

This Review was conducted by the SEFSC. Questions were submitted by the Center and answered by personnel at the Beaufort Lab responsible for the program.

**Review of Headboat Survey
Questions & Answers
December 2004**

Given the value of the data to stock assessments, and because concerns are fairly numerous, we've been asked to conduct a full review of the Headboat Program. Guidance has been open-ended. No outcomes have been taken off the table in advance. We are to evaluate both the scientific and "business" aspects of the Program, and make recommendations at any level.

With that as background, this paper will step through a number of issues related to the Program, asking a large number of questions. We have tried to be 'overly thorough.' Many of the questions can probably be handled with a short answer in advance of our meeting, and that may be the end of discussion of that topic. Other questions will require some summarization of budget or "performance" data, or some basic analysis of the biological data. Still other questions are more open-ended, designed to stimulate discussion of possible alternatives. In any case, we've tried to include some information about the reason for the questions; and to spell out some of the assumptions we've made going in -- assumptions which may need correction. We have split the questions into a section dealing primarily with science or technical issues, and a section dealing primarily with business issues, although there is clearly plenty of overlap.

The headboat fishery appears to be a readily identifiable segment of the recreational fishery, and is responsible for high percentages of the recreational catch for some species. Membership in the headboat fleet seems to be known quite accurately, and the boats have been largely accessible to the Headboat Program. The Headboat Program has been used to produce landings, landings per unit effort, and effort estimates for the headboat fishery, and has also been a vehicle for collecting biological samples from the landed catch. These data items are clearly at the core of those needed for stock assessment. The potential may also be there to collect socio-economic data as well, although we are not aware of any socioeconomic projects linked to the Program.

In part because the data are so at the core of our assessment needs, there have been concerns expressed about the Headboat Program in several areas. Has the structure and funding been too ad hoc to be really effective?

Funding and number of permanent Federal positions have not been adequate for the past 32 years. There have been gaps in data when we weren't allowed to fill vacant port agent positions.

The survey is often cited as a near-census, but apparently that has never really been true. That is not necessarily a problem in itself, but it leads to concerns about statistical rigor in design and estimation, and the documentation of same. There have been questions about the difficult issue of directedness – have there been changes in efficiency toward some species due to changes in fleet strategy or practices over the years?

Most vessels that used electric reels in the 70's and early 80's (approximately 25% of the vessels located in NC and SC), have discontinued the practice of renting electric reels. Therefore, the vessels no longer target the Shelf edge fishes (tilefish, snowy grouper, yellowedge grouper, etc.). Gray triggerfish were often discarded during the same time period but have become a very desirable species and are now targeted, at times. Like all other fisheries, improvements in technology (GPS, color fish scopes, lighter boats, better fishing gear, etc.) have increased the efficiency of locating and catching fish, and may effect stock assessments more than directedness.

If so, are the data adequate to detect changes, and to make analytical adjustments to keep CPUE indexes proportional to stock size?

(See Attachment – Headboat_CPUE.doc)

There has also been concern expressed that coverage of the fleet has declined, and that the Program may not be aggressive enough in maintaining / restoring coverage.

Currently, the only gap is in Louisiana (should be filled by the date of the Review). Starting 1/1/05, we may lose the funding (GulfFIN) for 3 port agents.

An additional concern has been that the Program lacks any capability at present to estimate catch discarded at sea.

Columns for recording the number of discards were added to the trip report forms in January 2004. Headboat personnel may miss counting some of the more abundant, small species and angler interviews (MRFSS) may be inaccurate due to recall and species identification problems. Therefore, only observers may supply accurate discard data.

The Science Side

Data users:

The stock assessment connections seem obvious, but are there other 'customers' to the Program?

Yes, economists, social scientists, university researchers, conservation groups, etc. ". The Army Corp of Engineers cited headboat data in an impact assessment of the Florida Keys.

(Also, see page 15. (2) a. – 1.)

Are any non-stock assessment types in NMFS making use of your data (e.g habitat or ecosystem types)?

Yes, economists, and habitat/ecosystem biologists. Data requests have been made by Jon Hare while with NMFS and now NOS. He wanted estimates of catch per effort of grouper species for Onslow Bay and for the Gray's Reef area as an indicator of population abundance, in reference to larval and juvenile fish recruitment, and to lionfish abundance. Headboat data were used in the NOAA Technical Memorandum, *Site characterization for the Dry Tortugas Region: Fisheries and Essential Habitat*.

Are catch estimates forwarded to things like Fisheries of the US, or to the Center or to NMFS HQ for international reports?

Data have been supplied to NMFS HQ when requested. We had an agreement with MRFSS for the data to be included in their publication but they got several years behind in that publication. When they finally caught up, we got behind in our GOM estimates. We should pursue reestablishing that agreement. Data have been forwarded to SERO for purposes of Reports to Congress and work on Amendment 13A and 13B of the SAFMC's Snapper Grouper FMP. Since 1996, headboat landings and mean weight data from the annual "Trends Report" have been used in construction of other Amendments to the Snapper Grouper FMP. We provided data for the publication, *Our Living Oceans*.

Do any state people contact the Program for data, independent from the stock assessment process?

Yes, the data have been supplied to all southeastern state agencies and are used for a variety of reasons. SCDNR has requested specific landings by species and effort data from the Headboat Survey for data reports and publications.

Is any feedback provided directly to the industry, in the sense of summarized results, or otherwise?

For most years, we have supplied tables of catch and effort by area and, when requested, we supply estimates for individual vessel(s) to the owner of the vessel(s).

Do the Commissions use the data in any way?

Data have been supplied to the GSMFC.

Any users from the private sector? (e.g consulting firms for contracted projects, environmental groups wanting information, banks or loan programs wanting info on fleet viability, etc).

Data have been supplied to consulting firms, universities, and environmental groups. Headboat Survey data have been provided to the Environmental Defense and to the Monterey Bay Aquarium for "Seafood Watch" publication. Florida Coastal Management Program cites the Headboat Survey in a report, *Sustaining the Human Uses of the Coast: Catch per Angler Day on Headboats*. Faculty of Florida State University and Duke University used Headboat Survey data in a publication to *Science* entitled, *The impact of U.S. recreational fisheries on marine fish populations*. SCDNR used headboat data in a presentation to the AFS entitled, *The Coastal Economic Impact of Recreational Charter, Headboat, and Pier Anglers in South Carolina*.

Have there been any requests to the program for additional elements to be collected? (e.g socio-economic data).

A few times, people have requested data that we do not collect, but there never have been any formal requests for us to collect additional data.

Have any additions or adjustments been made to accommodate such requests, either temporary or continuing?

We have collected additional biological samples to accommodate special requests.

How about the biological sampling aspects? Do you support any requests from outside the Program itself to provide samples of any kind?

Special requests for biological samples have come from states (e.g., SCDNR, Florida Marine Research Institute) and universities (e.g., ECU, UNC-W, NCSU, College of Charleston, UF-Gainesville, Texas A&M University, etc). We have provided gonads for species such as gag and greater amberjack, tissues for genetics work from sea basses, white grunt, mutton snapper, red snapper, bluefin tuna, etc., and hard parts for aging.

