Bulkhead"	"2" for Jetty, Breakwater, Breachway
"This used to be a bridge but it is now used as a fishing pier."	"1" for Pier
"I hired and fished from a guide boat."	"7" for Charter boat
"I boated to a pier/dock/bridge/causeway, got out of the boat and fished from the pier/dock/jetty.../causeway."	"1", "2", "3" for pier, jetty/breakwater/breachway/, or bridge/causeway.
"I boated to an oil/gas platform, got out of the boat and fished from the oil/gas platform."	"4" for Other man-made structure and write "oil/gas platform"
"I boated to a beach/bank, got out of the boat and fished from the beach/bank."	"5" for Beach or bank



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"I boated to a reef, got out of the boat and fished while standing on the reef."	"6", "7" or "8"- Code to type of boat used
"I boated to a barge, got out of the boat and fished from the barge."	"6"-Head boat

**\*Item 12**     Type of Water Fished? - Anglers are asked what type of "water body" they did most of their fishing in. The technically correct response should be coded at Item 12, instead of an obviously incorrect response from the respondent. For a SH angler, it may not be necessary to ask the question. This would be true if the interviewer has observed the fishing and can code the correct water body. Similarly, if an interviewer has ridden on a head boat, the interviewer should code the correct response without asking the question. All other boat anglers will have to be asked the question, since boats can travel great distances.

If the angler responds with an answer other than "ocean/gulf", the interviewer will need to probe to determine the correct response. The follow-up probe is: "What (sound/river/bay/inlet) was that?" The response list for Item 12 contains estuaries that have been recognized by NMFS and the Environmental Protection Agency as "National Estuaries". If the named sound, river, bay or inlet is part of one of the estuaries on the list, the interviewer should code to the appropriate estuary. Maps showing the boundaries of each estuary are provided in the Intercept Coding Manual at [http://www.st.nmfs.gov/st1/procurement/mrfss\\_survey.html](http://www.st.nmfs.gov/st1/procurement/mrfss_survey.html) with user id = demo and password = ur2sea. If the named sound, river, bay or inlet is not part of a listed estuary, the interviewer should code "2" for sound, "3" for river, or "4" for bay. "Inlet" should be coded "5", with the word "inlet" written out in the white space adjacent to Item 12 on the Coding Form. "Bayou" should be coded "5" with the word "bayou" written in the white space adjacent to Item 12.

If the angler fished in more than one "water body", that angler should be asked in which "water body" the majority of time fishing was spent.

"Open bays" are included with "ocean/gulf" in the "Open water" category (Code "1"). Open bays are not true bays but stretches of ocean that are called "Such-n-such" bay by local residents. An example would be "Cape Cod Bay".

If a "1" is coded at Item 12, the interviewer should continue with Item 13. If anything other than a "1" is coded at Item 12, the interviewer should code

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Item 13 with an "8" and continue with Item 14.

**\*Item 12a** Water Body Fished (ACCSP) -This is a new item - An 8-digit (xxx.xxxx) code will be used to further identify the specific area fished. These codes are being developed by the ACCSP and will be provided in tabular and figure form (maps with areas denoted or gridded) by the NMFS. A follow-up question to No. 12 will need to be added to the forms asking the angler to further clarify by pointing to a location on provided maps to identify the area fished. The specific areas are generally well-known bays or tributaries of the estuaries coded in 12 above, or are large gridded coastal ocean areas delimiting state or federal waters as in 13 below. This question should be added to the questionnaires and data entry application, but may not be implemented immediately upon start-up of this contract. The startup is dependent on provision of maps and approved data codes and files from the ACCSP (this is expected some time in 2002).

**\*Item 13** Three or Ten Mile Limit? - This item is pertinent only to anglers fishing in "open water" (Code "1" at Item 12). If Item 13 is not pertinent, it should be coded with an "8".

This question is used to determine the effort and catch in State versus Federal jurisdictions. State jurisdiction occurs within the State territorial sea while Federal jurisdiction occurs in open waters beyond the territorial sea. Most States' territorial seas extend three miles from shore. The exceptions are West Florida, Texas, and Puerto Rico where the territorial sea extends approximately ten miles from shore. Since anglers fishing in the shore (SH) mode must have fished within three or ten miles of shore, there is no question to ask shore anglers. The interviewer should automatically code Item 13 with a "1" (three miles or less) for states other than Puerto Rico or "3" (ten miles or less) for Puerto Rico and continue with Item 14. Anglers fishing in the boat modes (HB, CB, and PR), however, must be asked the "three or ten mile" question. The interviewer should enter the appropriate response code at Item 13 and continue with Item 14.

Item 14 Gear? - This question is asked of all anglers. If the angler has used more than one type of gear, he/she should be asked which he/she spent more time using. The gear used the majority of the time should be entered. Only one gear box should be checked, even if the angler used more than one gear. Definitions for fishing gears are:

Hook and Line - Traditional rod and reel or hand lines. Trolling, surf fishing, bottom fishing, chum fishing and fishing with floats are all examples of uses

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of this gear.

Dip Net - A small hand net consisting of a handle attached to a metal ring with mesh attached, often used to land large fish but also used to catch schools of smaller fish. Examples of the use of this gear are to catch bait fish in tide pools or to catch herring during spawning runs upstream.

Cast Net - A large net, weighted around the edges, which is cast out and falls over the fish, thereby entrapping them. This gear is typically used to catch baitfish or shrimp.

Gill Net - A flat net suspended vertically in the water with meshes that allow the fish's head to enter the net but which catches on the fish's gills as it attempts to withdraw. This is not a legal recreational gear in many states.

Seine - A large net with weights on one end and floats on the other used to enclose fish after dragging along the bottom near shore by hand. This gear is typically used to catch baitfish or shrimp.

Trawl - A large cone-shaped net which is dragged along the bottom from a boat. This is not a legal recreational gear in many states.

Trap - Usually a metal screen box, extended by a rope, which has bait inside and a small hole which the fish can swim into but not return. Examples are fish pots and crab traps.

Spear - A sharp, barbed pole that is projected or thrown into the fish. Examples are flounder gigs and SCUBA diving spears.

Hand - Catching fish by hand without the aid of any implements. Examples are picking up fish trapped in tide pools or chased up onto the beach by predators.

YoYo -. A round, plastic or aluminum, apparatus around which a fishing line is wrapped. A right handed fisherman would hold the yoyo in his left hand, take the end of the fishing line in his right, swing the hook and sinker around a few times, then throw the baited hook out into the water. The line streams off the yoyo. This gear is commonly used in the U.S. Caribbean, and this gear code should only be used there.

Item 15a Time Fishing? - All anglers are asked how many hours they spent fishing with gear in the water in the mode of intercept on the day of intercept. If the angler fished at more than one site in the mode group of intercept, he/she

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should be reminded to include all hours spent fishing in the mode at all sites. If the angler fished at a site in a different mode group, he/she should not include time spent fishing in the non-intercept mode.

Since a trip is defined as fishing in one mode in one waking day, it is waking day hours that should be entered. This should never exceed 24.0.

Interviewers should note that a box with a pre-coded decimal has been provided and that the question requires "to the nearest **half** hour". Only "0" or "5" should appear in the box to the right of the decimal.

Item 15b Time On Boat? - All anglers fishing from a boat mode are asked how many hours they spent on their boat, away from the dock, in the mode of the intercept on the day of the intercept. This question is meant to measure trip time. Do not include time spent in the boat while the boat is at the dock. Please code 15b as "Not Applicable" if the angler is fishing from the shore mode. Code as "99.9" if the angler is unable to answer the question.

Item 16 Additional Hours? - This question is used for beach/bank shore anglers who had not yet completed their fishing for the day. Incomplete trips are allowed **only** for the beach/bank category within the shore mode. **No more than 50%** of the beach/bank interviews obtained during any assignment may be incomplete trip interviews. A beach/bank angler must have completed **at least 1/3 of his/her trip** to be eligible to an incomplete trip interview. Code Item 16 as "Not Applicable" if the fisherman fished from any other mode.

Item 17 Target Species? - The interviewer should ask all anglers to name the kinds of fish they were fishing for. The interviewer should enter the name(s) of the fish on the line(s) provided above the coding boxes and look up the code(s) after the interview is completed.

If the angler says "no", "anything", or "nothing in particular", etc., the interviewer should write "no", "anything", or "nothing in particular" in the first block provided and **leave the coding boxes blank**.

If the angler mentions only one species, that angler should not be pressed for two. The species mentioned would be coded in the first set of boxes and the second set would be left blank. If the angler names two or more species, the interviewer should code only the first two mentioned.

The interviewer should note that identification of a particular **species** of fish is desired. If the angler names a family of fish, the interviewer should probe

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to determine whether he/she preferred a particular species in that family. For example, "Any particular kind of drum?" If the angler has no preference within the family of fish and several species are possible within that family, the interviewer should enter the family code. If, however, the interviewer knows that the angler could only be going after one species within that family, he/she should enter that species code. For this item, a knowledge of how local names translate to exact species is very important. If the angler uses a local name (Appendix J), the interviewer should also enter the accepted common name from the species list (found in the coding manual at [http://www.st.nmfs.gov/st1/procurement/mrfss\\_survey.html](http://www.st.nmfs.gov/st1/procurement/mrfss_survey.html) with user id = demo and password = ur2sea) for the species or family so that field supervisors can check the species code entered.

Interviewers should only record reasonable responses to this item. If an angler responds that he/she was fishing for a species not found in his/her area, this response should not be coded. For example, it is not reasonable that anyone would fish for oceanic pelagic species like blue marlin from an inland pier.

Item 18 Days in Past 12 Months? - All anglers are asked how many days they have been saltwater sport fin-fishing in the state of intercept or from a boat launched in the state of intercept, exclusive of the day of intercept, in the past 12 months.

The wording of this item is very important. The angler should think back to the same date in the previous year. He/she should **not** include days spent freshwater fishing, commercially fishing, shellfishing, or days spent fishing in other states.

The interviewer may have to work with an angler to come up with a specific number. Anglers are likely to say something like "every week" or "once a month". In these instances the interviewer should translate the response to a number and verify that number with the angler .

Since the question requires days and the day of intercept should not be included, the maximum acceptable entry would be "364", and the minimum acceptable entry would be "000". Codes "998" and "999" are provided for "don't know" and "refused", respectively.

Item 19 Days in Past 2 Months? - All anglers are asked the question at Item 19. While not written again here, the limitations that apply to Item 18 also apply to Item 19.

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Since the question requires days and the day of intercept should not be included, the maximum acceptable entry would be something on the order of "59" or "60" and the minimum acceptable entry would be "00". Codes "98" and "99" are provided for "don't know" and "refused", respectively. Also, the entry at Item 19 should never exceed the entry at Item 18.

**\*Item 20**     Residence? - All anglers are asked their State and county of residence. If the angler does not know his/her county of residence, the interviewer should ask for their city and enter the city name and circle "city" on the Coding Form. In that instance, the coding boxes for county would be left blank. They would be completed later based on city name by RRs or other contractor personnel.

If the angler should ask, it is their legal residence that they should be reporting. Since this is not included in the question stem, interviewers should only provide this information if the respondent asks for clarification.

After interview completion, interviewers should code the response with the correct FIPS codes for State and county (Appendix A). If an angler is a resident of some country other than the United States, the appropriate country code (Appendix A) must be coded in the State position and "998" must be coded in the county position. If the interviewer is unsure of the correct code, he/she should write out the necessary information and leave the coding boxes blank for completion by field supervisors.

**Item 21**     ZIP Code? - All anglers are asked the ZIP Code of their residence. The ZIP Code given should be the ZIP Code of the residence named by State and county in Item 20. As before, if the angler should ask, it is the legal residence that is desired. If an angler is a resident of a country other than the United States, "99997" should be recorded.

**Item 22**     Type of Residence? - All anglers are asked what type of residence they live in. Single family homes and apartments are considered "private residences". Dorms, barracks, nursing homes, and rooming houses are considered "institutional housing units".

If the angler lives in a private residence, the interviewer should code Item 22 with a "1" and continue with Item 23.

If the angler lives in institutional housing, the interviewer should code Item 22 with a "2", code Item 23 with an "8", and continue with Item 24.

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Item 23      Has Phone? - This question is pertinent only to anglers living in private residences (Code "1" at Item 22). If Item 23 is not pertinent, it should be coded with an "8". Here we want to know if the angler has a connected land line telephone in the home (because these are the homes we reach with our RDD telephone survey). If they only have a cellular telephone, but no home land line, this should be coded as "2" for "NO".

The interviewer should code the angler's response and continue with Item 24.

Item 24      Name and Phone Provided? - All anglers are asked to give a full name and a telephone number for survey verification. Approximately ten percent of all anglers interviewed by each interviewer will be contacted for survey verification purposes. Names and phone numbers should be written on the boxes provided at Item 24. If the angler is a very young child, accompanied by an adult, the interviewer should also get the name of the adult.

It is not necessary to obtain the angler's home telephone number. Any number at which he/she can be reached is acceptable. However, if a work number is obtained, the interviewer should note that it is a work number so that validation attempts will be made during working hours. The interviewer should circle D for day phone or N for night phone. The interviewer should make sure that an area code is obtained.

To be entered in the right-hand box at Item 24 is a summary code indicating the type of information obtained. If the angler gives his/her name and phone number, the interviewer should enter a "1"; if the angler gives only name, only phone number, or neither, the interviewer should enter a "9."

**\*Item 25**      Unavailable Catch (Type 2 Records)? - All anglers are asked to report on fish caught in the mode that are not available for inspection. **Each angler must report on his/her own unavailable catch in the mode of intercept.** Please note Box B which should provide a reminder that unavailable catch may not be grouped. If the angler was at a different site in the same mode, unavailable fish from the other site should be included.

Any fish that YOU are unable to positively identify AND count MUST be recorded as "unavailable catch" (under Item 25). Each fish must be counted by the interviewer in order for it to be recorded as "available catch" (Item 31). NMFS maintains this rule because we are confident in properly trained interviewers' ability to identify fish to the species level and to accurately count how many there are of each species. However, we are not confident in all

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anglers' ability to accurately identify fish to the species level. Even one misidentified fish will result in the recording of inaccurate information, which is why we need to record all information reported by anglers as "unavailable catch". Anglers may be tempted to over or under-report the number of fish caught, which is another reason for recording the fish as "unavailable catch".

Interviewers should keep in mind that it is possible to record some fish of the same species as "unavailable catch" and other fish as "available catch". If an angler tells you that he has five Atlantic Cod in a cooler and you are only allowed to positively identify and count three of them, you should record the three Atlantic Cod as "available catch" and the other two as "unavailable catch". You can not be sure that the other fish were Atlantic Cod, or that there were two of them, if you were unable to see them.

A separate line must be filled in for each unique species-disposition combination. Each line of information is called a "Type 2" record. Each "Type 2" record must contain a species name, a 10-digit species code, the number of fish, and a disposition code.

Species name and code, number of fish and disposition are key items. It is also important that interviewers write out the full species name (be sure to use the accepted common name). **Abbreviations are not acceptable.**

Each interviewer should strive to report an angler's Type 2 catch to the species level. Since the interviewer cannot inspect or count unavailable catch, it is recognized that the species and numbers reported may not be exact. It is appropriate to show the anglers pictures from the field guide in order to clarify a fish species. If necessary, one of the "unidentified fish" codes may be used as a *last resort*.

NOTE: If an angler refuses to allow an interviewer to see or count his/her catch, but he/she reports the catch, the interviewer should list the catch in Type 2. This interview is still considered "good" because the angler reported his/her catch to the interviewer.

The question to ask concerning disposition is: "What did you do or do you plan to do with the (species name)?" The interviewer may have to probe until the ultimate disposition of the fish is determined. For example, disposition code 3 should be used if the angler plans to give the fish to his friend, if his friend is planning to eat it.

The disposition codes can be found below Item 25 on the Intercept Form.



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They include: (1) Thrown back alive - legal; (2) Thrown back alive - not legal – legality refused; (3) Eaten - plan to eat; (4) Used for bait - plan to use for bait; (5) Sold - plan to sell; (6) Thrown back dead - plan to throw away; and (7) Plan to use for some other purpose. Please make sure to properly distinguish between disposition codes 1 and 2. Disposition code 2 “thrown back alive/not legal/legality refused” should ONLY be used if:

- The state of the interview in has a regulation for the species in question; OR
- The angler believes that there is a regulation for the species in question *even if there is no regulation*.

Please limit the use of disposition 7, “some other purpose.” It should only be used if the angler’s response is unusual and does not fall under dispositions 1 through 6. (If disposition 7 is used, the interviewer should write the angler’s response on the form.) Disposition 8, “don’t know/didn’t ask” and disposition 9 “refused” can not be used for unavailable fish. The use of these two codes will result in a status 5 interview.

NOTE: There is no code for “given away.” If the fish have been given away, the interviewer should ask what the recipient intends to do with the fish and code accordingly. If the fish were given away to be used for bait the correct disposition would be “4”.

All filleted fish should be considered “unavailable catch” and entered under Item 25. NMFS does not believe that an interviewer can look at a slab of meat and identify the fish to the species level. However, if enough of the carcass is left to allow for accurate species identification and an accurate count, the fish can be entered as “available catch” under Item 31.

Anglers may think that fillets are available catch and not report them in response to the question at Item 25. If an interviewer should look at an angler’s catch and discover that all of the fish have been filleted, the fillets must be entered as “Type 2” records, and there would be no “Type 3” records. Please note that interviewers *should not assume* that all fillets would be eaten. Even with fillets it is important to ask the question concerning disposition.

Each angler must report on his/her own unavailable catch. If a group of anglers report that they together caught a certain number of fish, and that these fish have been filleted, the interviewer should strive to determine how many fish each angler caught. Fillets should be entered as “Type 2” records (unavailable catch), and each angler’s own unavailable catch must be entered on his/her own form. If the group of anglers cannot determine how

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many fish they individually caught, the interviewer should divide the total number of fish by the total number of anglers contributing to the catch, and report this number of fish on each angler's form.

Box B was added last year to assist current contractor staff in detecting incorrect grouping of "Type 2" catch. It will also allow interviewers to clearly indicate that the catch is *not* grouped, although it may appear that it is. The catch may appear to be grouped if each angler reports a high number of fish. If a high number is reported or the number seems improbable, the interviewer should probe with each angler to confirm that the angler is reporting his/her individual catch.

If one species is disposed of in two or more manners, it will be necessary to complete two or more "Type 2" records for the species. For example, if an angler caught a total of eight bluefish, five of which he/she threw back alive legal, and three of which he/she plans to eat, the interviewer should complete two "Type 2" records. The first "Type 2" record would be five bluefish with disposition 1, and the second "Type 2" record would be three bluefish with disposition 3.

Three coding boxes are provided for "Number of Fish" under Item 25. As stated above, this is the number of fish of the listed species-disposition combination caught by an individual angler. Since Item 25 is a key item, there are no "don't know" or "refused" codes reserved for "Number of fish." A number must be entered! ("998" will be read as nine hundred ninety-eight fish!) If an angler has more than 999 unavailable fish of one species-disposition combination, the interviewer should write out the actual number in the available space and put one of the following codes in the coding boxes:

A00 = 1,000	F00 = 1,500	L00 = 2,000
B00 = 1,100	G00 = 1,600	M00 = 2,100
C00 = 1,200	H00 = 1,700	N00 = 2,200
D00 = 1,300	J00 = 1,800	P00 = 2,300
E00 = 1,400	K00 = 1,900	R00 = 2,400

One thousand two hundred fifty (1,250) would be entered as C50; 1,472 would be entered as E72, etc. Seven lines have been provided on the Intercept Form for "Type 2" records. If more than seven are needed, the interviewer should use the second page of a clean Intercept Form. Both the additional and the original form must be clearly marked with "page 1 of 2"

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and “page 2 of 2.” You must fill out Items 2 through 10 on page 2 and these items must match Items 2 through 10 on page 1.

- \* **Item 26** Were Fish Caught To Look At? - All anglers are asked whether they caught any fish in the mode of intercept that the interviewer can examine and count. If the angler caught some fish that are available for inspection and can be counted, the interviewer should code Item 26 as “Yes” and continue with Item 27. This angler must have some data recorded as available catch (Item 31.)

If the angler *did not* catch any fish available for inspection or he/she did not allow the interviewer to identify or count the catch, the interviewer should code Item 26 as “No,” code Items 27-29 as “8’s” representing “Not Applicable,” and continue with Item 30. This angler should have no data recorded as available catch (Item 31), but should have an entry at Item 30.

If the angler caught fish that are available for inspection, but they have already been entered on another angler's form because they could not be separated, the interviewer should code Item 26 as “3 - Fish on another angler's form.” The interviewer is then instructed to enter the interview number where the fish are located in the boxes provided. He/she should code Items 27-29 as “8’s” and continue with Item 30. This angler should have no data recorded as available catch (Item 31), but should have an entry at Item 30.

Interviewers should note that the stem of Item 26 includes the words “to look at.” Fish that have been filleted are not considered available “to look at.” If it turns out that the angler's fish have all been filleted, the interviewer will have to go back and change the angler's response to Item 26. Filleted fish are entered at unavailable catch (Item 25), **not** at available catch (Item 31.)

- \* **Item 27** Catch Mixed? - This question is asked *only* of those anglers who caught fish available for inspection and whose fish have not been entered on another angler's form. If Item 27 is not applicable, it should be coded as “8.”

If the angler caught all of the available fish, the interviewer should code Item 27 as “1 - All caught by Angler,” code Items 28 and 29 as “8’s” representing “not applicable,” and continue with Item 30.

If other anglers have contributed to the available catch, the interviewer should code Item 27 as “2 - Other Contributors” and continue with Item 28.

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\* **Item 28** Separate Catch? - This question is asked *only* of those anglers who report that several anglers have contributed to their available catch at Item 27. If Item 28 is not applicable, it should be coded as “8.”

If the angler can separate out his/her own available catch, the interviewer should code Item 28 as “1 - Yes,” code Item 29 as “88” and continue with Item 30. **Only the angler’s own available catch should then be entered at available catch (Item 31.)**

If the angler cannot separate out his/her own available catch, the interviewer should code Item 28 with “2 – No” and continue with Item 29. **All of the available catch would then be entered on this angler’s form at available catch (Item 31.)**

\* **Item 29** Number Who Caught Fish? - This question is asked only of those anglers who cannot separate their available fish from the available fish caught by others in their fishing party (“No” at Item 28.) If Item 29 is not applicable, it should be coded as “88.”

The angler is asked to indicate the number of anglers who contributed to the total available catch. He/she should *not* include anyone who did not catch any of the available fish. That person should be interviewed separately if he/she spent any time fishing. **The count of contributors should only include anglers who caught one or more of the fish recorded under Item 31 on that angler’s form.** As stated above, all of the available catch would then be entered on this angler’s form at Item 31. The following are the five possible ways to code Items 26-29:

IF THE ANGLER SAYS:	CODE:
This angler has <b>no available catch</b> . S/he has not caught any fish that the interviewer can look at.	2
	8 – Not applicable
	8 – Not applicable
	88 – Not applicable
This angler has <b>available catch</b> . The angler has caught fish that the interviewer can look at and count, and the angler has <b>caught them all</b> .	1
	1
	8 – Not applicable
	88 –Not applicable

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This angler has <b>available catch</b> . S/he is part of a <b>group of five anglers who all caught fish</b> . S/he <b>cannot separate</b> his/her share of the catch. All of the group’s available catch is listed on <b>this angler’s form</b> .	1
	2
	2
	05 – Number of anglers who caught fish – cannot separate
This angler’s <b>available catch</b> is part of a <b>group catch</b> . His/her available catch has been <b>reported on the form of the 1<sup>st</sup> angler who was intercepted that day (meaning intercept number “01”)</b> .	3 – Record “01” in the space provided to indicate which form his/her catch is located on!
	8 – Not applicable
	8 – Not applicable
	88 – Not applicable
This angler has <b>available catch</b> . S/he is part of a group. Each angler, though, <b>can separate</b> his/her share of the catch from that of the group.	1
	2
	1
	88 – Not applicable

**\* Item 30** Party Size?- This question is asked to determine how many anglers fished on the boat, *including* the angler being interviewed. If the angler fished alone on a boat, code as “001.” Please code as “Shore Mode” if the angler was fishing from the shore mode.

For the purpose of this survey, a “fishing party” is defined as a group of anglers who fished on the same boat on the same day. Therefore, all anglers fishing from the same boat are considered members of the same “fishing party” regardless of whether they traveled together to the site. In addition, all anglers fishing from the same charter/head boat should be considered members of the same fishing party. **Please note that the number of people on the boat must be identical for anglers in the same party.** If anglers of the same fishing party report a different number of people on the boat, it may be because they do not know the exact number. This may be true especially for HB or CB mode interviews, where the number of anglers fishing on the boat may be high. In this case, it is appropriate to clarify the number on the boat by asking the mate or captain, if possible.

Interviewers should be aware that the number of contributors recorded in Item 29 *cannot exceed* the number of anglers in a “fishing party.”

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- \* **Box D** First Person from Boat? - This question applies to those anglers who fished from a boat and who responded that the number of people on the boat (Item 30) was greater than one. Box D must be coded as “8 – Not Applicable” if the response to Item 30 is “001,” or if the angler was fishing in shore mode (Item 11).

If the angler indicated in Item 30 that he/she fished together with other anglers on the same boat, then the interviewer should ask him/herself “Is this the first person on the boat that I have interviewed?” If the response is “yes,” code Box D as “1 - Yes.” If he/she is not the first interviewed, code as “2 - No” and record the interview number of the first angler in the party in the boxes provided. If the interview is HB or CB mode, and more than one boat came in at the same time, the interviewer may need to ask the angler which charter/headboat he/she was on.

Data from Item 30 and Box D are used to determine if being in a group affects catch rates. Box C and D are not questions to be asked of the angler. Rather, they are items to be filled in by the interviewer after the interview is completed.

- \* **Item 31** Available Catch (Type 3 Records)? - The angler’s available catch should be entered at Item 31 on the Intercept Form. Each line of information recorded is called a “Type 3” record. Each “Type 3” record **MUST** have the following information:

- Species name (common name, as indicated in the Coding Manual at the web site [http://www.st.nmfs.gov/st1/procurement/mrfss\\_survey.html](http://www.st.nmfs.gov/st1/procurement/mrfss_survey.html) with user id = demo and password = ur2sea );
- The corresponding 10-digit species code (also from the Coding Manual);
- The total number of that species (all counted by the interviewer); and
- The disposition code (indicating what the angler plans to do with the **majority** of the fish of that species.)

Without this information, the intercept is considered a status 5 interview, and cannot be used. **In addition, the interviewer should strive to obtain weight and length measurements for each fish!** If the angler is in somewhat of a hurry, the interviewer should strive to get weight measurements. Last in order of priority, but not to be ignored, is length.

Interviewers must positively identify and count **ALL** fish that are recorded under the "available catch" section. If they are only able to identify and count some of the fish, those that are identified and counted should be recorded under the "available catch" section (Item 31), and those that are not should be recorded under the "unavailable catch" section (Item 25).

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When more than one fish of a species is available, the interviewer need not repeat the species name, the species code, the total number of fish, or the disposition code on all lines. In that case, the interviewer should draw arrows down, indicating that the boxes are exactly the same as the ones above. This only holds true, however, for the species name, the species code, total number and disposition. If the weights and lengths are the same, they must be written out. As with unavailable catch, it is important that interviewers write out the full species name (making sure to use the accepted common name). Abbreviations are not acceptable.

If fifteen or fewer fish of one species are available, interviewers should try to weigh and measure all of them. If more than fifteen fish of one species are available, the interviewer should randomly select fifteen fish to be weighed and measured (section 7.3.5 Sub-Sampling Procedures). No more than fifteen fish of one species should be weighed and measured per angler. If the catch is grouped, and there are more than fifteen fish of one species, the interviewer should attempt to weigh and measure up to fifteen fish per species per angler.

Three coding boxes have been provided for “# of Fish” in Item 31. As stated in the discussion of Item 25, no codes have been reserved for “don’t know” and “refused.” A “999” will be read as nine hundred ninety-nine fish. Numbers above three digits, that is, above “999,” should be recorded through use of an alphabetic character in the first position. The codes are listed under the discussion of Item 25. If one of these codes is used, the interviewer must write out the actual number in the available space.

If length or weight is missing, the interviewer should fill in the boxes for the missing data with “9’s.” **Missing data should be footnoted with an explanation.** Acceptable reasons for not obtaining weight or length measurements include:

- Angler refused to let the interviewer weigh his/her fish.
- Angler refused to let the interviewer measure his/her fish.
- The interviewer was unable to obtain a weight because the fish was gutted.
- The interviewer was unable to obtain a weight because the weight exceeded the capacity of the large scale.

If length and/or weight information are missing for some fish of a species (i.e., the angler refused to have the appropriate number weighed and measured) but some weights or measurements are available, the interviewer should fill in the available weights and lengths using separate “Type 3” records.

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Additional records for the fish of this species with “9’s” filled in for the missing weight and length should not be added. The interviewer should use a footnote to explain why some fish were not weighed and measured.

Note: In the past, interviewers have been asked to fill out a record, as a placeholder, for additional fish of a species not weighed or measured even when a record existed for some that were measured. This practice is not desired by the NMFS because it requires unnecessary data records to be key entered and delivered to the client, adding extra time and effort on the part of both the Contractor and NMFS for editing and quality control.

If an angler allows an interviewer to identify and count his/her catch, but refuses to allow an interviewer to weigh/measure the catch, the interview is still “good” as long as the angler answered all key items. If all key and non-key items were obtained, it is still considered a “status 1” interview.

If length and weight information are missing on all fish of a species, the interviewer should only fill out one “Type 3” record for the species. That record would have “9’s” in the length and weight boxes. Again, a reason for the missing data should be written on the form.

The disposition codes for the “Type 3” records are listed under Item 31. The question to be asked is: “What do you plan to do with the majority of the (species name)?” Since only one disposition can be used for each species under Item 31, it is important that you ask what the angler plans to do with the highest number of fish. For example, if an angler has caught three fish of the same species, and he/she intends to sell the largest one and eat the two smaller ones, then the interviewer should code all records with disposition as “3 - Eaten/Plan to eat.” This is because more fish will be eaten than sold.

Weight should be used to determine the disposition code when the fish split evenly by number into two or more dispositions. For example, if there are exactly two fish of one species, one of which will be sold and one of which will be eaten, the interviewer should code to the disposition of the *heavier fish*.

Fifteen “Type 3” records can be entered on each Intercept Form. If more than fifteen are needed, the interviewer should use the second page of a clean Intercept Form, fill out Items 2-10 using the same information from the first form, and attach that form to the original form. In some instances, several “second pages” may be needed. As with “Type 2” records, the interviewer should mark each page as “page 1 of 2,” etc.



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The interviewer should never skip a "Type 3" record line on a coding form. The next fish should be entered on the next line.

**7.2.3 Intercept Economic Survey Item by Item Instructions**

The Contractor for the MRFSS Intercept Survey shall work together with the NMFS to develop the final questionnaire to be used for the Economic Intercept Interview Survey in each given year for a given Region. The questionnaire shall consist of up to 12 questions. Examples of questionnaires used or proposed for prior years for expenditure and conjoint studies in the Northeast, Southeast and Pacific Regions are provided at the web site [http://www.st.nmfs.gov/st1/econ/rec\\_econ.html](http://www.st.nmfs.gov/st1/econ/rec_econ.html).

Items on the questionnaire for which the angler does not know the answer should be coded with "8"s. Items that are refused should be coded with "9"s. If an Intercept Survey interviewer is not certain whether a given respondent is more than 16 years of age, he/she should simply ask the respondent. If the respondent is less than 16 years of age, then the interviewer should thank the respondent and terminate.

The following questions are expected to be very similar to the final questionnaires that will be used. Items 1-10 are not asked of anglers (except occasionally question 10) but are filled out by the interviewer.

Item 1      Record Type - "5" is reserved for all intercept economic survey interviews but is not on the form.

Items 2-9    Assignment No., Interviewer Code, Year/Month/Day, Interview Number, Hour, State, County, Site - These should match the code on the associated intercept interview form exactly.

Item 10     Interview Status - This item has status codes similar to the intercept interview (1=fully complete, 2=partially complete with all key questions answered) but also has two codes associated specifically with the economic interview.