The biological samples collected by the Headboat port agents have resulted in over 15 MS and PhD degrees directly tied to the Beaufort Laboratory, and numerous other graduated students in the Southeast and Mid-Atlantic regions. A total of 76 publications directly related to the Headboat Survey data, not including stock assessments, have been produced by staff of the Reef Fish Team (Beaufort). Of those publications, 52 of them were life history studies including reproductive biology, food habits, and age and growth studies. A table of the approximate number of biological samples is included. The numbers of samples should be viewed as minimums because the Headboat samplers often collect samples that do not make it into the Headboat bioprofile database, some data is inadvertently lost, and they sample charter boats and commercial vessels to help supplement studies that ask for the information. (See Attachments – Headboat bio_sample totals.xls and reef fish literature 11 22 04.doc)

Are your samplers ‘at capacity’ in their ability to handle requests for additional biological samples, or do you have some flexibility there?

We have some flexibility, but any time spent collecting samples from one species will affect the number of samples (length/weight and or biological) from other species. The port agents work 40 hours/week, so any time spent on any particular task will reduce the time spent on other tasks.

General documents:

We haven’t found many documents describing the Program or the data. (The document used at the red snapper SEDAR was a draft document from the mid-1980s.) Please send us copies of any general documents describing the Program, or any operations manuals for the field people, examples of what goes into their training, any documents showing how calculations are done – anything like that. Also, if you have a list of papers by others making use of your data, that would be useful. (With other programs, we’ve found it’s hard to stay current and complete on a list like that, but even incomplete lists have proved valuable for demonstrating the usefulness of the program.)

(See Attachments – reef fish literature 11 22 04.doc and MANUAL.doc)

Survey Design and Sample Selection:

How do you define a headboat for the purpose of your survey? Is the definition the same everywhere in the southeast? Has the definition remained the same over the duration of the program?

Our authorities to collect catch/effort data are in the Snapper Grouper FMP and Reef Fish FMP. Headboats in the Atlantic are defined as vessels that can carry seven or more passengers and fish primarily in the EEZ. Headboats in the Gulf are defined as vessels that can carry 15 or more passengers and fish primarily in the EEZ. The Coast Guard has more types of licenses available to for-hire vessels in the Gulf, so if we used seven or more, we would include a large number of

vessels that should not be in our survey. The original definition was 15 or more passengers and fish primarily for reef fish (there was no EEZ in 1972 when the Survey was designed). The main consideration is that all for-hire vessels are included in either the Headboat Survey or the MRFSS. We supply lists of vessels in our survey to MRFSS and they sample the rest.

Please provide a list (spreadsheet would be fine) of all boats in the headboat fleet at present, plus any descriptive data for each (ID number? Capacity? Port?). What other data exist on the boats themselves?

Three lists of headboats are attached. Also, we have lists of vessel owners that include addresses and telephone numbers. We have supplied these lists to others when requested. (see Attachments – 1986Vessel List.doc, 2003Vessel List.doc, 2004 Vessel List.doc)

How frequently have boats entered or left the fleet in recent years.

Annually, approximately 3% of the vessels either move into or out of the fishery.

Do any “nearly-headboats” exist (e.g., an inshore segment) that might drift in and out of the fleet (as you define it) on a temporary basis?

The vessels in southeast Florida often fish in state waters but are included in the Survey. We attempt to obtain trip reports for all trips but cannot enforce non-reporting of trips in state waters. These vessels have been in the Survey since 1978. A vessel is either included or not included in the Survey.

How do you learn about any boats entering or leaving the fishery?

Most headboats are large vessels that dock at very visible locations. Our port agents notify us of vessels that enter or leave the fishery.

How up to date is your list of boats in the fleet?

Our list of vessels is current (e.g., we don't add a vessel at the beginning of a specified time period, like the MRFSS does for sampling assignments).

Do any boats move from port to port during a year?

Rarely, but there are a few vessels from ports in the northeast that move into our Survey area for only part of the year. If a vessel did change port, that would not create any problems.

The supposed “census” nature of the survey has been a major concern outside the Program, particularly given a perception that coverage is declining, and the “census” nature may be lost. However, it would seem that the natural sampling unit in a statistical sense is a trip, and that trips have never actually been censused. Every boat may have been sampled at some time during a season (at least in the past), but in a statistical sense, boats seem to function more as “strata” than as the primary sampling unit. Is this an accurate picture – that what has actually been gathered is data from some trips on most boats?

That statement is correct. Our goal is to obtain a trip report from every vessel for every trip but that situation only occurs for a few of the approximately 160 vessels. Even very cooperative personnel will occasionally not complete or lose a trip report. We do attempt to get a count and, if possible, the number of anglers for the missing trip report. The calculations for computing missing data will be discussed in another section.

If so, how are decisions made to decide which trips to “intercept?” (It appears there might actually be several levels to the verb “intercept:” 1) count a trip; 2) collect catch data; 3) collect effort data about specific trips, 4) collect CPUE data, and 5) collect biological samples. It seems the types of intercepts may be partly independent of one another. Are these in fact separable actions?)

Usually all of the above duties are accomplished during an intercept. The port agent selects a vessel to collect biological data (lengths, weights, otoliths, etc.) and drives to that dock. Along the way, the port agent will observe the activity of other vessels, if passing other docks. At the selected vessel, the port agent counts the anglers as they debark, samples the landing, and then attempts to collect trip reports (each report contains effort, catch, and therefore CPUE for that trip). Trip reports are reviewed, by the port agent, for missing information and any fish recorded under “other species” which were not identified. At this time, the port agent may obtain data for missing trips (office records, radio logs, etc.) but occasionally special visits are necessary to obtain that information.

If the sampling is geared more toward boats than to trips as the sampling unit, how does that work? If you can’t cover all boats, how do you select which you will cover? (Cooperation expected? Balancing geographic coverage? Ease of reaching the boat?)

Port agents are instructed to sample each vessel in the area of coverage on an equal basis. During any slow seasons, the more active vessels will be sampled more frequently. Since the port agents collect the trip reports, regular visits to each vessel are necessary to obtain the reports.

How do you track a boat’s activity?

Port agents complete a “headboat activity report” for each vessel for each month. Information is gathered in a variety of ways: trip reports, angler counts at dockside, telephone calls, direct observations, talking to ticket agents and other vessel personnel, office records, radio logs, etc.

Do you have a customary set of geographic areas or strata that you use for selection, tracking, or summarizing information?

Yes, the coastline from Cape Hatteras, NC to Port Isabel, TX is divided into 21 geographic strata. All estimates are done using these strata, as well as time strata (see below).

How about time interval – do you select, track, or summarize activity on a monthly basis, or over some other interval?

From 1972 – 1995, we calculated estimates in “seasonal” time periods for areas where there was little or no activity in the winter. The seasons were January – May, June, July, August, and September – December. Estimates for areas with year-round vessel activity were calculated by month. Starting in 1996, we calculated all estimates by month.

What is the minimum time interval that makes sense?

Most stock assessments use annual estimates but monthly estimates are useful for combining with or comparing to other data collections (e.g., MRFSS).