"Initial Refusal of Economic Questionnaire = 3" - This code should be used if the angler refuses to respond to the economic interview, even if they completed the routine intercept interview.

"Angler is less than 16 years = 4" -The interviewer should be able to tell without asking that the majority of anglers will be over 16; however, If interviewer is not certain respondent is at least 16 years of age, they should simply ask the respondent if he/she is at least 16 yrs of age. If they are less than 16 years of age, then the interviewer should thank the respondent and

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terminate the economic survey (but not the routine intercept interview).

Beginning with Item 11 are questions to be asked of the anglers. Key questions are indicated by bold item numbers and printed asterisks. Responses to key questions will be considered more important for proper analysis of the data than responses to non-key questions. Questions asked of all respondents are denoted with the abbreviation AR. Other abbreviations are as follows: OA denotes questions asked of overnight anglers; and EH denotes questions asked of respondents that lost income as a result of the fishing trip.

*Expenditure Intercept Questions*

- Item 11     Multi or Single Day Trip (AR)? - Identification of fishing trip status by overnight or one-day trip is necessary for determining the appropriate allocation of elicited travel costs to the fishing trip. Trip status is also used as a basis for characterizing angler behavior. This is coded as "1" for yes or "2" for no. One-day fishing trips involving departure of a party/charter or private/rental boat from port on the night prior to fishing should not be considered an "overnight stay away from home" unless angler is spending additional nights away from home. If a multi-day trip, skip to Item 16.
- Item 12     Number of Anglers? (SD) - The number of people taking fishing trip helps track spending behavior when multiple participants are involved. - Actual response coded. If "1" then go to Item 14.
- Item 13     Number Anglers Paying? (SD) – The number of people sharing expenses on the trip also helps to detail anglers spending behavior. Allows the allocation of trip expenditures on a per participant basis. - Actual response coded. Must be less than or equal to answer to Item 12.
- Item 14a-e Trip Expenses? (SD) - This question begins the series of trip related fishing expenditures by asking about expenditures on food, drinks, and other refreshments for the trip. Individuals are asked to provide personal expenditures if they can recall those or group expenditures if that is more convenient. Record actual amounts given to nearest dollar. If Number of Anglers=1 or Number Anglers Paying=1, then ask "Now I'd like to ask you about the amount of money being spent for this entire trip away from home, not just the time spent fishing, in each of the following categories." If more than one angler paying, ask "For each expenditure category that I mention, please estimate either your own personal expenses or the expenses for your entire group, whichever is easier for you to remember."

For each expenditure category, interviewer should fill in amount provided by respondent. All expenses should be reported to the nearest dollar. If Item 12 response=1 or Item 13 response=1, interviewer should record expenses in the

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“pers” column. If Item 13 response > 1, interviewer should record personal expenses in the “pers” column and group expenditures in the “group” column, whichever is appropriate. It is important that responses reflect expenses incurred during the entire time away from home, including meals eaten while traveling to and from the fishing site. Boat fuel should be pro-rated to reflect actual amount consumed (rather than bought) during the trip away from home. Item 14b pertains only to items (e.g., fishing gear) that were rented specifically for the trip. More general questions regarding maintenance and repair of the angler’s own boat and equipment will be asked in the telephone follow-up. Similarly, Item 14d pertains only to fees specific to the trip. Moorage fees that are paid on a seasonal rather than per-trip basis will be covered in the telephone follow-up. Items 14a-14e should be asked of all respondents.

	Pers	Group
14a. Food, drink and refreshments?	\$ _____	\$ _____
14b. Rental of boat, fishing or camping equipment?	\$ _____	\$ _____
14c. <u>Public</u> transportation, including airplane, train, bus and car rental?	\$ _____	\$ _____
14d. Parking, access and boat launching fees?	\$ _____	\$ _____
14e. Bait and ice?	\$ _____	\$ _____

Item 14f is asked only if intercept mode is private/rental boat:

14f. Boat fuel?	\$ _____	\$ _____
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Item 14g is asked only if intercept mode is party/charter boat:

14g. Passenger fees, tips, filleting/smoking/canning?	\$ _____	\$ _____
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Item 14h is asked only if respondent unable to itemize:

14h. Total	\$ _____	\$ _____
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If county of intercept=county of residence, skip to Item 16.

If county of intercept is not equal to the county of residence but county of intercept and county of residence are in the same state, ask Item 15a and Item 15b but not Item 15c. If county of intercept and county of residence are in different states, ask Item 15a, Item 15b and Item 15c.

Item 15a % of expenses in intercept county? (SD) -Asks angler what percentage of the above expenditures was made in the county of intercept. This apportions expenditures to specific region for impact analysis. enter percentage. Response must be >=0 and <=100. Asked only if positive expenditures reported in Item 14. Skip to Item 16 if no positive expenditures reported or if Item 15a response is 100%.

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- Item 15b % of expenses outside intercept county but within state of intercept? (SD) - Asks angler what percentage of the above expenditures was made outside the county of intercept, but in the state of intercept. This apportions expenditures to specific region for impact analysis. enter percentage. Response must be  $\geq 0$  and  $\leq 100$ . If (Item 15a response + Item 15b response = 100) or (Item 15b response eq 998 or 999), skip to Item 16.
- Item 15c % of expenses outside state of intercept? (SD) - Asks angler what percentage of the above expenditures was made outside the county of intercept and outside the state of intercept. This apportions expenditures to specific region for impact analysis. enter percentage. Response must be  $\geq 0$  and  $\leq 100$ . Will equal  $100 - \text{Item 15a} - \text{Item 15b}$ .
- \*Item 16 Participation in Followup (AR) - This question determines whether or not an individual is willing to participate in the follow-up telephone survey. - This item is coded "1" for yes and "2" for no. Enter the name, address, and a phone number where the respondent can be reached.

Because of the multiple question aspect of question 14a-h, an offeror may consider that the number of questions exceeds the flexible limit of 12. If an offeror intends to charge more per interview for those questions, as opposed to the costs of the flexible questions being included in the base intercept costs, then the costs should be included in the per unit prices for the economic add-on, not in the base MRFSS per unit prices.

*Conjoint Intercept Questions*

- \*Item 11 Multi or Single Day Trip (AR) - Identification of fishing trip status by overnight or one-day trip is necessary for determining the appropriate allocation of elicited travel costs to the fishing trip. Trip status is also used as a basis for characterizing angler behavior. Codes are 1 = one day trip, and 2 = multi-day trip. If 1 is coded, the interviewer skips to item 13.
- Item 12 Trip Primarily for Fishing(OA) - Fishing primacy is used to profile anglers and the trips they take. It also helps map vacation expenditures into fishing trip expenditures for overnight anglers. This should be coded "1" for yes or "2" for no.
- Item 13 Years Spent Saltwater Recreational Fishing (AR) - This item is used in angler profiling. This is coded in whole years.
- Item 14 Boat ownership (AR) - Boat ownership may influence attitudes toward fishing and may affect the type of trip, species targeting behavior, and fishing site selection. This item is coded "1" for yes and "2" for no.

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- \*Item 15 Off Work Without Pay (AR) – Foregone income is an important component of the opportunity cost of the angler’s time, and the angler was asked whether or not income was foregone. If the angler is fishing on his/her own time, i.e. after work, weekend, paid vacation, this item is coded no. This is coded “1” for yes and “2” for no. If the answer is no, the interviewer skips to item 18.
- \*Item 16 Number of hours typically worked per week (EH) – Again, the exact amount of income foregone is an important component of opportunity cost of time, and this question elicits average hours per week worked in order to construct the value of time spent fishing. This item is only asked of respondents who took time off work without pay to go fishing. This item is coded to the nearest whole hour.
- \*Item 17 Personal income (EH) – Again, the exact amount of income foregone is an important component of opportunity cost of time, and this question elicits household income in order to construct the value of time spent fishing. This item is only asked of respondents who took time off work without pay to go fishing. Interviewers should try to provide privacy for this answer, perhaps by asking the respondent to point to the category of personal income rather than asking for a verbal answer.
- \*Item 18 Participation in Followup (AR) - This question determines whether or not an individual is willing to participate in the follow-up mail survey. Interviewers should indicate “1” for yes or “2” for no, and enter the name and address where the respondent can be reached.

*Valuation Intercept Questions<sup>1</sup>:*

- \*Item 11 Boat Ownership (AR) -- Boat ownership may influence attitudes toward fishing and may affect the type of trip, species targeting behavior, and fishing site selection. Boat ownership will be incorporated into the economic valuation model. This item is coded “1” for yes and “2” for no.
- \*Item 12 Off Work Without Pay (AR) – Foregone income is an important component of the opportunity cost of the angler’s time, and the angler was asked whether or not income was foregone. If the angler is fishing on his/her own time, i.e. after work, weekend, paid vacation, this item is coded no. If the angler is fishing on his/her own time, i.e. after work, weekend, paid vacation, this item is coded no. This is coded “1” for yes and “2” for no. If the answer is ‘no’, ‘don’t know’ or ‘refused’, items 13 and 14 are coded “998”.
- \*Item 13 Number of hours typically worked per week – Again, the exact amount of income foregone is an important component of opportunity cost of time, and

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this question elicits average hours per week worked in order to construct the value of time spent fishing. This item is only asked of respondents who took time off work without pay to go fishing. This item is coded to the nearest whole hour. The minimum response is "1"; the maximum response is "90."

- \*Item 14 Personal income – Again, the exact amount of income foregone is an important component of opportunity cost of time, and this question elicits household income in order to construct the value of time spent fishing. This item is only asked of respondents who took time off work without pay to go fishing. Interviewers should try to provide privacy for this answer, perhaps by asking the respondent to point to the category of personal income rather than asking for a verbal answer. This item is coded from "1" to "10".

<sup>1</sup>In addition to these four questions, NMFS reserves the right to add additional questions up to the flexible question limit of 12 questions, depending on topical management or research needs.

## 7.3 Identifying, Weighing and Measuring the Catch

### 7.3.1 Fish Identification

Interviewers must strive to identify all fish (type 2 & 3) to the lowest taxonomic level possible, preferably the species level. All type 3 records must be identified to the species level, as discussed below. In the interest of professionalism, the interviewer should never ask the angler to identify his/her own available catch. For unavailable fish, including fish that are filleted (both representing Type 2 catch), the interviewer must ask the angler to identify his/her catch. Interviewers will be expected to use their local knowledge to assist the angler in identifying his/her catch. Interviewers should use their Peterson's Guide to Atlantic Coast Fishes to assist the angler with this identification.

The Intercept Coding Manual found at ([http://www.st.nmfs.gov/st1/procurement/mrfss\\_survey.html](http://www.st.nmfs.gov/st1/procurement/mrfss_survey.html) with user id = demo and password = ur2sea) contains a complete species list sorted alphabetically by common name within families. Accepted common names are not necessarily those used by local anglers, and interviewers should know how to translate local names to accepted common names. The Intercept Coding Manual also contains a list of local names and how they often translate into accepted common names, as well as additional descriptive information on species with common identification concerns. This can be a valuable tool aid in achieving correct identifications.

Each species of fish listed in the Coding Manual has been given a unique 10-digit identification code. These codes are usually structured as follows:

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- First two digits = Class
- Next two digits = Order
- Next two digits = Family
- Next two digits = Genus
- Last two digits = Species

All fish within the same family would usually have the first six digits in common, and all fish within the same family and genus would usually have the first eight digits in common.

If an interviewer cannot identify a Type 3 fish to the species level, he/she should make notations on the Intercept Questionnaire, including any distinguishing features about the fish. Then when the interviewing day is completed, or if there is a break in the day when no one is available to interview, they should contact their RR. They should explain to what level they were able to identify the fish and provide any distinguishing features. It may be possible to identify the fish to the species level.

On "Type 3" records, in particular, a species level identification is required. As a last resort, if an interviewer is still unable to identify the fish, it must be coded as a Type 2 record.

If an interviewer cannot identify a fish to the species level, he/she should identify the fish as close to the species level as possible in the type 2 blocks. That is, he/she should identify the fish to the genus level or, if not the genus level, the family level. The known digits of the code should then be entered and the remainder of the 10 digits filled in with "0"s. For example, a fish known to be in the left-eye flounder family that cannot be identified to the genus or species level should be coded "8857030000".

Peterson's Field Guide to Atlantic Coast Fishes of North America, is the recommended field guide for use by interviewers in identifying fish. However, other local references and taxonomic keys which are approved by the NMFS and are available to interviewers and field supervisors can also be used. The Coding manual also contains descriptive information on species with common identification concerns on the Atlantic and Gulf coasts.

The species code lists in the Coding Manual are not exhaustive. Interviewers may occasionally identify a species that does not appear on the list, particularly species that occur primarily in freshwater. When this situation occurs, the interviewer should write out the scientific and accepted common name of the species and leave the coding boxes blank. The Intercept Contractor should then contact the MRFSS staff to obtain the species code. The species code list also contains codes to be used when the family identity of a fish is unknown. While these cannot be used for available fish, they may be used for fish unavailable for inspection. These codes are the following:

- Unidentified 1000000000

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- Unidentified Bottomfish 1000000001
- Unidentified Shark 1000000002
- Unidentified Surface Fish 1000000003

These codes should only be used as a last resort.

**7.3.2 Weight Measurement**

Each interviewer should be provided with two scales each: historically the Intercept Contractor has used a large scale (ex: 12 kg) and a small scale (ex: 2 kg). The scale capacity should be selected based on the average sizes and range of sizes of fish in a region. The larger scale shall be used only for fish weighing more than the weight capacity of the smaller scale. Fish weights are to be recorded to the nearest tenth (0.1) of a kilogram when the larger scale is used and to the nearest five hundredth (0.05) of a kilogram when the smaller scale is used. Five boxes are provided for the coding of weight: three to the left of the decimal, and two to the right of the decimal. For example, a fish weighing 2.4 kilograms on the larger scale should be coded as "002.40", and a fish weighing 0.16 kilograms on the smaller, more precise scale should be coded as "000.15".

All fish species in an angler's catch should be weighed unless refused by the angler. If the angler has caught more than fifteen fish of a particular species, then at least fifteen must be selected at random for weighing. Sub-sampling procedures are described in Section 7.3.5. Weight measurements should be given priority over length measurements when time is limited.

There may be occasions when length and/or weight measurements are missing. As a general rule, when weights and/or lengths are missing, the interviewer should fill the coding boxes with "9"s and provide a footnote explaining why the data are missing.

**7.3.3 Baggie Technique for Small Fish**

Occasionally an interviewer may come across fish whose weight does not register on the smaller scale at even five one-hundredths of a kilogram. If several fish of the species have been caught, the interviewer should place up to fifteen fish of the species in a plastic bag, taking care that no water accumulates inside. The interviewer would then weigh the entire bag and distribute the weight among the fish in increments of 0.05 kg and 0.00 kg. For example, if fifteen fish weigh a total of 0.65 kg, thirteen fish would be recorded as weighing 0.05 kg, and two fish would be recorded as weighing 0.00 kg. The fish of longer length should each be assigned a weight of 0.05 kg, while the three shortest fish should each be assigned a weight of 0.00 kg. This procedure will result in the correct average weight of the fifteen fish.



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### **7.3.4 Length Measurement**

Fish lengths must be taken using a measuring board (usually about 76 centimeters long) and recorded to the nearest millimeter. Most measuring boards are labeled in centimeters. To determine millimeters, interviewers should multiply the centimeter reading by 10 and add the number of smaller markings past the centimeter marking. For example, a fish that measures to the first line past “23” is “231” millimeters. Since four coding boxes are provided for the length measurement, a fish that measures 231 millimeters should be coded as "0231." Interviewers must be careful not to introduce a digit bias into their measurements by rounding lengths to the nearest centimeter or half-centimeter. An example of proper use of a measuring board is provided in Figure 7.1.

All interviewers should also be issued a tape measure to be used in addition to the measuring board, but only for fish that are longer than the measuring board. A fish that exceeds the length of the measuring board should be placed on the measuring board. The tape measure should be placed under the portion of the fish that extends past the board, being sure that edge of the tape measure is flush with the end of the board. Read the length to the nearest millimeter on the tape measure. Add that measurement to the total length of the measuring board to obtain the total length of the fish. Interviewers should never hold the tape measure above a fish. This will result in an inaccurate length measurement if the tape measure bends to the contour of the fish’s body.

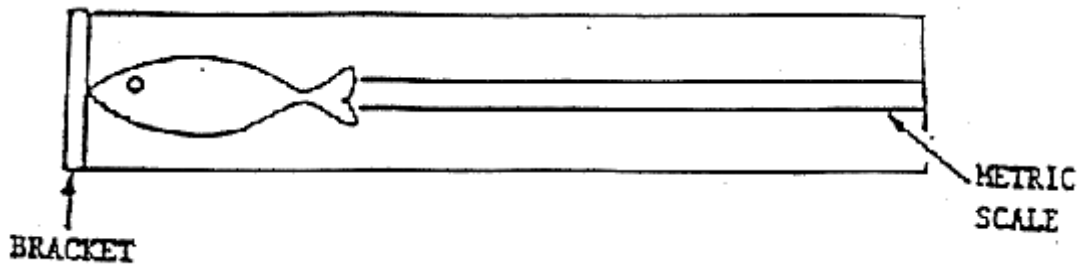
All fish species in an angler's catch should be measured unless refused by the angler. If the angler has caught more than fifteen fish of a particular species, then at least fifteen must be selected at random for measuring. Sub-sampling procedures are described in Section 7.3.5.

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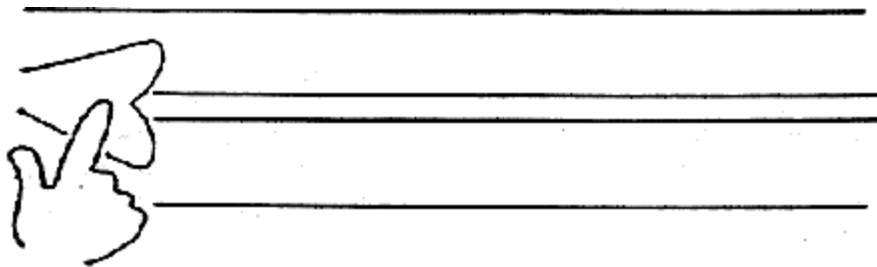
Figure 7.1 Length Measurements

Proper Use of the Standard 1 Meter Measuring Board

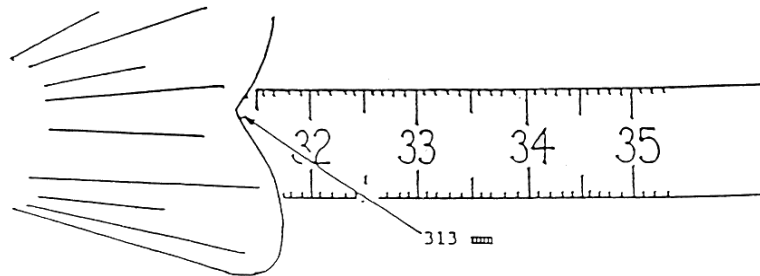
- 1) Place the measuring board on a hard level surface. You will need both hands free.
- 2) Place the fish with the anterior-most portion of the head (nose) flush against the upright bracket on the left end of the board. The specimen should be centered over the metric scale.



- 3) Keeping the nose of the fish against the bracket, press the caudal fin (tail) with the forefinger of the right hand down to the surface of the board.



- 4) Read the length to the nearest millimeter (mm) at the fork of the caudal fin.

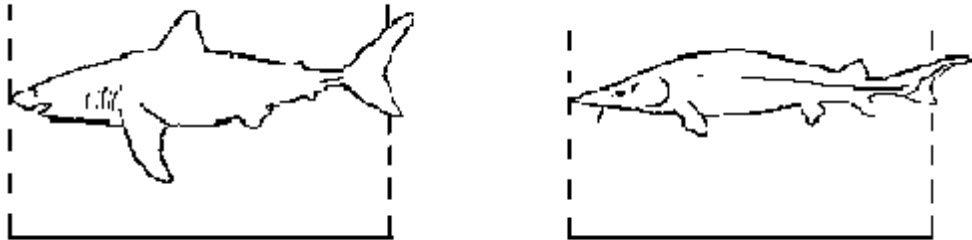


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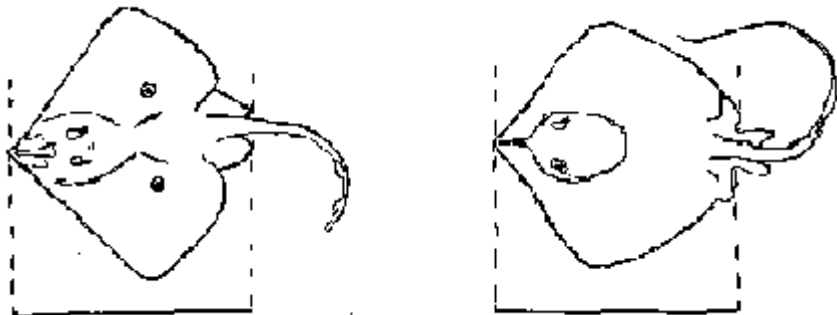
Species with tails that are not forked are to be measured in accordance with Figure 7.2.

**Figure 7.2 Measuring Various Fish**

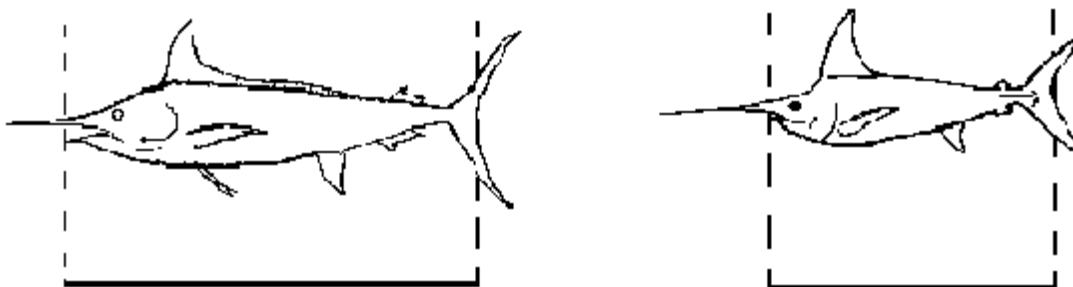
Sharks and sturgeons are measured from the tip of the snout to the center of the fork of the tail.



Skates and rays are measured from the tip of the snout to the distal end of the pelvic fins.

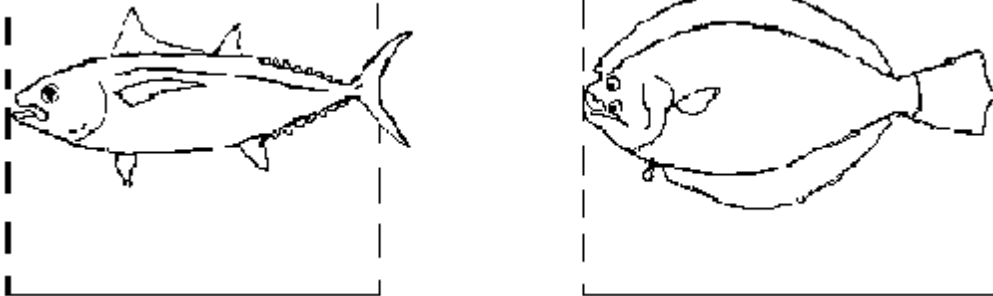


Billfishes and swordfish are measured from the tip of the lower jaw to the center of the fork of the tail.



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All other species are measured from the most anterior tip of the longest jaw (mouth closed) or end of snout, whichever is terminal, to the posterior tip of the tail at its center line. This procedure is the same whether the tail forks in (i.e., mackerels) or protrudes out (i.e., flounders). The resulting length is therefore a fork length.



### 7.3.5 Sub-sampling

If more than fifteen fish of one species are available for inspection, the interviewer must use an appropriate selection process for the fifteen fish to be weighed and/or measured. The selection process, called “sub-sampling”, must be random.

Ideally, the interviewer would line up the fish from largest to smallest, divide the total number by fifteen, and select every  $n^{\text{th}}$  fish for length and weight measurement. For example, if there are 30 fish of one species, the interviewer should line them up by size and select every 2<sup>nd</sup> fish. This method of sampling would be “systematic random” rather than “simple random”.

Due to time or space limitations, it may be impossible to line up the fish. When systematic random sampling is not possible, simple random sampling is preferred. In such cases, the interviewer should randomly select the fifteen fish to be weighed and measured as they are being counted. The procedure for randomly selecting the fish while counting would follow the same protocol as if the fish were laid out for display. First, estimate the number of fish that are to be counted, divide the estimated total number by fifteen, and select every  $n^{\text{th}}$  fish for length and weight measurement. Attempting to randomly select fish by blindly reaching into a cooler will typically over-sample large fish. At no time should the interviewer visually select fifteen fish of “average” size to weigh and measure - this is not random or systematic sampling!

### 7.5 Validation Questionnaire

At least 10% of all intercept interview respondents are called to validate that the interview took place and that the interviewer used proper procedures. The Contractor for the

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MRFSS Intercept Survey shall work together with the NMFS to develop the final questionnaire to be used.

Items on the questionnaire for which the angler does not know the answer should be coded with "8"s. Items that are refused should be coded with "9"s. An example of the validation survey instrument is contained in Appendix G. The following questions are expected to be very similar to the final validation questionnaire that will be used.

- Item 1. Date of interview - This question validates that the interview took place at the site and date recorded on the intercept interview form. This is coded "1" for yes, "2" for no, or "3" for interviewed, but did not volunteer for validation.
- Item 2. Courteous - This item validates that the interviewer conducted the interview in a courteous and professional manner. This is coded "1" for yes and "2" for no.
- Item 3. Why discourteous - If the answer to item 2 was no, then the interviewer probes for reasons the interviewer was perceived as discourteous or unprofessional.
- Item 4. Available catch - This question ascertains whether any fish were available for the interviewer to look at in order to determine if item 5 should be asked or whether the validation interviewer should skip to item 12. This is coded "1" for yes and "2" for no.
- Item 5. Look at Fish - This question determines if the interviewer looked at all of available catch. This is coded "1" for "all fish looked at", "2" for "some fish looked at", or "3" for "no fish looked at".
- Item 6. Why not looked at - If the answer to item 5 was "2" or "3", the validation probes to determine why all fish weren't examined, since the interviewer may have followed correct procedures yet was prevented from examining all the available catch. This is coded "1" for "didn't have time/didn't want to unpack, etc.", "2" for "there were too many/more than 15 of one species", "3" the interviewer didn't ask to see them", or "7" for "other" with the other reason specified in an open-ended text field.
- Item 7. Weighed Fish - This item determines if the interviewer weighed the available catch. This is coded "1" for "all fish weighed", "2" for "some fish weighed", or "3" for "no fish weighed".
- Item 8. Why not weighed - If the answer to item 7 was "2" or "3", the validation probes to determine why all fish weren't weighed, since the interviewer may have

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followed correct procedures yet was prevented from weighing all the available catch. This is coded "1" for "didn't have time/didn't want to unpack, etc.", "2" for "they were gutted", "3" for "there were too many/more than 15 per species", or "4" for "they were too big", or "5" for "the interviewer didn't ask to see them", or "7" for "other" with the other reason specified in an open-ended text field.

- Item 9. Measured Fish - This item determines if the interviewer measured the lengths of the available catch. This is coded "1" for "all fish measured", "2" for "some fish measured", or "3" for "no fish measured".
- Item 10. Why not measured - If the answer to item 9 was "2" or "3", the validation probes to determine why all fish weren't measured, since the interviewer may have followed correct procedures yet was prevented from measuring all the available catch. This is coded "1" for "didn't have time/didn't want to unpack, etc.", "2" for "there were too many/more than 15 per species", or "3" for "the interviewer didn't ask to see them", or "7" for "other" with the other reason specified in an open-ended text field.
- Item 11. Measuring board - The validation interviewer asks if the interviewer used either a measuring board or a pull-out tape measure to measure the fish. This is coded as "1" for "measuring board" or "2" for "tape measure".
- Item 12. Time of Interview - The respondent is asked approximately what time of day they were interviewed as a check against the recorded interview time. This is coded as "1" for "6AM-8:59AM", "2" for "9AM - 11:59AM", "3" for "12 noon - 2:59PM", "4" for "3PM - 5:59PM", "5" for "6PM - 8:59PM", "6" for "9PM - 11:59PM", or "7" for "12 midnight -5:59AM".

**7.6 Flexible Questions**

Besides the basic questions concerning the angler's trip, catch and effort, NMFS reserves the right to add up to 10 questions per intercept which may vary geographically and temporally to address specific resource management concerns (for example: marine mammal or sea turtle sightings, attitudes and opinions concerning management options, basic economic questions). In practice, these additions to the questionnaires have been found to add little to the cost of conducting the interviews, and they have not affected overall response rates. NMFS is concerned with possible effects of unnecessarily long interviews and will keep the number, length, and complexity of these questions to a minimum.

NMFS will submit any supplemental questions to the Contractor at least 45 days before the beginning of each wave. If an economic survey is in effect in a particular sub-region, the

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flexible questions would be used for the intercept add-on of the economic survey and no other use.

**7.7 Economic Survey Telephone Follow-Up Instructions**

The MRFSS Intercept Survey Contractor shall work together with the NMFS to develop the questionnaire to be used for the Follow-Up Economic Telephone Interview in each given year for a given Region. NMFS will supply draft questionnaires at least two months prior to the start of data collection. The Contractor shall provide advice on wording and structure of questions. The final questionnaires shall be developed by at least one month prior to the start of data collection. The questionnaire shall consist of 30-40 questions. "Key" questions shall be identified in the questionnaire by an asterisk (\*). Responses to key questions will be considered more important for proper analysis of the data than responses to non-key questions. The Contractor shall be expected to specifically monitor refusal rates for key questions and to make suggestions for changes to reduce key item refusals.

The follow-up survey instruments will be designed to collect data needed for economic valuation and impact studies. A separate contract will be awarded for the conjoint follow up mail survey and that questionnaire is not included here. A few of the variables from the expenditure survey instrument are also key to valuation/demand models. Different versions of the follow-up telephone interview questions may be used depending on the target behavior, sub-region, state and/or random selection of specific question parameters. Data elements other than those listed below may be added to allow for specific economic impact or valuation studies related to particular selected target species. NMFS will ensure that the number of data elements and phrasing of questionnaires are constructed to maintain good response rates and practical field administration. Examples of the 1998 Northeast and 1999 Southeast telephone follow-up questionnaires are available at [http://www.st.nmfs.gov/st1/econ/rec\\_econ.html](http://www.st.nmfs.gov/st1/econ/rec_econ.html).

The items listed below are indicative of the kinds of questions to be asked on an expenditure telephone followup survey (and are identical to those asked in the 2000 Pacific coast expenditure survey, found at the website listed above). Questions asked of all respondents are denoted with the abbreviation AR. Other abbreviations are as follows: OA denotes question asked of overnight respondents; BO denotes questions asked of respondents who own a boat. Instructions for the most likely items are as follows:

For each Item the subset of respondents that will be asked the given question is indicated in the following manner. Items asked of all respondents are denoted with the abbreviation AR, OA denotes questions asked of those anglers that have participated in overnight fishing trips, and BO denotes questions asked of respondents who own a boat. Anglers are asked during the intercept survey if they are on an overnight or one day trip. The first nine items are administered to overnight trippers only.