Given how the data are used, it should be possible to report (as a spreadsheet or other computer file) the list of boats in the fleet each year; the number of trips taken by each boat (and whether a count or estimate); and the number of trips for which you obtained data (perhaps separate counts for catch, effort, CPUE, and biological samples). We presume individual boats could also be identified to a port, or at least a state or a region in the file as well. If you don't already have a file like this, please prepare one. It would go a long way toward converting the casual impressions people have been working with to something we can actually see.

(See Attachments – 1986 Vessel List.doc, 2003 Vessel List.doc, 2004 Vessel List.doc, and Trip_Vessel Count.xls)

Please demonstrate how you make routine estimates of catch, effort, and CPUE from the data. (We presume it would be simple sums for catch and effort, if data were available for every trip. However, we know you must deal with trips lacking data, and there are multiple options for CPUE statistics even with complete data.) Who is actually making these types of calculations? (** In this section, the term “catch records” will be used to mean “trip reports”. We used the term “catch records” for 25+ years and just recently changed the name of the forms to “trip reports”. Some of the acronyms use the term “catch record”.)

This is a complex procedure. First, reported effort is calculated from catch records. The term “reported” refers to data actually provided by the vessel personnel in the form of catch records. Data on effort are provided as number of anglers on a given trip. Numbers of anglers are standardized, depending on the type of trip (length in hours), by converting number of anglers to “angler days” (e.g., 40 anglers on a half-day trip would yield $40 * 0.5 = 20$ angler days). Angler days are summed by month for individual vessels. Port agents enter the reported anglers from catch records on an internal worksheet called a headboat activity report (HAR). The reported anglers are converted to angler days and totaled. The monthly total of angler days is referred to as catch record angler days (CRADs). We then take every piece of information recorded on the HAR for that vessel for that month and use them to calculate estimated angler days, or EADs. This is the adjustment for non-reporting. This expansion to arrive at estimated angler days is often complex and usually labor intensive. If there is complete reporting by vessel personnel, i.e., a catch record submitted for every trip made, then $CRAD = EAD$ and the process is simple. More often that not, however, there are varying degrees of incompleteness of reporting. The usual estimation procedure involves using sampler observations of activity and developing an adjustment ratio to expand the reported observations. Here is a simple example of this procedure:

A headboat activity report is submitted with angler numbers from 10 catch records. Additionally the sampler has made 5 personal observations throughout the month. There was one observation of a trip made, and 4 observations of no trip made. A ratio would be developed as follows:

$(1 \text{ trip observed} / 5 \text{ total observations}) * 15 \text{ blanks} = 3 \text{ extra estimated trips}$. Thus total effort is estimated as 10 trips (CRs) + 1 trip (observation) + 3 trips (extra estimated) = 14 total.

The 15 blanks refer to days with no information, and is calculated by subtracting the days with information (10 CRs + 5 total observations) from the total days in the month (30).

This is a very time-intensive procedure, as these calculations must be made for each vessel for all 12 months of the year. It should be noted that the accuracy of the estimate of total effort goes up with increasing numbers of personal observations. The following will demonstrate this statement, using the previous example:

The HAR is submitted with information from the same 10 catch records. This time, however, there are 8 total observations, 6 of which are for trips made. This yields the estimation ratio:

$(6 \text{ trips observed} / 8 \text{ total observations}) * 12 \text{ blanks} = 9 \text{ extra trips}$. Thus total effort is now estimated at 10 trips (CRs) + 9 trips (estimated extra) + 6 (observed) = 25 total trips.

Once the estimated effort, in the form of number of trips, have been calculated, then total estimated angler days are calculated. This is usually done simply by summing up the reported angler days and adding any estimated angler days for individual unreported trips, usually calculated from average angler days per trip for that given month. If port agent observations include counts of anglers coming off a boat, these are used as well. Once estimated angler days are calculated, we now have what we need to correct the catch for non-reporting. The total catches are estimated by multiplying the reported catch data (from catch records) by a “K-factor”, correction factor. The K-factor is simply EAD/CRAD. In other words, if angler days from catch records sum to 500, and after factoring in all information from the HARs and adjusting effort for non-reporting, the EAD=750, then the correction, or K-factor, is 1.5 (750/500). This number is then applied to the reported catch to arrive at the estimated catch (e.g., 1000 vermilion snapper reported from catch records for a given month would translate into a total estimated catch of 1500).

Biological sampling does seem to be partly separable from the catch and effort collection functions. We gather that biological sampling has always covered a much smaller fraction of the trips than the catch and effort data collection. How do you determine which trips to intercept for biological samples?

As stated earlier, port agents attempt to intercept each vessel equally. However, in slow seasons, only the most active vessels will operate, or will operate more frequently. Therefore, samples are collected more frequently from the most active vessels.

Has this been the same over the history of the Program?

Yes

Do you go to specific docks on a fairly regular schedule?

Yes, although the sampling unit is vessel trip. At some docks there are several vessels. Sometimes the port agent can sample more than one vessel at those docks but at other times, the vessels return too close together to obtain samples from more than one vessel.

How do you rotate among docks or boats over time?

Explained in a previous section.

Do boats give you any heads-up on when they'll be available?

Sometimes the port agent decides where to sample and contacts the owner, ticket agent, etc. to determine if that particular vessel is fishing. If the vessel is at port, the port agent will contact

other vessel personnel until a selection is made for that day. When contacting vessel personnel, the port agent may be told the date of the next scheduled trip.

Given that a trip has been intercepted, how do you choose which fish to sample? (It might be different for size, hard parts for aging, and for other tissue samples).

Our main goal in dockside sampling is to obtain a representative sample for length and weight by species. The lengths are used in length frequency graphs and the weights are used to calculate mean weights to estimate total landings in weight. Some vessel captains will announce the presence of our port agents to the anglers and ask that they come to the sampling station. Even if the captain announces our sampling activity, the time that anglers remain near the vessel with their catch is short, so the port agent attempts to select several anglers and then begins taking measurements. Our list of species has about 350 entries therefore, the port agents look for anglers, as they debark or handed their fish from the mate, that have some of the more uncommon species. We know from experience that we will obtain a sufficient number of common species for length and weight measurements by selecting anglers with uncommon species.

Annually, port agents are supplied a list of priority species for collecting hard parts. At this point, the list is only of the desired species, not specific lengths. If a fish cleaning station is located on the dock, many samples of otoliths, spines, etc. are obtained from fish carcasses. Since the fish carcasses could have been sampled for length and weight already, lengths of fish with no weight are excluded from length frequency plots. In some cases, hard parts from only certain lengths are requested by a researcher (e.g., very small or very large fish). The agent is instructed to collect those hard parts from the fish within a selected angler's catch. If any fish is selected because of size, the port agents are instructed not to obtain weights so those fish are not in length frequency plots or mean weight calculations.

The details of age sample selection is a very important issue. Sampling can be designed either to get an actual age frequency sample, or to get samples of age in specific length intervals to develop age/length keys. Without a sample by sample record of what kind of sampling was used, it can be impossible to tell from the data alone which time of sampling has been done. Unfortunately, presuming one type of sampling was used when in fact the other type was can lead to very serious errors. What type of age sampling are you using?

Most of our sampling of age structures is opportunistic. The port agents attempt to collect a few hard parts from priority species during the sampling of each trip. Collecting hard parts for specific length intervals is discussed above. One year, we did sample red snapper in the Gulf of Mexico to develop an actual age frequency.

Does it vary by species, or geography, or with time?

Only the samples of red snapper otoliths varied by both geography and time period.

Do you have data elements on your sheets to record what type of sampling was used for each sampling event?

No, since the red snapper sampling in one year was the only deviation from our normal sampling methodology.

Operations:

We based the questions in this section on our assumption that the Headboat Program is best described as a port agent system. We gather that port agents (or is it staff in Beaufort?) contact each vessel and arrange a contract with a crew member to record catch and effort data, and that the port agents themselves visit each vessel periodically to collect the recorded data and to take biological samples. Is this correct? (There was some ambiguity in SEDAR7-DW-19 about “sampling,” which sometimes appeared to refer to collecting catch and effort data, and sometimes referred to the biological sampling.)

Your overall description is correct. However, the port agent does not “arrange a contract with a crew member to record catch and effort data”. As stated earlier, the owners of selected headboats are required by law to submit trip reports from trips in the EEZ. Usually the owner assigns the job of completing the trip reports to the captain or mate.

From 1972 to 1988, we did pay for the trip reports submitted by crewmembers on Atlantic vessels. There were no contracts. We just paid whoever’s signature was at the bottom of the report. The port agents were responsible for obtaining mailing addresses of anyone who completed the trip reports. We have never paid for trip reports from vessels in the Gulf of Mexico.

Please summarize the data items collected by the Program. (Examples of data sheets in current use might be appropriate). Are any of the specific items causing problems in the field? (e.g., just plain hard to get, industry resistance, intent often misunderstood, item doesn’t quite ‘fit,’ etc.).

Some owners dislike giving the number of anglers per trip. We explain that we want number of anglers and not the number of paying passengers, therefore the information cannot be used by the IRS. (See Attachments – HB Trip Report – NC-NE FL.wpd, HB Trip Report – Texas.wpd, and Bioprofile Format.doc)

What is the nature of data collection at a site? For catch and effort, do the agents simply pick up NMFS-designed data sheets?

For trip reports, the port agents distribute blank forms, clipboards, and laminated maps; and collect completed reports.

Do they examine and/or copy logbooks?

They look at the reports for missing data (especially critical fields: date, trip type, number of anglers, etc.), unusual entries, and invalid species written under “other fish”.

Do they “interview” either the crew or the participants?

They do not “interview” either but may have discussions.

Do they ask or answer questions about species identification?

Yes, they do both. A new port agent may even ask a crewmember about a fish name. The crews are very curious and frequently save unknown fish for identification by our port agents.

Are there set procedures for asking about activity since the last visit (i.e. tracking activity for which written records might not be available for any reason?)

The port agents are instructed to attempt to account for every day if possible. Discussions with ticket agents can often provide the number of days fished since the last time the port agent sampled the catch of that vessel.

How do you handle the thorny problem of establishing locations or areas fished?

We request a fishing location that is a 10 by 10 mile square.

Does sharing this information with you ever give the boat operators heartburn, or is that not a contentious issue for this fishery?

Some do not like giving the locations, but a bigger problem in the past seemed to be the difficulty of converting loran C to latitude and longitude.

Please walk us through the nature of biological sampling on a typical visit. Who do the fish belong to?

The fish belong to the angler that has the fish in their possession.

If to the individual fishermen, how does the agent choose among individuals to get samples, and how does the agent approach the individuals to gain access?

The port agent engages the anglers in a random manner as they collect their catch from the mate or wait in line at the cleaning station. The port agent does look for catches with a variety of species, by doing this the less common species will have a chance to be sampled while in turn including the more common ones. When approaching anglers the port agent is courteous, identifies himself/herself, the agency represented, and that this is a survey being conducted to gather important information on various species.

Does the agent have a list of species and samples to take?

The port agents are instructed to obtain length and weigh measurements from all species. As mentioned earlier, they do have a list of priority species for collecting otoliths, spines, etc.

Are there set procedures the sampler uses for selecting which fish to take?

Once anglers are selected, the port agents obtain length and weight measurements from all that angler's fish. For common species, they may discontinue collecting length and weight measurements for a species after collecting 15. They may discontinue sampling a species only between anglers, not within the catch of an angler.

Do the owners of the fish sometimes add constraints?

This hasn't been our experience. We have positive responses, in most cases, with the exception of anglers that have a long drive and in a hurry, or they are passengers that must get to their ride, etc.

Things like asking you not to cut otoliths from larger fish, or conversely, asking you to age their larger fish selectively out of curiosity, seem like issues that might arise – how to you deal with those issues?

Most anglers are not familiar with otoliths and do not suggest what size or species to sample. In most cases, they are willing participants who are curious and interested in the process. The port

agents will weigh a fish for an angler but that fish is not included in the sample unless the angler was already selected.

Do you have set procedures (i.e. instructions to the agents) for dealing with matters that arise like that?

It is the sampler's responsibility to explain that they must keep the sampling random and unbiased. This explanation is usually sufficient.

How do you work in any requests you have for additional sampling?

The first priority would be Headboat Survey objectives, but usually all other requests are addressed accordingly.

Do you ever buy fish for sampling purposes?

This is usually not the case for the Headboat Survey but we have purchased fish for photographs, special collections, identification, another project, etc.

Say that a typical visit has just been completed, and the agent has picked up or recorded catch and effort information for that trip (or maybe from several trips), and has collected a set of length measurements and biological samples from the trip just visited. (We are presuming that most data are now in written form, although length data might be entered directly if boards are used.) What happens next? Are sheets sent to Beaufort for entry, or does the agent do the computer entry, or has the contracted crewman provided data in computerized form? How are data transmitted to Beaufort, and how often? Once data are entered, are they run through a computer program that performs 'validity checks,' flagging suspicious results for further review? If suspicious items are found, how are they resolved? (Decision in Beaufort? Back to agent for decision? Leave a flag in computer file suggesting against use? Add a comment to computer file? Remove data from computer file? Might be different for different situations). How soon after collection would such an examination take place? How soon might a data set be released as "ready?"

Biological - When port agent has completed a sampling visit and recorded the information in the fish measuring board, the agent returns home or office, and downloads the sample from the board to a computer. Then the agent edits the sample, making sure it contains all the necessary information, such as collection number, species codes, vessel number, and area. At the end of the week, all the samples are sent to Beaufort via email. Once the data are received at the Lab, it is transferred to an FMB program, where it is checked and edited. If there is a question about a species code or a length or a weight, the agent is contacted immediately about the suspect data. The data are processed weekly. After approximately 4,000 samples are processed into the FMB program, the data are transferred to a BP file where the samples are checked and edited again. At the end of the year, these data are used to calculate mean weights for the estimates of landings. The headboat data are stored in dBase files. All years and regions are readily accessible in a connected set of files.