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- Item 1      Nights away from home (OA) – Number of nights away from home is asked so that trips of anglers on multi-day trips can be characterized.
- Item 2      Days spent fishing (OA) – Number of days spent fishing on trip is asked so that trip expenditures can be apportioned into fishing expenditures. If the answer here is equal to the response to Item 1, Item 3 is skipped for lack of relevance.
- Item 3      (OA) – The number of days spent fishing while on an overnight stay will be used to calculate the portion of total lodging costs that may be allocated to fishing. Even though fishing may be the primary purpose for making a trip, only those expenses directly related to fishing may be appropriately attributable to fishing. Thus, if an individual fishes on 2 days of a 5 day trip only those expenses associated with the two days spent fishing may be allocated to fishing.
- Item 4      Primary reason for trip (OA)– To characterize the nature of the overnight trip the angler is asked if fishing was the primary reason for the overnight trip.
- Item 5      Number in group (OA) – The number of people traveling together allows the calculation of individual expenditures. If the response is “1” then questions regarding group dynamics are skipped (Item 5 and Item 6).
- Item 6      Number of anglers (OA) – Number in group that actually went fishing allows the apportionment of group expenditures to fishing related expenditures.
- Item 7      Number anglers paying (OA) – Number of people sharing expenses helps to apportion individual expenditures.
- Item 8      Trip expenses (OA) - Expenditure data drives the analysis of economic impacts. This question gathers information regarding direct individual trip expenditures on lodging, food, drink, refreshments, public transportation, equipment rental, parking or access fees, bait, ice, boat fuel (if private boat or rental boat mode), and passenger fees (if charter or party boat mode). If angler reports any positive amount in Item 8 go to Item 9 otherwise skip to Item 10. Also, if county of intercept equals county of residence, skip to Item 10. Also if county of residence and county of intercept are in the same state, ask Item 9a and Item 9b, but skip Item 9c. Otherwise, ask all three parts of Item 9.
- Item 9a      % of expenses in intercept county (OA) – Percentage of expenditures made in the county of intercept helps allocate expenditure regionally which is very



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helpful in economic impact modeling.

- Item 9b % of expenses in intercept state (OA) - Percentage of expenditures made in the state of intercept helps allocate expenditure regionally which is very helpful in economic impact modeling.
- Item 9c % of expenses outside of intercept state (OA) - Percentage of expenditures made outside the state of intercept helps allocate expenditure regionally which is very helpful in economic impact modeling.
- Item 10 Income foregone (AR) – Foregone income is an important component of the opportunity cost of the angler’s time, and the angler was asked whether or not income was foregone. If no income was foregone, i.e. paid vacation, weekend, etc, skip to Item 13.
- Item 11 Number of hours typically worked per week (AR) – Weekly hours worked is a component of opportunity cost of time.
- Item 12 Household income (AR) - Total annual household income will be used to develop angler profiles for the Regions. Also, income is an explanatory variable used in the estimation of economic valuation models. Thus, income will be used in estimation of saltwater recreational fishing values in each Region.
- Item 13 Type of fishing license (AR) – Asking anglers what type of license they buy can help create angler profiles.
- Item 14 Expenses by category (AR) - Expenditure data drives the analysis of economic impacts. This question gathers information regarding direct expenditures on rods and reels, tackle, and gear annually. If angler reports any positive amount in Item 14 go to Item 15 otherwise skip to Item 16.
- Item 15a % of expenses in county of residence (AR) – Percentage of expenditures made in the county of residence helps allocate expenditure regionally which is very helpful in economic impact modeling.
- Item 15b % of expenses in state of residence (AR) - Percentage of expenditures made in the state of residence helps allocate expenditure regionally which is very helpful in economic impact modeling.
- Item 15c % of expenses outside state of residence (AR) - Percentage of expenditures made outside the state of residence helps allocate expenditure regionally which is very helpful in economic impact modeling.

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- Item 16 Boat ownership (AR) - Boat ownership may influence attitudes toward fishing and may affect the type of trip, species targeting behavior, and fishing site selection. Boat ownership will be incorporated into the economic valuation model. If respondent does not own a boat, additional boat information is unnecessary. In this case skip to Item 21.
- Item 17 % of time boat used for saltwater fishing (BO) – Percentage of time boat was used for saltwater fishing annually is used to apportion boat expenses to saltwater fishing.
- Item 18 Boat length (BO) - The length of the boat used for fishing will be used to provide descriptive information about the regional recreational fishing fleets. Additionally, boat characteristics such as length may influence species targeting behavior and site selection.
- Item 19 Boat expenses (BO) - Expenditure data drives the analysis of economic impacts. This question gathers information regarding direct annual expenditures on boat expenses like boat purchase/loan payments, boat accessories, and mooring or storage. If angler reports any positive amount in Item 18 go to Item 20 otherwise skip to Item 21.
- Item 20a % of boat expenditures made in county of residence (BO) – Percentage of expenditures made in the county of residence helps allocate expenditure regionally which is very helpful in economic impact modeling.
- Item 20b % of boat expenditures in state of residence (BO) - Percentage of expenditures made in the state of residence helps allocate expenditure regionally which is very helpful in economic impact modeling.
- Item 20c % of boat expenditures made outside state of residence (BO) - Percentage of expenditures made outside the state of residence helps allocate expenditure regionally which is very helpful in economic impact modeling.
- Item 21 Annual expenditures on fishing gear (AR) - Expenditure data drives the analysis of economic impacts. This question gathers information regarding direct annual expenditures on other related fishing gear like camping equipment, binoculars, clothing, magazines, or club dues. If angler reports any positive amount in Item 21 go to Item 22 otherwise skip to Item 23.
- Item 22a % of annual gear expenditures in county of residence (AR) – Percentage of expenditures made in the county of residence helps allocate expenditure regionally which is very helpful in economic impact modeling.

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- Item 22b % of annual gear expenditures in state of residence (AR) - Percentage of expenditures made in the state of residence helps allocate expenditure regionally which is very helpful in economic impact modeling.
- Item 22c % of annual gear expenditures outside state of residence (AR) - Percentage of expenditures made outside the state of residence helps allocate expenditure regionally which is very helpful in economic impact modeling.
- Item 23 Annual expenditures on vehicles/homes (AR) - Expenditure data drives the analysis of economic impacts. This question gathers information regarding direct annual expenditures on vehicles or vacation homes used primarily for saltwater fishing. If angler reports any positive amount in Item 23 go to Item 24 otherwise skip to Item 25.
- Item 24a % of annual expenditures on vehicles/homes in county of residence (AR) – Percentage of expenditures made in the county of residence helps allocate expenditure regionally which is very helpful in economic impact modeling.
- Item 24b % of annual expenditures on vehicles/homes in state of residence (AR)- Percentage of expenditures made in the state of residence helps allocate expenditure regionally which is very helpful in economic impact modeling.
- Item 24c % of annual expenditures on vehicles/homes outside state of residence (AR) - Percentage of expenditures made outside the state of residence helps allocate expenditure regionally which is very helpful in economic impact modeling.
- Item 25 Contingent behavior (AR)– This set of contingent behavior questions seeks to determine how anglers would substitute away from recreational saltwater angling if they decided to quit spending money in the county of intercept.
- Item 26 Number of years saltwater fishing (AR) - The number of years a respondent has been saltwater recreational fishing will be used to characterize anglers. Years of experience may be treated as a measure of avidity and used in modeling the economic value of saltwater recreational fishing. Years of fishing experience may also be correlated with attitudes toward fishing and a variety of other characteristics such as boat ownership and investment in fishing equipment.
- Item 27 Total household income (AR) - Total annual household income will be used to develop angler profiles for the Regions. Also, income is an explanatory variable used in the estimation of economic valuation models. Thus, income will be used in estimation of saltwater recreational fishing values in each

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Region.

**7.8 CHBTS Pre-Validation Visits Questionnaire**

Pre-validation visits do not require a specific questionnaire, but should include a form for recording the observations or reports of the vessel's activity status. An example from the Gulf States is shown below and is included in the Coding Manual.

Int_id	Smp-week	Vsl_id	Vsl_name	County	DATE	TIME	Status	SITE	Source
	37	2800021	BAJA BOYS						
	37	2800024	SOUTH FISHER						
	37	2800028	THREE DORADOS						
	37	2800031	JENNY C						
	37	2800073	ACES WILD						
	37	2800103	CAPT RON'S DREAM						

Status codes:

- 1=Vessel in
- 2=Vessel Out - Charter fishing
- 3=Unable to Validate
- 4=Vessel Out - Non-charter activities
- 5=Vessel Out - Fishing Status Unknown
- 8=Not applicable

Source Codes:

- 1=Direct Observation by Sampler
- 2=Secondary Information (marina operator, booking agent, etc.)

**8.0 Personnel Requirements****8.1 Interviewers**

The Contractor shall be solely responsible for locating, hiring, training and supervising persons to serve as interviewers for the intercept survey. Training and testing, and level of fish identification expertise proposed by a Contractor must meet or exceed NMFS specifications. Trained interviewers, supervised by the Contractor, shall conduct all inter-

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views with the anglers.

#### **8.1.1 Interviewer Qualifications**

Interviewers must have an educational background or field experience in identifying fish species. While interviewers are selected for their skills in fish identification, these are not the only skills required to be a successful interviewer. A good interviewer is one who can approach strangers with little reluctance, who can diplomatically handle touchy situations, who can follow procedures and complete forms with almost compulsive exactitude, and who can identify fish accurately at the species level. The intercept interview involves both a personal interview and a creel census (identification and measurement of the catch); a unique set of skills is required for each. Interviewers also administer the economic intercept survey, which includes sensitive questions such as household income, and require tact and sensitivity.

The specific tasks of a field interviewer are many. The interviewer will be expected to complete site assignments, to have all necessary equipment available and in proper working order (i.e., calibration of scales) while interviewing, to conduct interviews in a professional manner, to complete all forms accurately and to submit all forms in a timely fashion. They are expected to attend at least two regional wave meetings per year with their Regional Representative and other local samplers. Interviewers shall wear appropriate attire and present themselves in a professional manner while in the field.

In addition to obtaining intercept and economic interviews, the intercept interviewer is responsible for submitting site description information that is used in the sampling process to select sites and for updating the CHBTS directory. Intercept interviewers are also responsible for providing timely information on the completion of assignments and productivity information about the assignment.

#### **8.1.2 Interviewer Training**

The Contractor shall be responsible for providing interviewer training for the intercept data collection. Training programs shall be designed to ensure quality and consistency of interviewing methods, questionnaire use, coding method, and quality checks of data. The level of training and content of the training programs must be approved by the NMFS.

Before a training session, all applicants shall be required to take a fish identification test which includes 20 common marine fish species they are likely to encounter in the field. Testing could include using actual fish specimens or use of projections of high resolution 35 millimeter slides, along with descriptions of more subtle taxonomic characteristics. A score of 70% shall be considered passing, and only those with passing grades shall be trained as interviewers. Any trainee who scores below an 85% must re-take the fish

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identification test during their first QC visit and score above an 85% before they can continue to receive assignments for work on the survey.

An extensive training session must be held for all personnel who have not previously worked on the survey and pass the initial fish identification test. This training must cover general intercept interviewing procedures as well as procedures specific to the MRFSS and the Economic surveys. Training sessions must include a general overview of the background, purpose and design of the MRFSS, the Economic surveys, and the CHBTS, and the uses of the data collected. The introduction shall be sufficient to allow interviewers to respond to general questions regarding the MRFSS, Economic surveys, and CHBTS. Questions and discussion should be encouraged to ensure that all interviewers understand the importance and overall purpose of the surveys. Interviewers should be briefed on the existence of other programs in various states and regions that monitor charter and head boats, such as the South Carolina mandatory logbook program. The overview must be followed by an item-by-item explanation of the data collection instruments and a review of all materials used to conduct the interviews.

Subjects addressed in the Intercept Survey training sessions must include, but are not necessarily limited to:

- An introduction to the objectives, goals and operation of the MRFSS, Economic surveys, and the CHBTS, and uses of the data that educates interviewers on appropriate responses to general questions from anglers in the field.
- A review of survey definitions and scope of coverage.
- Procedures for assignment generation, visiting the assigned site first, selecting alternate interview sites and for updating site register data, supplemented by a discussion of sources of local information on fishing activity to aid in these tasks.
- Proper procedures for screening for eligible anglers, conducting the interview and coding the data forms, including an item-by-item explanation of the data collection instruments and a review of all materials used to conduct the interview.
- Proper procedures for conducting the Economic Intercept Surveys including an item-by-item explanation of the data collection instruments.
- Proper procedures for updating the CHBTS directory.
- Assuring confidentiality of responses, and the reason for call-backs to validate 10% of the interviews.
- Identification of the twenty most frequently occurring species in the interviewer's geographic sampling area without the aid of reference materials. Identifications must be accurate at the species level. In areas with high species diversity, the Contractor should consider expanding the number of species required to be identified correctly.
- The effective use of taxonomic keys and other reference materials, including Peterson's Field Guide of Atlantic Coast Fishes of North America, to identify other less common fish species in the interviewer's sampling area.
- A review of local names for fishes, identification aids for local fish commonly

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- misidentified, and the use of the specified finfish species list.
- Principles and techniques of random sampling, so that decisions on sub-sampling fish for measurement and sub-sampling anglers at high use sites can be properly determined under a variety of field conditions.
- Correct techniques for length and weight measurements for different groups of fishes, including scale calibration.
- Proper procedures for completing all assignment tally and productivity reports.
- Interviewers shall be informed of appropriate attire and how to present themselves in a professional manner.

Interviewers will be provided with a copy of the intercept survey Procedures Manual, copies of the Privacy Act policy, the Uniform Resource Locator (URL) for the MRFSS web site, and all other necessary documents and forms.

Referral lists for additional information, including the MRFSS Internet address and telephone numbers for local, State and Federal resource management agencies in each area, shall be provided to the Intercept Contractor and must be provided to all interviewers.

Each training session must contain periods of role playing to result in good interviewing technique. All trainees must conduct practice interviews with supervisors to allow first-hand criticism of their interviewing technique.

#### **8.1.3 Interviewer Testing**

At the end of the training session, all potential interviewers shall be tested on the following skills:

1. accurate identification of common fish in the field and proper use of keys when unusual fish are encountered;
2. proper conduct of interviews;
3. effective handling of people and a range of problems encountered in the field;
4. knowledge about the survey;
5. proper coding of the interview and site description form, and ASF;
6. proper procedures for randomly selecting anglers to interview,
7. proper procedures for the Economic Intercept Survey, and
8. proper procedures for updating the CHBTS directory.

Testing could be accomplished by completing Coding Forms while following hypothetical video or audio taped interviews. Testing must also verify the interviewer's aptitude for successfully interviewing people in the subregion they will sample. Role playing would be a desirable method of determining this aptitude.

Field supervisors must conduct follow-up quality control (QC) testing of each interviewer

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after the training session. Such testing must be conducted by field visits while an interviewer is conducting intercepts. Items to be tested at this later date would include, but not necessarily be limited to: knowledge of the MRFSS, species identification, proper coding of responses, and interviewing technique. Additionally, each interviewer shall be administered a 'refresher' fish identification test at least twice annually, to ensure that they retain their knowledge of common local species of fish. These tests may be administered during QC visits or at regional wave meetings utilizing slides, drawings, photographs, or live specimens; at the discretion of the Contractor and Regional Representative.

For both initial and later testing, a passing score is designated as 80 percent accurate identification of 20 of the most common species in an interviewer's state, 75 percent correct coding of forms, and 75 percent correct answers on interview procedures for the base survey, economic add-ons (if any), and maintenance of the CHBTS Directory.

## **8.2 Field Supervision**

Intercept interviewers shall be supervised by a field supervisors called Regional Representatives (RR).

### **8.2.1 Regional Representative Qualifications**

Regional representatives must be knowledgeable about the MRFSS, the Economic surveys, and the CHBTS, and awareness of the existence of the other charter and head boat monitoring programs. RRs must have extensive field interviewing experience and training in fish identification in the geographic area under supervision. They must also have effective skills in managing and motivating personnel, and particularly in the application of techniques to prevent interviewer "burnout."

### **8.2.2 Supervisory Tasks**

The RR's role shall include the following:

- training and supervision of intercept survey interviewers,
- spot-checking of interviewers on assignment (QC visits),
- intercept survey interviewing as needed to meet quotas,
- regularly maintaining contact and exchanging information with each interviewer,
- reviewing and maintaining site lists,
- reviewing and maintaining CHBTS directories,
- serving as a liaison with other local or state survey efforts,
- reviewing monthly records of raw fish data for their region (fishdumps);
- attending three wave review meetings a year to review data and address field procedure issues as they arise, and
- reviewing the forms submitted by new interviewers from their first five assignments.



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Upon successful completion of initial MRFSS training, additional testing and training of prospective interviewers must be conducted in the field by a RR for the area in which the sampler will work. Each new interviewer must be observed in the field during one of his/her first three assignments. Additional field observations and training of new interviewers are required until field supervisors can ensure that intercept interviews are being conducted completely, consistently, accurately and in accordance with the standard procedures in this manual. Supervisors should focus on the interviewers' abilities to deal effectively with people, properly conduct interviews, accurately code interview forms, and correctly identify species.