Trip Reports – Port agents collect trip reports from each vessel on a weekly or biweekly basis, usually during the dockside sampling of that vessel's catch. Port agents process trip reports individually. This includes looking over each report to ascertain that species recording is accurate (i.e., that there is no misreporting due to common name confusion), that the data entries

are legible so that key-entry contractors can enter the data efficiently, and that the relevant trip information at the top of each sheet is coded in the proper coding boxes. After this is done, the port agents transcribe information about effort onto that vessel's HAR for that month. Trip reports are then stored until enough are accumulated to mail them to Beaufort. Upon arrival at the laboratory, the records are sorted by vessel and date, highlighted for clarity of key-entry, and stored in labeled folders. When a large amount have accumulated, the trip reports are stamped with a collection number (unique identifier) using a numbering machine, and mailed or hand delivered to key-entry contractors in Raleigh NC. Upon return of the key-entry job by the contractors, the new data are merged into the database (dBase) and edit programs are run to find and fix errors. Once the new data are deemed error-free, the paper trip reports are filed into individual vessel folders and stored. Any trip report found that lacks pertinent information (e.g. angler numbers) is sent back to the port agent in an attempt to obtain the information. If angler numbers cannot be obtained, the trip report is not used for catch data, but is recorded on the HAR as an observation of a trip made, with no information about angler numbers. Batches of trip reports are usually sent for key-entry about 4 times a year. Once all the errors are found and fixed for a batch of data, the dBase file is copied into an ASCII file for various users.

What is the mode of storage for the Headboat database? (e.g. Oracle, spreadsheets, SAS, flat asci files?)

The data are stored in dBase files and can easily be converted to ASCII.

Are all years and regions accessible in one file or a connected set of files, or do you have to pull data from disconnected sources (i.e. a lot of human intervention) to respond to requests covering more than a localized area or a single year?

The data are stored annually although we do have files containing groups of years. Most requests are for either biological data, or estimates of landings and fishing effort.

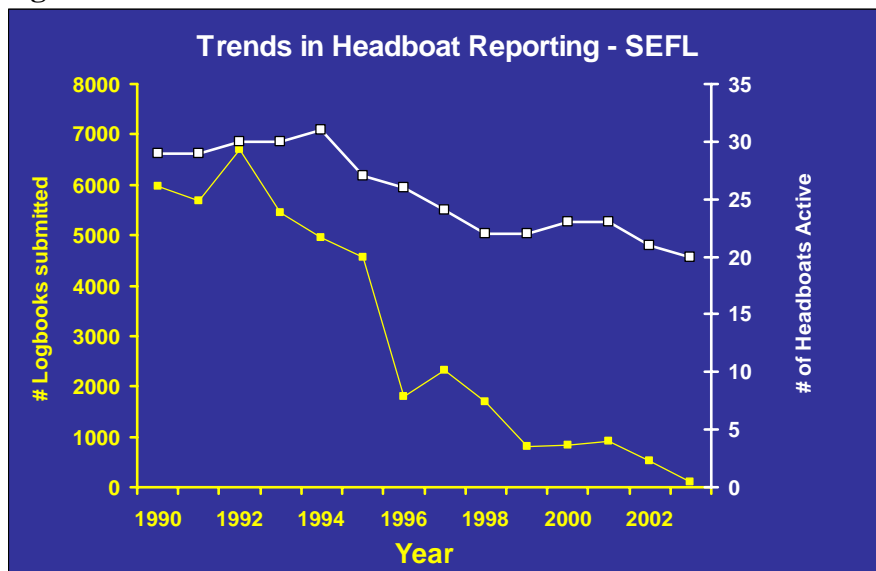
How do you track or estimate trips that may have been missed for any reason? Are there computerized checks for gaps in trip dates that might lead someone to contact a vessel for more info? How do you deal with vessels that refuse to participate, or that might be avoiding contact? Are there regulations requiring participation under any of the FMPs? If so, are you getting satisfactory attention from NMFS enforcement?

Do you have set procedures for trying to reestablish contact with wayward vessels (or establish contact the first time for new vessels or new owners)? Is there currently a backlog of fleet members in need of contact? Do you document refusals to work with you (and why), and if so, can you produce a history that could be useful in explaining any deterioration of coverage?

We described in detail above how we estimate total fishing effort. Currently, there is no procedure in place to check for gaps in trips using a computerized procedure. We rely heavily on individual port agents, to keep us up to date on vessel activity and to explain gaps in the data. Currently, there are some vessels that refuse to submit trip reports for some or all of their trips. Reporting has continued to deteriorate over the last several years in the southeast Florida region. These boats are required to submit trip reports for every trip that they run in federal waters (outside of 3 miles in this region). Many are now saying they do not fish in federal waters and thus do not have to comply. The number of NMFS enforcement agents is small and the NOAA General Counsel does not consider non-reporting as a priority issue. Our only "set procedures" to "re-establish contact with wayward vessels" are for the port agents to keep trying to get

someone else on the boat to do trip reports. However, when the captain or owner (often one in the same) says no to submitting reports, there are no submissions. Currently, no vessels forbid us from sampling catches. Non-compliance with reporting requirements is epidemic in southeast Florida, as seen in Fig. 1, showing catch record submission for 2003 totaling only 377 records for 20 vessels.

Figure 1.



White Line = Number of Vessels

Yellow Line = Number of Trip Reports (logbooks in graph)

(Also See Attachment – crgraph2.xls)

Communication of results

This section actually covers two areas – 1) transmitting data files and documentation to analysts or other users outside the Program; and 2) actual written reports or statistical summaries generated by the Program to keep others outside the Program informed. (Hopefully, we have covered reports for internal use by the Program in the previous section, but please bring up any issues that were not covered. We’ve also asked about general Program description documents up front, and won’t focus on that here.)

Has transmission of the complete data set to users in NMFS become reasonably routine (i.e. available directly from your server, or by file transmission with simple human intervention)? Data transmission has been reasonably routine, with simple human intervention, to the SEFSC, but has required more time for other users in NMFS. The SERO recently requested, past 1-2 years, a variety of our data. NMFS HQ requires the data in SAS. It would be helpful if all partners in NMFS were required to use the same database system. We hope that data will be available online within the near future.

What sort of documentation accompanies the data? Do you send documents describing individual data items, like variable names, lists of codes and abbreviations, etc?

We send any lists of variables when necessary. Some lists are continually updated (e.g., species, vessels, etc.) and have to be sent with any new dataset. If the data are in ASCII files, we provide the format.

How about information about ranges of values to be expected?

Most people who use our data are familiar with the fish and already know the ranges of values to be expected. Occasionally, we get questions about a particular value and respond to the questions.

Do you provide any advice about any data records that might be suspect?

Usually, we resolve suspect data before it is distributed. If someone else questions any part of the data, we investigate and answer their concerns.

What about users outside NMFS?

We apply the same standards to all users.

We presume answers to most of the questions regarding NMFS users would generally hold, but how do you deal with confidentiality?

Confidential data can be legally distributed to most users of our data. If we get a request for confidential data from someone who is not authorized to use it, we explain the procedure for obtaining permission and explain what data we can legally supply. So far, the requesters have settled for data that is not confidential.

What about Data Quality Act documentation?

We have not completed any Data Quality Act documentation.

Are the data available over the internet, or are there any plans to make them available that way?

Answered in a previous section.

Several users have suggested that standardized reports from the Program would be very useful to them, which in turn suggested that the Program is not producing such reports at present.

What is the potential here?

Annual reports, or some other time frame (biannual, every 5 years, etc.) probably would be useful to some users. Currently, members of the Reef Fish Team are involved in several activities that reduce the amount of time available for generating reports. Team members give regular verbal updates at many meetings (e.g., Fishery Information Network, Atlantic Coastal Cooperative Statistics Program, SEDAR workshops, etc.). We should discuss this question during the review in December.