All forms from the first five assignments (or a minimum of the first 100 intercept coding forms) from each new interviewer must be handled separately, and reviewed for accuracy, completeness, legibility and consistency of coding by the RR in each area. New interviewers are defined as interviewers with no previous experience conducting interviews for the MRFSS. Special attention shall be directed at errors in biological reasonableness, species identification, completeness and consistency of coding. RRs must also verify that intercepts are collected at assigned sites or that alternate site selection procedures are used properly. Remedial action, including training, suspension or termination shall be taken whenever appropriate.

Although the RR may not directly observe later Coding Forms, the RR must still be involved in the resolution of all potential species identification problems and biological reasonableness issues for data submitted by samplers in his/her area. RRs will be expected to review all fish records for interviewers in their area. In particular, the RR must be able to verify the identification and measurements of all species reported by comparison with natural history information from the literature.

Following initial field training, all interviewers shall be observed in the field by a RR at least once every six months. These quality control visits shall be made at least twice annually during an interviewer's regularly scheduled assignment, and should include observation of interviewing technique as well as a check that the interviewer has all the required interviewing materials. A 'QC checklist' has been successfully utilized in the past and is strongly encouraged, along with a brief quiz on protocol. The RRs shall score each interviewer based on performance at the quality control visit, and the intercept contractor shall report to the NMFS program office the date and score of each QC visit for each interviewer number. The first QC visit, made during one of a new interviewer's first three assignments, shall count as one of the two annual QC visits. Additional training or remedial action shall be taken whenever appropriate.

Field supervisors will be expected to conduct intercept interviews to backfill in those areas where there are interviewer staff shortages or interviewing quotas are lagging. They must also take the lead role in verifying that the Site Register for their area is as accurate as possible.

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Field supervisors shall be regularly kept informed by the NMFS and Contractor of issues (e.g. regulation changes, quota closures, and proposed management changes) in the recreational fishery in their interviewing area using appropriate communications (e.g. newsletters, phone calls, web notices, telefax). Field supervisors are expected to communicate frequently with interviewers in their area. Questions from interviewers on site assignments and sampling protocol should be encouraged. Regular feedback on Coding Forms is essential and remedial action must be taken when appropriate. Newsletters or meetings with groups of interviewers or other focus groups to review data collection procedures, site-specific sampling problems, species identification and new recreational fishery developments would be highly desirable. Follow-up species identification training conducted during field observation may be necessary for species of particular concern.

RRs are expected to contact appropriate state agencies for information on current management regulations and issues of concern to anglers, and to coordinate sampling with State and regional federal personnel when overlapping surveys exist. Referral lists including phone numbers for contacts in local, state and federal resource management agencies in each area are to be provided by NMFS to the Contractor and then to the RR's.

**8.3 Intercept Validation**

Interviewers must collect names and telephone numbers of anglers for the purpose of telephone validation. For each wave, ten percent of the interview forms for each interviewer shall be randomly selected for validation. The main purpose of the telephone validation is to independently verify that the interviewer was at work where and when he/she was supposed to be. It also provides project managers with feedback on interviewer conduct in the field.

Respondents shall be contacted by phone by the Intercept Contractor. The contractor should use personnel with an objective view-point to conduct the validations, in order to reduce any possible bias. A Regional Representative should not conduct validations for his/her own interviewers, nor should field interviewers conduct validations of other field interviewers.

A sample validation form is included (Appendix G). Anglers are asked to verify that they were interviewed at a particular fishing site on a particular day. They are also asked whether the interviewer asked to examine their catch. Anglers are then given an opportunity to voice their opinions on the interviewer's conduct.

If interviewer problems are suspected, the validation rate should be increased to investigate the problem. Open ended conversations by experienced contract personnel with interviewed respondents is also a technique that should be employed when problems

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are suspected. While names and telephone numbers will not be volunteered by all anglers, experience shows that approximately 70 percent of anglers are willing to provide this information. Interviewers with significantly lower response rates to this data item, or with a high occurrence of bad telephone names and numbers should be closely supervised.

**8.4 Key Personnel**

The Principal Investigator, Program Manager, Fishery Biologist(s) (day to day operations & QC), SAS Programmer, Lead Trainer are the key personnel. The Principal Investigator is the company official with primary responsibility for this project. The Program Manager is the position responsible for daily operations. The Principal Investigator Program Manager should have extensive experience in conducting large, complex person-to-person interviewing surveys. The Fishery Biologist(s) positions are also responsible for day to day operations and quality control. The Fishery Biologist(s) should have at least a Bachelor's degree in Fisheries Science, Biology, or a related field, knowledge of fish identification procedures, and general knowledge of the Atlantic coast and U.S. Caribbean fish species and recreational fisheries. The SAS Programmer is the position responsible for cleaning and delivering the SAS data sets and creating the data tables required in the wave reports. The SAS Programmer should have documented SAS training and programming skills. The lead Trainer is the position responsible for initial and continuing training of field supervisors and field interviewers. The lead Trainer should have experience with conduct of large complex person-to-person interviewing surveys and in training interviewers for those types of surveys. The offeror shall provide the curriculum vitae for the individuals proposed to fill each of these positions. The curriculum vitae should address their technical qualifications and experience in conducting large complex surveys.

**8.5 Wave Review Meetings**

Representatives of the Telephone and Intercept contractors, all RRs, NMFS MRFSS staff, and interested personnel from other Federal and State entities shall meet periodically (wave review meetings) to review preliminary catch estimates, to discuss field interviewing procedures and cost-effectiveness procedures, to provide continuing education and training of the RRs and field interviewers, and to enhance cooperation between the MRFSS and other programs. During the 1999-2001 contract, the wave meetings were held jointly with the Atlantic/Caribbean contractor and the GSMFC. This helps to ensure that procedures stay consistent among regions, to exchange information, and to maintain a level of comradery between the various entities. This arrangement is expected to continue into the new contract.

In general, wave review meetings will be held as follows:

- Wave 1: Intercept Contractor (for Caribbean) and GSMFC, held by conference call,

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- late March/early April,
- Waves 2-3: combined meeting of Intercept Contractor and GSMFC, location rotates between Northeast and Southeast, late August/early September,
- Wave 4: separate or combined meeting of Intercept Contractor and GSMFC, if combined the location rotates between Northeast and Southeast, November,
- Wave 5-6: combined meeting of Intercept Contractor and GSMFC, held at or near NMFS headquarters in Silver Spring, late February/early March.

The Intercept Contractor is expected to pay for travel for their staff, including RRs, although arrangements for state sub-contracting RRs are between the contractor and those states. NMFS is responsible for travel by MRFSS staff, and the GSMFC is responsible for their staff and RR travel. Other interested parties are responsible for their own travel.

Regional representatives (RR) shall conduct at least three regional (or state) wave meetings with their field staff per year. All interviewers should be encouraged to attend all three regional (or state) wave meetings per year. Attendance at at least two of these is required for each interviewer. These meetings will refresh techniques established in previous waves, review the basic details of the surveys, explain the exclusions in questionnaires that are applicable to that wave and point out any changes in forms. Interviewers shall be kept informed of developments in the recreational fisheries being surveyed, and shall be able to refer respondents to the MRFSS staff for further information. Questions on protocol and fish identification should be strongly encouraged during these meetings. The contractor should provide the NMFS with a record of each regional wave meeting, including an agenda and an attendance list.

**9.0 Data Bases, Editing Procedures, and Data Delivery**

**9.1 Data Entry**

**9.1.1 Intercept Data Entry**

The Contractor shall use a data entry program provided by NMFS. The data entry program was designed to run on commonly available software (i.e. Microsoft Access). A recent version of the data entry program is on the MRFSS web site ([http://www.st.nmfs.gov/st1/procurement/mrfss\\_survey.html](http://www.st.nmfs.gov/st1/procurement/mrfss_survey.html)) for examination by offerors. The data entry program includes modules for data entry from questionnaires similar to the economic flex questions for the conjoint and expenditure surveys.

The data entry program employs logical checks to prevent incorrect coding entries and to flag illogical entries. All checks contained in the intercept checking program (intcheck) must be incorporated into the data entry program. Every data element must be checked

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for data entry errors, reasonableness in falling within an acceptable range, and logic in relation to other data elements. Duplicate identification numbers must also be identified and corrected. An example can be found at the web site [http://www.st.nmfs.gov/st1/procurement/mrfss\\_survey.html](http://www.st.nmfs.gov/st1/procurement/mrfss_survey.html).

The data entry program can be run in three different modes of operation:

- concurrent data entry and checking of all variables;
- uninterrupted data entry, with data checking occurring after a data batch is entered; and
- double entry of key variables during data entry, with data checking occurring after a data batch is entered.

Each of those above methods have advantages and disadvantages with regard to smooth data entry versus immediate checking of errors, and using the appropriate personnel to check errors. Current practice is the first method listed. Offerors should address which mode of data entry they would propose to use and summarize their quality control process.

If feasible automated data recording technology became available for on-site intercept interview recording, NMFS would work with the Contractor to develop acceptable procedures.

#### **9.1.2 Economic Telephone Follow-up Data Entry**

It is recommended that the Economic telephone follow-up questionnaire should be administered through a CATI program which provides the data entry function. If an alternate process is intended, the offeror should describe that during the oral presentation.

#### **9.1.3 CHBTS Directory Updates Data Entry**

Offerors should propose what method they would use to handle data entry for updates to the CHBTS directory. Currently in the Gulf States region, the state supervisors compile updates during the wave and send only those records with updated information to the GSMFC. The GSMFC staff then archives the 'current' Directory (with a date-stamp) and replaces existing records with the new updated records. A similar system could be used by the intercept contractor if all RR's and state supervisors have compatible software and experience in coding. However, care would have to be taken to ensure any additional updated information from the telephone contractor is properly inserted.

#### **9.1.4 CHBTS Pre-Validation Visits Data Entry**

Offerors should propose what method they would use to handle data entry for the CHBTS pre-validation data. Currently, the Gulf States code the information in either Excel

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spreadsheets or dBase files which are then compiled into the weekly SAS data files by the GSMFC.

#### **9.2 Record Formats**

The data formats, units of measure, and coding used for the intercept survey data bases shall be provided by NMFS and shall be the same for all Regions.

##### **9.2.1. Intercept Interview Data Bases**

The intercept interview data base contains data collected from completed interviews (status 1 and 2). There are seven record types in the creel intercept interview data bases. For every interview, there is a unique ID\_CODE coded on all records associated with that interview. The ID\_CODE is used to link all records of an interview. The ID\_CODE is 16 digits long and it consists of assignment number (usually 1, occasionally 2), interviewer number (4 digit), date of the survey (8 digit [year, month, day]), and interview number (3 digit). Interview numbers begin with one and are assigned consecutively to interviews within an assignment. For example ID\_CODE 1232220010914018 would refer to the eighteenth interview collected by interviewer 2322 in his first assignment on September 14, 2001.

The seven record types in the intercept interview data bases are:

1. Angler/Trip Data - one I1 record per interview. I1 records contain fisherman and trip information including ID\_CODE, location of the interview, fishing area and mode, trip and fishing hours, gear used, geographic residence and avidity of the angler, presence of phone lines and type of housing, species targeted, presence/absence of catch, number of contributors to the catch, and total numbers of I2-I6 records associated with the interview. Special questions such as artificial reef fishing, sea turtle sightings, tournament fishing, etc. vary by year and area, and are usually recorded on the I1 records.
2. Unavailable Catch (Catch Type B1 and B2) - multiple I2 records for each interview, one record for each species code/disposition combination. More than one disposition code can be used for a particular species code. I2 records contain the ID\_CODE, and the number and disposition of unavailable catch by species. Disposition codes categorize catch as released alive (catch type B2), and used for bait, filleted, or other consumptive use (catch type B1). For unavailable catch, the species name is reported by the angler but can not be verified by the interviewer. The variable containing the numbers of fish caught (NUM\_FISH) is additive across all records. In certain years and areas, shellfish catch information was collected and coded on I2 records. These records are kept in separate data files.
3. Available Catch (Catch Type A) - multiple I3 records for an interview, one record for

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each individually weighed/measured fish. If no fish were weighed or measured, there will be one record for a species. I3 records contain the ID\_CODE, species code, numbers of fish, disposition of the catch, and length and weight measurements for fish brought to land and identified to species by the interviewer (catch type A). Only one disposition code can be used for each species. The variable containing the number of fish caught (FISHINSP) is not additive across records. This number is the total number of that species caught and is carried across all records for that species with individual length/weight measurements. In certain years and areas, shellfish catch information was collected and coded on I3 records. These records are kept in separate data files.

4. Group Catches - only one GP4 record per interview and this occurs only when A-type catches can not be separated for individual anglers. If catches can be separated, no I4 record exists. I4 records contain the ID\_CODE of the interviewed angler, as well as the ID\_CODE of the angler whose records contain combined type A catches.

5. Socio-Economic Data - one I5 record per interview. I5 records contain the ID\_CODE and socio-economic data collected in 1983 on the Pacific coast, in 1987 nation-wide, and in 1990 on the Atlantic and Gulf coasts. Questions and resulting data vary between the three years. Travel costs were the primary emphasis.

6. First Interview of Fishing Party - only one I6 record per interview. I6 records contain the ID\_CODE of the interviewed angler, and the ID\_CODE of the first individual interviewed within a fishing party. This record was begun in 1991 in order to link all interviews within a party together.

7. Follow-Up Telephone Interview Data - only one I7 record per interview. I7 records contain the ID\_CODE of the interviewed angler, and the responses to the economic telephone follow-up survey.

The intercept SAS file naming conventions are standard across years and regions. Naming conventions are:

Record Type	File Name
1	I1_YYYYW.ssd01
2	I2_YYYYW.ssd01
3	I3_YYYYW.ssd01
4	GP4_YYYYW.ssd01
5	I5_YYYYW.ssd01
6	I6_YYYYW.ssd01
7	I7_YYYYW.ssd01

where I=intercept, YYYY = year, W = wave, and .ssd01 is the SAS data set extension. The dataset extension may vary according to the version of SAS. All SAS datasets must be converted to transport format (.xpt) before delivery. Appendix F lists the variable names, formats, and codes for each record type.

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### **9.2.2 Master Site Register**

The MSR files contain the current list of sites for a wave and year with that wave's estimated fishing pressure for each site by mode, month, and day type. There is one record per site. Appendix F lists the variable names, formats, and codes. The MSR is a SAS data base that contains all of the information for all states by wave and year.

The naming conventions are standard across years and regions. Naming conventions are:  
File Name: ATLreg<wave><yy> (e.g. ATLreg101 for wave 1, 2001).

### **9.2.3 Assignment Summary Files**

The assignment summary files contain the information provided on the ASF. There is one record per assignment. Appendix F lists the variable names, formats, and codes. Assignment summary data shall be maintained on magnetic media in a form that would allow each assignment and its outcome to be quantified (database, ASCII or spreadsheet, not word processing) and integrated with the identification code from the intercept form. The naming conventions are standard across years and regions. Naming conventions are: AS\_YYYYW.ssd01, YYYYW similar to intercept data above.

### **9.2.4 Assignment Completion Files**

The assignment completion files contain information on the outcome of all fixed, flexible, and reserve assignments. There is one record per assignment. Appendix F lists the variable names, formats, and codes. Assignment summary data shall be maintained on magnetic media in a form that would allow each assignment and its outcome to be quantified (database, ASCII or spreadsheet, not word processing) and integrated with the identification code from the intercept form. The naming conventions are standard across years and regions. Naming conventions are: AC\_YYYYW.ssd01, similar to intercept data above.

### **9.2.5 CHBTS Directory**

The CHBTS directory file contains the current list of head and charter boat vessels for a wave and year. Appendix F contains variable names, formats, and codes for the Charter and Head Boat Directory. This updated directory will be provided to the Telephone Contractor for conduct of the CHBTS.

The naming conventions are standard across years and regions. Naming conventions are:  
File Name: <st>dir<wave><yy> (e.g. sdir500 for South Carolina, wave 5, 2000).



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Pre-validation data are to be stored in a specified format such that multiple records for each vessel and vessel operator can be linked by unique survey-specific identifiers. The vessel identifier will be specific to each boat and listed in the directory for each state. Information to be recorded for each pre-validation are vessel identifier, date of pre-validation, time of day of pre-validation, state, county and site codes of location where boat validated, presence of boat, activity of boat, source of information. Variable descriptions and formats are provided in Appendix F.