Are there any standard reports produced by the Program that people might not know about?

Since 1996, we produced *Trends in Catch Data for Sixteen Species of Reef Fish Landed Along the Southeastern United States*, and from 1996 – 2003, *Compliance with Reef Fish Minimum Size Regulations as Indicated by Headboat, MRFSS, and Commercial Intercept Data for the Southeastern United States* for the SAFMC.

Could something already produced be expanded for more general distribution?

Possibly, the unpublished manuscript from the early 1980's could be updated and distributed.

Do you have 'mailing lists' of any kind for those wanting information about the fishery?

No

How about a 'newsletter' for participating boats?

Our observations indicate that groups that distribute a regular "newsletter" have at least one employee dedicated to public relations. We do not have this type of employee on the Reef Fish Team. We do send 2-3 newsletters per year to our port agents.

Ever put a document together describing the history of this fishery?

No

The results themselves

This topic changes direction a bit, and most of the questions will require some analysis, or at least summarization, of the actual data. The purpose of asking for such detail is to get some feel for the impact of the fishery on the many stocks involved, and to understand the potential for the Program to inform the community about the status of stocks that have not yet addressed in the management process. It should also help focus later discussion of impacts of any possible changes to the Program

We have seen headboat results for only a few species, but a real power of the Program may rest in its ability to characterize the fishery for many species. To examine this, please prepare tables listing landings estimates (in numbers) from the headboat fishery side by side with catch estimates from MFRSS (or MRFSS + Texas P&W for the Gulf), and the % of the total that is headboat. Use separate tables for the Atlantic and Gulf, and order the species by % catch that is headboat. Please include all taxa recorded, at the lowest level of resolution common to the headboat and MRFSS (and TxP&W) programs. As MRFSS estimates in particular are highly variable, we suggest using averages of the last 5 years of available data.

This request is very time consuming, but we did prepare one table.

(See Attachment – RECLANDINGS.xls)

Examining precision statistics for CPUE indexes across all species recorded is a good way to look at the success and future potential of the Program to contribute information about stock status. Please select a CPUE statistic (either your standard, or perhaps you might consult with the stock assessment group if you do not have a designated standard), and calculate it and an estimate of its standard error for each species (Gulf and Atlantic separately). Calculate the ratio of standard error to the mean (CV of mean), and also calculate the frequency of occurrence (fraction or % of trips with the species present in the catch). Calculate these for each year, and then report average values over the last 5 years of available data as a table or spreadsheet. Order the species by frequency of occurrence. If different indexes must be used for different species for any reason, be sure to specify what is used for each. Add a column for

any comments for things like the range of any species that occurs only in restricted areas or seasons within the Atlantic or Gulf.

(See Attachment – Headboat_CPUE.doc)

We'll make our next request optional, as it could be fairly time consuming. However, it would follow directly from the calculations of the previous table. It is useful to examine plots of annual CPUE indexes (with confidence intervals) vs year for as a long a list of species as practical (maybe the top half of the species in the previous table). If you could prepare these, it allows an overall picture of how dynamic the systems (Gulf and Atlantic separately) are, and thus how important it will be to maintain, increase, or decrease the level of the Program.

(See Attachments – Headboat_CPUE.doc, SEDAR_DWC_Final.pdf, and sedar4Consensus_D2.doc)

(Also Pertinent: www.sefsc.noaa.gov/)

SEDAR 1 – Red Porgy

SEDAR 2 – Black Sea Bass & Vermilion Snapper

Is it possible to develop a time series of the number of headboats in the fleet for years prior to the survey? (maybe via state license records or business records)

Most likely, that time series would be impossible to create.

The Business Side

Organization

Sketch out your organizational structure. Does anyone have dual functions (e.g port agent and area coordinator) or other connections that might not be evident on a standard organization chart?

What other duties, outside the Headboat Program, do key staff have?

(See Attachments for 2 questions above – budgetdetail.xls and org,budget,accomp.ppt)

The agent system

Please prepare a list of information on port agents in the Headboat Program, including name, primary location, area covered, number of boats to cover, affiliation, grade for gov employees, cost as salary + benefits (+ overhead + profit, if contract). Note if any are seasonal or part time. Indicate as vacant any positions not covered at present, but still needed.

(See Attachments – budgetdetail.xls - org,budget,accomp.ppt – Port Agent List.doc)

Please describe any gaps in agent coverage that have occurred over the last several years, like due to vacancies or reassignments away from Headboat duties.

All gaps in coverage occurred when a port agent resigned or was fired, and we were not given permission by the SEFSC to fill the position. No gaps occurred because a port agent was assigned other duties. The following is a list of gaps in coverage during the past 10 years:
1994 – Southwest FL – approx. 1.5 years {no funds}

1995 – Southeast FL – approx. 1.5 years {no funds}
 2000 – SC – approx. 1.8 years (lost biological data but not catch/effort data) {employee's health}
 2004 – Louisiana – approx. 1 year {no funds}

What areas were not covered, and for what time intervals?

See above

Can you give an approximate accounting of a 'typical' agent's time? (i.e traveling, data entry, data checking, sampling, maintaining contacts, etc).

The following is a list of major duties and approximate percent of a typical week:

Travel to/from vessels -	65 %
Sampling -	20 %
Editing/coding data -	10 %
Reports -	5 %

Are there some agents whose time budget would differ in a major way from the 'typical' for any reason?

No

Do the agents have additional duties that are not part of the Headboat Program?

The Federal or contracted employees that are hired by the Reef Fish Team rarely have any other duties. The two state employees in Florida, funded by GSMFC, spend approximately 90 % of their hours doing Headboat Survey duties. The four state employees that were in Louisiana, previously funded by GSMFC, spent approximately 25 % of their time doing Headboat Survey duties.

Do you borrow services from port agents affiliated with other programs for part time headboat data duties? (If not, any potential for doing so?)

As well as the port agents mentioned above, we have one port agent whose main job is sampling commercial landings but has sampled 3 headboats since 1986. Although this arrangement has worked well, sharing an employee with another team can be very difficult. The work is weather dependent that requires a flexible schedule.

Are you having any particular recruitment or retention problems?

Yes, the state employees assigned to the Headboat Survey, often do not stay in the position for an extended period of time. Most take another state assignment with higher pay. On the other hand, the port agents who are Federal employees have been part of the Survey for many years.

Are there any ports or areas where one agent is having not quite enough to do the job?

Yes, the number of vessels in both southeast and southwest Florida exceeds the number of vessels that a port agent can contact at least once every two weeks. For better coverage, each of these areas should be divided into two areas, or a third port agent hired to cover the southern ends of both areas.

Any ports / areas where one agent is a little more than needed?

A full time port agent is not needed in southeast NC from October – May, but is required in the summer months.

Do you, or if not, would there be benefit, in supplementing field activities with seasonal employees?

Yes, we use a part-time employee, often a student, in southeast NC.

Back in Beaufort

What is the situation regarding staff for data entry, error checking, data summarization, other program support etc? Another table indicating name, grade / salary cost, specific duties, fraction of time on Headboat Program, etc, would be useful. What other (non-headboat) duties do people on this list have? For those shared with other programs, how do you resolve conflicts for their time?

(See Attachments – budgetdetail.xls and org,budget,accomp.ppt)

Oversight

We presume the bulk of the oversight functions fall to the Program leader. Is this correct, or are there area coordinators, or supervisors from other tasks, that carry part of the load?

You are correct, the bulk of the oversight functions fall to the Program Leader.

Please give a rough accounting of the Program leader's time budget -- like time working directly with program staff, time interacting with the fleet (maintaining contact, or establishing new communications), time spent checking data, time spent reporting results, time spent working with data users, preparing budgets, preparing responses to information requests, etc.

Other members of the Team are responsible for doing most of the data editing and the weekly communications with port agents. The port agents are responsible for communicating with personnel of new vessels.

The following are the five elements in the Program Leader's Performance Plan and a list of accomplishments in FY04:

1. Atlantic and Gulf of Mexico Headboat Surveys
 - (1) Regularly informed Team Leader & Division Chief of problems & accomplishments
 - (2) Provided information on staffing and funding
 - a. Completed documentation to hire 3, terminate 2, extend 1, and promote 1 port agents
 - b. Informed Center Director, Division Chief, & Team Leader of funding issue and spent considerable time working to fill the vacancy in Louisiana
 - c. Worked with NC, SC, GA, & AL biologists to avoid sampling conflicts
 - d. Provided detailed instructions to port agents on deadlines, procedures, etc.
 - e. Created seven new headboat trip report forms in WordPerfect (was done by lab illustrator in previous years)
2. Estimates Headboat Fishery Landings and Fishing Effort
 - (1) Completed estimates of landings & fishing effort as follows:
 - a. Gulf of Mexico Headboat Fishery 2000, 2001, 2002, and 2003

- b. South Atlantic Headboat Fishery 2003
- (2) Provided data to many requesters as follows:
 - a. NMFS Southeast Regional Office (each line was a different request):
 - Code lists & SAS programs
 - Annual landings & fishing effort (42 species) 1986 - 1999 Atlantic
 - Annual red snapper by area 2000 - 2003 Gulf
 - Monthly/Seasonal landings 1986 - 1993, 1997, & 1998 Atlantic
 - Reported landing/effort database files 1999 - 2003 Atlantic & Gulf
 - Biological sampling database files 1998 - 2003 Atlantic & Gulf
 - Annual & monthly landings & effort 2000 - 2003 Atlantic & Gulf
 - Headboat trips by state 1998 - 2002 Atlantic
 - b. NMFS Southeast Fisheries Science Center (Miami)
 - Monthly landings & effort 2000 - 2003 Gulf
 - Monthly landings & effort 2002 - 2003 Atlantic
 - Reported landings/effort database files 2000 - 2003 Atlantic & Gulf
 - Biological sampling database files 2002 - 2003 Atlantic & Gulf
 - Vessel list 1999 - 2003, updated species list 2003
 - c. NMFS Southeast Fisheries Science Center (Panama City)
 - Area codes & SAS programs
 - d. Gulf of Mexico Fishery Management Council
 - Annual vermilion snapper landings & effort 2000 - 2002 Gulf
 - e. Gulf Restoration Network
 - Annual red snapper landings by state 2000 - 2002 & mean weights Gulf
 - f. Duke University
 - Annual landings 2000 - 2003 Atlantic & Gulf
 - g. Environmental Defense
 - Annual red snapper landings by state 1986 - 2003 Gulf
 - h. South Carolina Department of Natural Resources
 - Annual landings for South Carolina 1997 - 2002 Atlantic
 - i. Florida Wildlife Commission
 - Annual/Monthly landings & effort 2000 - 2002 Atlantic & Gulf
 - Reported landings/effort database files 2000 - 2002 Florida
 - Biological sampling database files 2000 - 2002 Florida
 - Headboat trips by area 2002 Florida (for FIN & ACCSP)
 - j. Gulf States Marine Fisheries Commission
 - Annual/Monthly landings & effort 2000 - 2002 Gulf
 - k. Texas Parks & Wildlife Department
 - Headboat trips by area 2002 Texas (for FIN)
 - l. Alabama Department of Conservation & Natural Resources
 - Headboat trips 2000 - 2002 Alabama (for FIN)
- 3. Participates on Regional Committees and Work Groups
 - (1) Participated in two meetings and two conference calls of the ACCSP Recreational Technical Committee
 - a. Supplied number of Florida headboat trips by area to FWC 2002 (ACCSP)
 - (2) Created, with Mike Prager, a four page document to brief Nancy Thompson on the new for-hire methodology, associated problems, and our position (ACCSP)

- (3) Participated in annual FIN meeting
 - a. Participated in FIN For-Hire Work Group conference call
 - b. Participated in FIN Biological/Environmental Work Group conference call
 - c. Provided trip data to TWPD & ADCNR (see 2. (2) k. & 2. (2) l. above)
- (4) Participated in five day SEDAR data workshop for red snapper Gulf
 - a. Provided 2003 red snapper landings, effort, & size data for SEDAR stock assessment workshop
- 4. Special and Ad Hoc Requests
 - (1) Prepared briefing document for Nancy Thompson (see 3. (2) above)
 - (2) Responded to FOIA Oceana bycatch petition for rule making
 - (3) Completed GOMEX Ecosystem Pilot Inventory for Headboat Survey
 - (4) Responded to request from Center Director to solve discrepancy in landings data for vermilion snapper in a spreadsheet sent to SERO by SEFSC (Miami)
 - (5) Responded to request from SEFSC (Miami) to solve discrepancy in landings data for red snapper in a spreadsheet created by TPWD
 - (6) Participated in the Recreational Fisheries Working Group to develop *The NOAA Draft Recreational Fisheries Strategic Plan 2004-2009*
 - a. Edited and compiled comments from SEFSC personnel on the *The NOAA Draft Recreational Fisheries Strategic Plan 2004-2009* and sent to NMFS HQ
 - (7) Prepared a section for the 2004 GSMFC Annual Report
 - (8) Prepared a cost comparison of personnel hired under CASU versus FTE for Deputy Center Director
 - (9) Prepared history of Headboat Survey vehicles for Division Chief
- 5. Communications and Administration
 - (1) Conducted several team work group meetings on Headboat Survey operations/goals
 - (2) Cooperated with Dean Ahrenholz for obtaining samples of dolphin (fish)
 - (3) Supplied WordPerfect version of travel request and travel voucher to Beaufort NMFS personnel
 - (4) Participated on CCFHR Laboratory Space Committee
 - (5) Improved channel of communications to handle problems in the Headboat Survey
 - (6) Provided numerous copies of email communications to Team Leader & Division Chief

Any seasonal rhythm to the job worth commenting on?

The busiest season for the fishery is from May through August. Starting in December, port agents are encouraged to collect and submit all data for the calendar year, ASAP. In March and April, we try to complete the annual catch and effort estimates for May 1. We got behind in some estimates in the past three years but plan to be back on schedule in 2005.

Are there any of these functions that you don't feel are getting the proper attention?

We should have, at least, an annual meeting of all port agents. More frequent visits to vessel personnel by staff located in Beaufort, might improve some of our reporting problems.