The naming conventions are standard across years and regions. Naming conventions are:  
File Name: <sub-reg code><yy>v<week>.<sas-tag> (e.g. g01v08.sas7bdat for Gulf region, year=2001, week=8 in PC-SAS format).

**9.3 Data Edits**

The Intercept Survey Contractor shall be responsible for data editing and delivering error-free data on the initial delivery date. Error-free data is defined as data that passes through NMFS' quality assurance program with no errors detected. The NMFS intercept data quality assurance programs will be provided to the contractors and an example listing is located on the web site at [http://www.st.nmfs.gov/st1/procurement/mfss\\_survey.html](http://www.st.nmfs.gov/st1/procurement/mfss_survey.html) with user id = demo and password = ur2sea. The main error-checking program is called intchk\_2001.sas (referred to as the 'intchk' program) and is comprised of a main program, called macro routines and referenced data tables. It is periodically updated as required by the NMFS as the survey or quality control checks are modified, and the updated version or modifications are provided to the contractor. Any modifications or improvements to this program made by the contractor need the approval of the NMFS' MRFSS office staff before implementation.

Contractors are required to include in their proposals a complete description of quality control processes for ensuring accurate data entry, editing and error correction. Proposals lacking well-defined methods of quality control shall be considered non-responsive. Quality control processes for ensuring accurate data entry and editing the data must be approved by NMFS prior to their implementation. Copies of the error-checking programs used in the 2001 survey shall be provided to the successful data collection Contractor, but shall not be assumed to be complete or accurate for purposes of this solicitation. New error checks continue to be developed by NMFS and suggestions from the Contractor are encouraged.

One current method of data quality control and editing involves the generation of a list of all fish records collected in the intercept creel survey, broken down by state and record type (2 or 3). This list is referred to as a "fishdump" (Appendix K) and will be required to be generated each month by the Contractor for distribution to Regional Representatives, state

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representatives, and the NMFS. The fishdump is used as a tool for checking and editing raw fish records in the data before delivery of the monthly and wave data sets to the NMFS. The format for distribution can be electronic (via email attachment or a website), or by hard copy. The following data elements are the minimum that must be included: species code; common name; disposition; number of fish; mode of fishing; area fished; gear used; county and site of intercept; and the unique intercept identifier components (the assignment number; interviewer identification code, month, day, and intercept number for that assignment).

The Contractor shall allow reasonable time between distribution of the fishdump and data delivery for respondents to review the records, make comments, and for the Contractor to follow up on the comments and make edits as deemed necessary. In addition, all comments made by the NMFS in response to the fishdump must be addressed in a spreadsheet to be delivered electronically after data delivery that identifies the record questioned and how the question was resolved.

Updates to the intchk and any additional error-checking programs from NMFS shall be provided periodically to the Contractor, and it is expected that updates will be implemented by the Contractor in a timely manner (within one wave of receipt). Output from the intchk program shall be delivered by the contractor to the NMFS program office for each wave's worth of data according to the delivery schedule in Section F. Any errors or checks which appear on the output shall be annotated by the Contractor to indicate the resolution.

Examples of intercept survey editing include the following: editing for duplicate identification numbers; correct state, county, and site codes; correct coding by disposition on the fish records, reasonableness with regard to occurrence of a fish species within a region, area or mode; reasonableness of catch data including number caught, lengths and weights; reasonableness of trip and fishing hours, number of days spent fishing in the past 12 and two months; and residence of anglers.

The historical MRFSS data base from the intercept surveys also may be used by the successful Contractor for constructing criteria and performing outlier analyses.

Questionable records identified by the error-checking program must be examined by the Contractor. This may mean a call-back to the interviewer. Possible errors may also be found during the wave review meetings and those data must be examined by the Contractor.

Those records questioned, and corrected or verified, should be reported to NMFS on spreadsheets listing the key information to identify the record (state, wave, angler id, assignment number, month, day, intercept number) and the value questioned, the resolved or corrected value, and the reason for the correction or why no correction was deemed necessary. If outlier analysis is used to question the recorded responses, the outlier (limit)

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values should be included on the spreadsheet.

If errors are found after the wave meetings error checking process, the Contractor shall be responsible for correcting the data within one month of the notification of the error, if the error was allowed or caused by the Contractor.

**9.3.1 Editing Prior to Data Entry**

Interviewers and RRs must follow strict guidelines while editing coding forms before submission for data entry. Coding problems are most easily resolved at the field level, before much time has passed since data collection. These guidelines are meant to ensure that all items on the coding form are completed with valid entries and that the data are consistent and accurate.

A general guideline for editing is that all blocks on the front of the coding form should contain numbers except for item 17 which may be left blank. This includes leading zeros and "8"s for not applicable questions. Refused items must be completely coded with "9"s and responses of "don't know" must be coded with "9"s with the last digit as "8."

**9.3.1.1 Intercept Field Editing**

Item-by-item instructions apply to the 2001 intercept questionnaires (Appendix G). Some change in data items should be expected from year to year.

- Item 1        Record Type - "1" is preprinted on the Coding Form, no editing is necessary.
- Item 2        Assignment No. - All forms from the same assignment should have the same and accurate assignment number. If there is an assignment "2", there must be an assignment "1" for that interviewer on that date.
- Item 3        Interviewer Code - All forms from the same assignment should have the same and accurate interviewer code.
- Item 4        Year/Month/Day - All forms from the same assignment should have the same and accurate date.
- Item 5        Interview Number - All forms from the same assignment should have a unique and sequential interview number, beginning with "01."
- Item 6        Hour - Hours should be checked against times at site. Check to make sure that 24-hour time is used.

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- Item 7        State - All forms from the same assignment must have the same and accurate State code.
  
- Item 8        County - All forms from the same assignment must have the same and accurate county code. County codes must match those on the site register for the State of intercept.
  
- Item 9        Site - There can be no more than three site codes used for the same assignment, except when special conditions are in effect. These site codes must be among those on the site register for the State and county of intercept, except when an alternate site was previously unknown and needs to be added to the register.
  
- Item 10       Interview Status - Check the completeness of the coding form and verify the interview status. A status of "1" must have all questions answered. A status of "2" must have all key questions answered.
  
- Item 11       Fishing From Which Mode? - Intercepts at shore sites must be coded from "1" to "5", while intercepts at boat sites must be coded from "6" to "8".
  
- Item 12       Type of Water Fished In? - Ocean, gulf and other open water must be coded with "1". All other water bodies should be "2" to "5", or the letters for designated estuaries. All interviews from one site in the shore mode should be coded the same.
  
- Item 12a.     Water Body Code (ACCSP) - An 8-digit (xxx.xxxx) code will be used to further identify the specific area fished. These codes are being developed by the ACCSP and will be available in an electronic database. Error checking will probably be best accomplished through modifications to the intchk error-checking program which will allow cross-referencing of state codes and water body codes, and checking for agreement with responses to Items 12 and 13. NMFS will provide these needed error-checks.
  
- Item 13       Three Mile Limit? - Responses other than "1" for Item 12 must be coded with "8" for Item 13. Only responses of "1" to Item 12 can be coded with "1" or "2" for Item 13. Only boat sites can be coded with "2"; shore sites cannot be coded "2".
  
- Item 14       Gear? - The only valid codes are from "1" to "11". Code "11" may only be used in the U.S. Caribbean.
  
- Item 15a      Time Fishing? - The minimum entry is "00.5" and the maximum entry is "24.0". The number to the right of the decimal must be "0" or "5". Time

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fishing should be less than Item 15b -Time on Boat.

- Item 15b Time on Boat? - The minimum entry is "00.5" and the maximum entry is "24.0". The number to the right of the decimal must be "0" or "5". Time on Boat should be larger than Item 15a -Time Fishing.
- Item 16 Additional Hours? - This item, which can only apply to beach/bank shore anglers) should not be more than two times the number of hours entered in Item 15a.
- Item 17 Target Species? - The first position of this item must be completed with a valid species code or left blank. If the first position is blank, then the second position must also be blank. If the first position has a species code, then the second position can be blank or have a second species code. All codes must be valid NODC finfish species codes.
- Item 18 Days in Past 12 Months? - The minimum entry is "000" and the maximum entry is "364" or "365", depending on leap year.
- Item 19 Days in Past 2 Months? - The minimum entry is "00" and the maximum entry from "59" to "62", depending on the months included. This entry cannot be greater than that for Item 18.
- Item 20 Residence? - The State and county codes must be checked against the entries handwritten on the coding form.
- Item 21 ZIP Code? - The ZIP code must be checked against the State and county from Item 20.
- Item 22 Type of Residence? - This item must be coded "1" or "2".
- Item 23 Has Phone? - If Item 22 is coded "1", then this item must be coded "1" or "2". If Item 22 is coded "2", then this item must be coded "8".
- Item 24 Name and Phone Provided? - This item must be coded "1" or "9". Addresses should not be taken. Area code must be included.
- Item 25 Unavailable Catch (Type 2 Records)? - Each Type 2 record must have complete information, including disposition. All species codes must be checked against written names. Unusual species within a subregion/state/mode/area must be verified. All numbers of fish exceeding "100" must be verified. The standard responses for "don't know", "998", or

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"refused", "999", are not allowed for this item. "Given away" or "filleted" are not valid responses for a disposition coded "7". If the intercept is for a group catch, then look at the forms from all group members to be certain that each person's Type 2 fish are on their own form.

Item 26 Were Fish Caught To Look At? - This item must be coded from "1" to "3". If this item is coded "1", the intercept must have at least one Type 3 record. If this item is coded "2" or "3", the intercept cannot have any Type 3 records. If it is coded "3" there must be a Type 4 record.

Item 27 Is Catch Mixed? - This item must be coded "1", "2" or "8".

Item 28 Can Separate Catch? - This item must be coded "1", "2" or "8".

Item 29 Number Who Caught Fish? - The minimum entry is "02". Entries greater than "6" in the shore and private/rental boat modes and "15" in the party\charter boat modes should be verified.

**NOTE:** There are only five acceptable patterns of coding items 27-30:

Item 27	1	1	1	2	3
Item 28	1	2	2	8	8
Item 29	8	1	2	8	8
Item 30	88	88	02-150	88	88

Item 30 Party Size? - If the interviewed angler did not fish on a boat then this number must be "88". Otherwise this number must be at least "1".

Item 31 Available Catch (Type 3 Records)? - Each Type 3 record must have at least a species code and a total number. (Drawing an arrow down for species and number is acceptable.) All species codes must be checked against written names. Unusual species within a subregion/state/mode/area must be verified. Lengths and weights must be checked for reasonableness. Pay particular attention that pounds are not recorded instead of kilograms. The length/wgt relationships of commonly caught fish are checked by the intchk program provided by NMFS and all flagged records must be checked and corrected or documented as acceptable. All numbers of fish exceeding "100" should be verified. The standard responses for "don't know", "998", or "refused", "999", are not allowed for this item. "Given away" or "filleted" are not valid responses for a disposition coded "7". Make sure that the number of records for each species does not exceed the total number of fish

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recorded.

Box D First Boat Group Member Interviewed? - This item must be coded "8" if the interviewed angler did not fish on a boat or it must be coded either "1" or "2" if he/she fished on a boat. If the number entered for Item 35 is "2", then make sure a Type 6 record has been filled out and the interview number entered in the last position of the Type 6 record matches the interview number of the first member of the boat fishing group who was interviewed.

**9.3.1.2 Economic Intercept Survey Field Editing**

The following item-by-item instructions apply to the intercept flex questions for the 1999 Southeast, the Pacific 2000, the 2000 conjoint survey, and basic valuation data collection efforts in non-expenditure or non-conjoint survey years. Survey instruments can be found on the web site at [http://www.st.nmfs.gov/st1/econ/rec\\_econ.html](http://www.st.nmfs.gov/st1/econ/rec_econ.html). Some change in data items should be expected from year-to-year.

Expenditure Intercept Questions:

Item 11 Multi Day Trip? - This is coded as "1" for yes or "2" for no. One-day fishing trips involving departure of a party/charter or private/rental boat from port on the night prior to fishing should not be considered an "overnight stay away from home" unless angler is spending additional nights away from home. If a multi-day trip, skip to Item 16.

Item 12 Number of Anglers? - Actual response coded. If "1" then go to Item 14.

Item 13 Number Anglers Paying? - Actual response coded. Must be less than or equal to answer to Item 12.

Item 14a-e Trip Expenses? - Record actual amounts given to nearest dollar. If Number of Anglers=1 or Number Anglers Paying=1, then ask "Now I'd like to ask you about the amount of money being spent for this entire trip away from home, not just the time spent fishing, in each of the following categories:" If more than one angler paying, ask "For each expenditure category that I mention, please estimate either your own personal expenses or the expenses for your entire group, whichever is easier for you to remember."

For each expenditure category, interviewer should fill in amount provided by respondent. All expenses should be reported to the nearest dollar. If Item 12 response=1 or Item 13 response=1, interviewer should record expenses in the "pers" column. If Item 13 response > 1, interviewer should record

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personal expenses in the “pers” column and group expenditures in the “group” column, whichever is appropriate. It is important that responses reflect expenses incurred during the entire time away from home, including meals eaten while traveling to and from the fishing site. Boat fuel should be pro-rated to reflect actual amount consumed (rather than bought) during the trip away from home. Item 14b pertains only to items (e.g., fishing gear) that were rented specifically for the trip. More general questions regarding maintenance and repair of the angler’s own boat and equipment will be asked in the telephone follow-up. Similarly, Item 14d pertains only to fees specific to the trip. Moorage fees that are paid on a seasonal rather than per-trip basis will be covered in the telephone follow-up. Items 14a-14e should be asked of all respondents.

	Pers	Group
14a. Food, drink and refreshments?	\$ _____	\$ _____
14b. Rental of boat, fishing or camping equipment?	\$ _____	\$ _____
14c. <u>Public</u> transportation, including airplane, train, bus and car rental?	\$ _____	\$ _____
14d. Parking, access and boat launching fees?	\$ _____	\$ _____
14e. Bait and ice?	\$ _____	\$ _____
Item 14f is asked only if intercept mode is private/rental boat:		
14f. Boat fuel?	\$ _____	\$ _____
Item 14g is asked only if intercept mode is party/charter boat:		
14g. Passenger fees, tips, filleting/smoking/canning?	\$ _____	\$ _____
Item 14h is asked only if respondent unable to itemize:		
14h. Total	\$ _____	\$ _____

If county of intercept=county of residence, skip to Item 16.

If county of intercept is not equal to the ne county of residence but county of intercept and county of residence are in the same state, ask Item 15a and Item 15b but not Item 15c.

If county of intercept and county of residence are in different states, ask Item 15a, Item 15b and Item 15c.

Item 15a % of expenses in intercept county? - enter percentage. Response must be  $\geq 0$  and  $\leq 100$ . Asked only if positive expenditures reported in Item 14. Skip to Item 16 if no positive expenditures reported or if Item 15a response is 100%.

Item 15b % of expenses outside intercept county but within state of intercept? - enter percentage. Response must be  $\geq 0$  and  $\leq 100$ . If (Item 15a response + Item 15b response = 100) or (Item 15b response eq 998 or 999), skip to Item 16.



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Item 15c % of expenses outside state of intercept? - enter percentage. Response must be  $\geq 0$  and  $\leq 100$ . Will equal  $100 - \text{Item15a} - \text{Item15b}$ .

\*Item 16 Participation in Followup - This item is coded "1" for yes and "2" for no. Enter the name, address, and a phone number where the respondent can be reached.

Conjoint Intercept Questions:

\*Item 11 Multi or Single Day Trip - This is coded as "1" for yes or "2" for no. If 1 is coded, the interviewer skips to item 13.

Item 12 Trip Primarily for Fishing - This is coded as "1" for yes or "2" for no.

Item 13 Years Spent Saltwater Recreational Fishing - This is coded in whole years. Minimum value is "0" if angler responds "Less than a year."

Item 14 Boat ownership - This item is coded "1" for yes and "2" for no.

\*Item 15 Off Work Without Pay - If the angler is fishing on his/her own time, i.e. after work, weekend, paid vacation, this item is coded no. This is coded "1" for yes and "2" for no. If the answer is 'no', 'don't know' or 'refused', the interviewer skips to item 18, and items 16 and 17 are coded as "98".

\*Item 16 Number of hours typically worked per week - This item is coded to the nearest whole hour. The minimum response is "1"; the maximum response is "90."

\*Item 17 Personal income - This item is coded from "1" to "10".

\*Item 18 Participation in Followup - This item is coded "1" for yes and "2" for no. Enter the name, address, and a phone number where the respondent can be reached.

Valuation Intercept Questions<sup>1</sup>:

\*Item 11 Boat Ownership -- This item is coded "1" for yes and "2" for no.

\*Item 12 Off Work Without Pay - If the angler is fishing on his/her own time, i.e. after work, weekend, paid vacation, this item is coded no. This is coded "1" for yes and "2" for no. If the answer is 'no', 'don't know' or 'refused', items 13 and 14 are coded "998".

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- \*Item 13     Number of hours typically worked per week – This item is coded to the nearest whole hour. The minimum response is “1”; the maximum response is “90.”
- \*Item 14     Personal income – This item is coded from “1” to “10”.

<sup>1</sup>In addition to these four questions, NMFS reserves the right to add additional questions up to the flexible question limit of 12 questions, depending on topical management or research needs.

**9.3.2 Economic Telephone Follow-Up Data Editing**

Data editing requirements are similar to the basic types and methods of editing described for the MRFSS Intercept Survey. As specified, every data element must be checked for data entry errors, reasonableness in falling within an acceptable range, and logic in relation to other data elements. An example of the most recent expenditure telephone follow-up survey can be found at: [http://www.st.nmfs.gov/st1/econ/rec\\_econ.html](http://www.st.nmfs.gov/st1/econ/rec_econ.html) under ‘Expenditure surveys’, Pacific 2000 Survey Metadata.

Once final survey questions have been established for each new application of the expenditure survey, NMFS will provide the contractor with appropriate data ranges for each variable, and will assist with development of logic checks and skip patterns.

**9.4 Data Delivery**

Intercept interview and economic survey data bases shall be maintained on magnetic media. These data shall be delivered to NMFS through computer networks or on magnetic tape or diskette following the delivery schedule in Section F. All magnetic files will be SAS datasets in transport (.xpt) format. All magnetic computer files shall be fully documented in the wave reports when changes are made. The final annual reports will contain all versions of the documentation.

Edited Type 5 Records (Economic Intercept Interview data) for each wave must be delivered with the associated intercept data. Edited Type 7 Records (Follow-Up Telephone Interview data) for each wave will be delivered one month later than the corresponding routine intercept and intercept survey data.

Documentation shall include, but not necessarily be limited to the following:

- Characteristics of the files (e.g., description of file content including project name, year and wave of data; record formatting characteristics, including variable name and description, length and alpha-numeric designation; number of records in each file;

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- A description of file content including the project name; year and wave of data; date generated; person to be contacted; and other pertinent descriptive information; and
- Logs of edits/changes to the data bases.

Intercept data to be provided include, but are not necessarily limited to the following:

- Site registers: 1 magnetic copy. Site information shall be provide in a format specified by NMFS;
- CHBTS: 1 magnetic copy of the updated directory for each wave.;
- Intercept data, including economic survey data when those surveys are in effect, shall be provided to NMFS in a magnetic file after all data have been thoroughly edited and cleaned as prescribed below. Magnetic files of interview records contain fish species, numbers, weights, and lengths (fish dumps) in a format prescribed by NMFS (Appendix K);
- Magnetic file(s) containing the ASF data, including but not limited to: interviewer code; disposition of the assignment (completed, alternate site, canceled) and reason for using alternate site; fishing mode, and whether a head boat was ridden; total on-site and editing hours; mileage to the site; tallies of intercept samples completed by fishing mode (status 1 and 2), eligible anglers at each interview site who were not interviewed by category (initial refusal, language barrier, refused key item), ineligible people intercepted by screening category, and people missed during conduct of another interview;
- Magnetic file(s) containing the assignment completion data, including the outcome for all fixed, flexible and reserve assignment drawn for a wave, and
- Magnetic file(s) containing all pre-validation results by state, site, date and vessel.

## **10.0 Survey Reporting Requirements**

For the Intercept, economic surveys, and CHBTS directory updates, the Contractor shall prepare and submit wave and annual reports of survey activities and results. These reports are to be provided to NMFS on a bimonthly and annual basis as required in Section F. Timely submission of these performance data is necessary to maintain data collection quality through identification of problem areas and adjustment of procedures as necessary.

Any world-wide web applications developed under this contract will also be delivered to the government at the end of the final contract period. This includes electronic source code for web pages as well as any data base programming that provides data over the web. These deliverables will be due at the same time that the annual report for the final option year of the contract is due.

## **10.1 Supporting Data Collection and Processing Documents**

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The following are required to be delivered to the NMFS as indicated in order to facilitate communication and documentation of survey and data quality control progress.

1. Weekly tallies of quota monitoring, including minimum data per assignment,
2. Monthly fishdumps,
3. Monthly spreadsheets describing resolution of any questions or comments made by the NMFS to fishdump records,
4. For each wave, annotated output from Intcheck programs that were run on wave data (programs provided by the NMFS). The output should address all 'checks' and 'errors' indicated in the data bases.

### **10.2. Wave Reports**

One report is required for each wave that summarizes interviewing results and key data for the Intercept survey, Economic Surveys, any other flexible questions, and CHBTS updates. Three bound (or notebook) hard copies of each wave report are required. In addition to the hard copies, an electronic file(s) of the wave reports will also be delivered to NMFS on magnetic media.

#### **10.2.1 Intercept Wave Report Data**

The intercept wave report tables shall include, but not necessarily be limited to the following:

Text containing:

- Management activities,
- results of supervisory field visits;
- State sub-contracting activity
- If needed, recommendations and proposals for change based on intercept survey results, including plans to increase sampling efficiency, minimize variance, enhance participation and cooperation of respondents and/or coastal states, or increase the visibility and usefulness of the MRFSS to the public.

Tables containing:

1. Total allocated interviews, obtained interviews and interview shortfalls sorted by state, fishing mode, and weekend/weekday stratum.
2. Interviews allocated by NMFS, additional interviews allocated by the state, interviews obtained, allocation shortfalls, and effort information (total hours and hours/interview to the nearest 100<sup>th</sup> of an hour).
3. A complete accounting of the outcome of all assignments drawn for each Subregion, State, and mode which shall include:
  1. total drawn assignments;
  2. assignments not issued due to unavailability of interviewers or held in

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- reserve;
3. total issued and completed assignments; and
4. numbers of issued assignments not completed by reason (interviewer quit, quota met/assignment canceled, interviewer - personal reasons, weather, other, and unknown).
4. A complete accounting of the outcome of all assignments completed for each Subregion, State, and mode which shall include: Completed assignments, assignments resulting in interviews, assignments resulting in target mode interviews at any site and at the assigned site, interviews obtained, and interviews obtained in the target mode at any site and at the assigned site.
5. A complete accounting of completed assignments and visits to alternate sites, with the reason for visiting an alternate site (no activity due to weather, no activity due to other reason, less than eight anglers in target mode, less than eight anglers who are eligible, no anglers remain, made quota, tournament weigh station, couldn't find site, encountered another MRFSS interviewer (with original assignment), encountered another survey interviewer, asked to leave/hostile site, or other);
6. A complete accounting of the number of interviews attempted for each Subregion, State, and mode which shall include: Interviews not completed by reason (initial refusal, language barrier, key item refusal); ineligible anglers encountered in the target mode by category (not completed trip, not U.S. fishing, not recreational, not saltwater, not fin-fishing, not five years of age; and the estimated number of eligible anglers missed in the target mode.
7. Numbers and percents of interviews conducted by state, mode and county compared with percent pressure by county from drawn assignments, and from the MSR (see the GSMFC wave report Table 7).
8. Interviews obtained by interviewer ID sorted by subregion, state and collapsed mode.
9. Distribution of completed interviews by time of day sorted by subregion, state and collapsed mode (shown in tabular and figure format).
10. Interviews completed by area of fishing sorted by subregion, state and collapsed mode.
11. Mean hours and mean days fished (past 2 months and past 12 months) sorted by subregion, state and collapsed mode.
12. Interviews by location of residence (in-state coastal, in-state non-coastal, out-of-state) sorted by subregion, state and collapsed mode.
13. Results of telephone validation interviews sorted by subregion and state. The tables in the current contractor's wave reports indicates the number of respondents who have a home phone. This table is intended to show the number and percent of respondents who agree to a validation interview and provided phone numbers, and the summarized outcome of validation results (numbers and percents of interviewers - courteous vs non-courteous, used or didn't use scales/measuring boards, asked to see fish, asked to weigh fish, asked to measure fish, reasons for not asking to see, weigh and measure fish) For example tables, see the wave

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- report Tables 17-27.
0. Species reported by subregion and state, with numbers of records with each species by catch type (A, B1 and B2), total number of fish counted by catch type (A, B1 and B2), numbers of fish weighed and measured, average weight, and minimum and maximum lengths measured, sorted by total numbers of fish counted.
  1. Species reported by subregion with numbers of records with each species by catch type (A, B1 and B2), total number of fish counted by catch type (A, B1 and B2), numbers of fish weighed and measured, average weight, and minimum and maximum lengths measured, sorted by total numbers of fish counted.
  2. Species reported by subregion and state with numbers of records with each species by catch type (A, B1 and B2), the total number of fish counted by catch type (A, B1 and B2), numbers of fish weighed and measured, average weight, and minimum and maximum lengths measured, sorted by common name of fish.
  3. Species reported by subregion with numbers of records with each species by catch type (A, B1 and B2), the total number of fish counted by catch type (A, B1 and B2), numbers of fish weighed and measured, average weight, and minimum and maximum lengths measured, sorted by common name of fish.

Examples of the current tables in the wave report for the intercept survey are included on the web site at [http://www.st.nmfs.gov/st1/procurement/mfss\\_survey.html](http://www.st.nmfs.gov/st1/procurement/mfss_survey.html) with user id = demo and password = ur2sea. For the Intercept survey, the wave reports shall include, but not necessarily be limited to, the following:

**10.2.2 Economic Survey Intercept Interview Wave Report Tables**

The wave reports for the Economic Survey Intercept Interviews should provide tables reporting the following survey results by subregion, state and wave:

1. Attempted number of interviews,
2. Numbers of initial and mid-interview refusals,
3. Number of interviews terminated due to angler < 16,
4. Percent of don't know responses for each key question,
5. Percent of refused responses for each key question,
6. Number of completed interviews (with responses to all questions),
7. Number of acceptable incomplete interviews (but with all key questions answered), and
8. Number of unacceptable incomplete interviews (with one or more key questions unanswered).

**10.2.3 Economic Telephone Follow-Up Interviews Wave Report Tables**

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The wave report tables for the Economic Follow-Up Telephone Interviews should provide tables reporting the following survey results by subregion, state and wave:

1. Attempted number of interviews,
2. Number of contacts made,
3. Numbers of unsuccessful contact attempts by reason for non-contact,
4. Numbers of initial and mid-interview refusals,
5. Percent of don't know responses to key questions,
6. Percent of refused responses to key questions,
7. Number of completed interviews (with responses to all questions),
8. Number of acceptable incomplete interviews (but with all key questions answered), and
9. Number of unacceptable incomplete interviews (with one or more key questions unanswered).

**10.2.4 CHBTS Directory Update Wave Report Tables**

The wave report tables for the CHBTS updates should provide tables reporting the following survey results by subregion, state (and state-region, if any) and wave:

1. Number of vessels in Directory
2. Number of Uncooperative vessels in Directory
3. Number of vessels in the Sample Frame (=Good List)
4. Number of vessels on the Bad List
5. Number of vessels on the SERHS in the Directory
6. Number of Inactive vessels in the Directory
7. Number of Ineligible vessels in the Directory, or in a separate data file
8. A Tally of the number of vessels in the Bad List by Flag that placed them on the Bad List (e.g. number of vessels flagged for missing Rep Phone No.)

The above lists should be reported as absolute numbers and percentages of total number of vessels on each state, wave Directory. Examples can be found in Table 29 of the wave reports at [http://www.st.nmfs.gov/st1/procurement/mrfss\\_survey.html](http://www.st.nmfs.gov/st1/procurement/mrfss_survey.html).

**10.2.5 CHBTS Pre-Validation Wave Report Tables**

The wave report tables for the CHBTS pre-validation visits should provide tables reporting the following survey results by subregion, state and wave:

1. A complete accounting of the number and percent of vessels scheduled to be sampled in the CHBTS that are validated and not validated, by sub-region, state and sampling week,
2. The average number of pre-validation visits per vessel by state and sampling week.
3. The distribution of pre-validation visits by time of day and state.

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Examples can be found in the last pages of the wave reports at [http://www.st.nmfs.gov/st1/procurement/mrfss\\_survey.html](http://www.st.nmfs.gov/st1/procurement/mrfss_survey.html).

### **10.3 Annual Report and Other Deliverables**

An annual report is required for each year of the contract that provides an overview of the data collection procedures and results for the Intercept, Economic Surveys, and any flexible questions. Two bound (or notebook) hard copies are required. In addition to the hard copies, an electronic file(s) of the annual report will also be delivered to NMFS on magnetic media. The annual reports shall include but not be limited to the following:

1. Yearly summary of the tables provided in the wave reports,
2. Description of data collection procedures and results, including description of any changes throughout the sampling year,
3. Description of the coding and editing procedures,
4. Description of other quality control measures and procedures, including but not limited to the date and score of each QC visit for each interviewer number; fish test score results for each interviewer number; regional wave meeting agendas and attendance lists;

Other required deliverables:

1. Electronic working copies of all data editing and quality control programs, and sample draw programs,
2. Hard copies and electronic files of all manuals, forms, and training presentations used in each year of the survey, including all revisions documented with the date(s) of use,
3. Any other specially-designed software developed for tracking of assignments, quota monitoring, etc; however, if widely available commercial software is used, only examples of that use would be required. For example, if resolution of possible errors is done on a commercial spreadsheet there is no need to provide those spreadsheets, only examples.

All deliverables are the property of the government and may be passed on to other contractors during future procurement actions.

### **10.4 Intercept Form Retention**

The Contractor shall maintain the set of original completed intercept forms, economic add-on forms, site description forms, and ASFs for each contract year. After completion of a sample year, the full set of completed intercept forms, economic add-on forms, site description forms, and ASFs shall be delivered to NMFS in Silver Spring, MD by March 31 of the subsequent year.



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Acronym	Name
ACCSP	Atlantic Coast Cooperative Statistics Program
ASCII	American Standard Code Information Interchange
ASF	Assignment Summary Form
ASMFC	Atlantic States Marine Fisheries Commission
CATI	Computer Assisted Telephone Interviewing
CB	Charter boat Mode
CHBTS	Charter and Head Boat Telephone Survey
EEZ	Exclusive Economic Zone
FIPS	Federal Information Processing Standards
F/ST1	Fisheries Statistics and Economics Division
GPS	Global Positioning Satellite
GSMFC	Gulf States Marine Fisheries Commission
HB	Head boat Mode
HDAR	Hawaii Division of Aquatic Resources
I/O	Input/Output
LPS	Large Pelagics Survey
MFCMA	Magnuson-Stevens Fishery Conservation and Management Act
MRFSS	Marine Recreational Fishery Statistics Survey
MSR	Master Site Register
NA	Not Applicable
NEPA	National Environmental Policy Act
NERCBL	Northeast (Maine-Virginia) Regional Charter Boat Logbook
NERO	NMFS Northeast Regional Office

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NHHLS	New Hampshire Head Boat Logbook Survey
NMFS	National Marine Fisheries Service
PC	Personal Computer
PR	Private/rental boat Mode
PSMFC	Pacific States Marine Fisheries Commission
RDD	Random Digit Dialing
RFA	Regulatory Flexibility Act
RRs	Regional Representatives
SAS	Statistical Programming Language Brand Name
SCCBLS	South Carolina Charter Boat Logbook Survey
SDF	Site Description Form
SERHS	Southeast Regional Head Boat Survey
SFA	Sustainable Fisheries Act
SH	Shore Mode
SWAS	Salt Water Angling Surveys
URL	Uniform Resource Locator
USVI	U.S. Virgin Islands