Do you have other duties that compete with working on the Headboat Program?

See above

Any that take up too much your time for their value?

Currently, biologists are performing administrative tasks that used to be done by administrative personnel.

Any functions that you would do in a fundamentally different way, if it were convenient to make the change?

Since the Program Leader plans to retire in less than two years, we need one person dedicated to just helping operate the Headboat Survey.

If so, how do you deal with those conflicts? (If there are others on staff who take on some of these roles, please describe their time budgets as well.)

(See Attachment – org,budget,accomp.ppt)

How much time do the Branch Chief or Team Leader (title uncertain to us) and the Lab Director spend on Headboat issues?

The Team Leader spends approximately 30 % of his time on headboat issues. The Branch Chief spends approximately 2 %, and the Lab Director spends almost 0 %. In the past several years, either we didn't have a Branch Chief or an Acting Branch Chief filled the position. The Branch Chief position was just filled with a permanent employee so possibly, the Branch Chief may become more involved with the Survey in the future.

Are either directly involved in any issues beyond the standard supervisory and budget responsibilities?

No

Do agents come to Beaufort, either individually or as groups, on a regular schedule?

Unfortunately, No

How about vessel crewmen that provide data? (If not, any need to?)

Not necessary, but some personnel from local vessels have been to the laboratory.

How much travel is necessary for the Program Leader or other Beaufort staff to visit fleet members and field agents?

Due to budget and size of the area of survey coverage, most visits to port agents and fleet personnel are done during the training periods, by a Team member other than the Program Leader. When other research activities are in the vicinity of a port agent, some additional visits are conducted.

What training do the agents get? (including standard procedures in obtaining catch/effort data, species ID, instructions on taking samples, instructions on how to select samples, data entry, safety, communicating with the industry and boat customers, how to be efficient with their multiple tasks, etc)

New port agents receive from 4-7 days of training when first hired. The agents are supplied with a copy of the training manual and are asked to read it thoroughly before training begins to familiarize them with the terminology of the survey. Initial discussions with the agent provide them with a history of the survey and a detailed description of the objectives of the survey and

the types of data we are trying to collect. The importance of the two components of the port agent job, the dockside bioprofile sampling and the catch record-logbook portion, are discussed. After this, the specifics of obtaining each component are elaborated upon in detail as follows. (See Attachment – MANUAL.doc)

Bioprofile (Dockside) sampling – Vessel Selection - Agents are instructed to systematically sample catches from all the boats in their sampling area to the extent that they can, and then start the cycle over again. Some vessels run much more often than others and thus are likely to get sampled more frequently. Agents are instructed that once they have sampled a frequently running vessel, to concentrate on getting samples from those that run infrequently. Phone calls by the port agents to the vessel booking offices or vessel crew are the common means of finding out if a boat is running a trip on any given day. It is possible for port agents to obtain more than one vessel sample per day, given the variety of trip types and durations. For example, a half-day trip at one boat may be sampled at noon. The port agent may then be able to drive to another port two hours away and sample a full day trip coming in later in the afternoon. If more than one vessel docks at the same marina and they have staggered arrival times, a port agent may obtain more than one sample from the same port. It is possible for a port agent to obtain samples from one to as many as six vessels in a given day.

Angler Selection - When a headboat unloads and the crew starts passing out fish, a port agent walks up to an angler with a variety of species, asks to measure and weigh the catch, and explains that the agent is conducting a fish survey to obtain biological information. Most anglers are cooperative and have no problem with the sampling. Occasionally an angler will not allow the catch to be sampled, either because he is in a hurry to leave or for some other reason. In these instances, we have instructed our samplers to just move on and pick someone else. There are usually plenty of anglers to choose. Port agents are instructed to select stringers with less common species when picking anglers whose fish will be sampled. The stringers with less common fish will undoubtedly also have the more common fishes caught by the majority of anglers, and thus in selecting this way, port agents will obtain a representative sample of the catch consisting of common, uncommon, and rarely caught species. Port agents are instructed that once they have measured 15 individuals of a given species, then in future stringers they select from within that vessel sample, they do not need to measure any more of that species. This allows them to sample faster, allowing them to obtain even more of the less common species. If they reach that 15-individual level in the middle of processing a stringer and still have more of that species left on the stringer, they are instructed to finish measuring all of that species on the stringer, in order to avoid any selectivity bias. A general goal we give our port agents is 30 fish measured per vessel sample, but many of our agents routinely exceed this number.

Before going into the field to sample for the first time, the port agent is trained to use the electronic fish measuring board (FMB). Simulated sampling sessions are conducted where the port agent is familiarized with the operation of the board, downloading of the data, data editing, and preparation. This usually takes several hours. Once familiar with the FMB, the port agent is then taken to the various ports in the assigned area and begins sampling headboat catches under the watchful eye of the trainer. The dockside training sessions include: species identification (many port agents already have a good working knowledge of reef fish species, some have no familiarity), manual operation of the FMB, developing speed while sampling, and interaction with individual anglers and headboat crewmembers.

When sampling is complete for a day, the port agent is trained in the procedures for downloading and editing the data. After being instructed in these procedures, the port agent is allowed to work on their own for the remainder of the training period, with the trainer checking the finished product at the end of each download. Visual edits of the data include: proper alpha and numeric codes, vessel codes, area codes, fork lengths entered when required, and biological sample indicators selected when appropriate. In recent years, most new employees have good computer skills, so this part of the training is usually straightforward. Bioprofile data is emailed to Beaufort on a weekly basis.

Catch-effort data collection - Port agents obtain catch-effort data when they collect trip report forms from vessel personnel (crew, captain, office personnel, etc.) We prefer to have trip reports filled out by someone actually on the trips (captain or deckhands). In the past, however, we have obtained trip reports from office personnel who received trip catch information from the crew at the end of a trip. Port agents explain how important accurate and timely information from the vessel personnel is to generating reliable estimates of headboat catches. We ask the crews to submit a report for each individual trip they make. The port agents take the time to instruct the crew in the proper completion of the report, asking them to record date, trip type, number of anglers, fishing location in a 100 square mile grid, numbers of fish by species, and a good fisherman's eye of the total weight of each species. Some large fish are weighed and the crewmember can record the exact weight. Cooperation is generally good in most areas, with the exception of southeast Florida in the last few years. If port agents cannot get cooperation from vessel personnel, we instruct them to try someone else on the boat. If no one will cooperate, we instruct the port agents to talk to the owner of the vessel, but often it is the owner who is instructing the crew not to submit records. In this case, we train the port agents to obtain more personal observations of activity, so that our estimate of effort might be more reliable. Upon receipt of trip reports from a vessel, the port agent looks them over individually for completeness, correct species identifications, and both legibility and legitimacy of data recorded. The port agent must enhance any data that is not legible, so the key entry personnel can read it. Any entries that are obviously unrealistic are questioned.

What about training crewmen contributors? What is nature of their 'contract?' (Are they more part-time contract employees, or independent entities contracted to deliver a data product?)

The trip reports are mandatory so these questions are not applicable.

What kind of training do you give them -- things like species ID, details of what is intended on data forms, general instructions on integrity of data, etc?

Any new vessel personnel, that complete trip reports, are instructed by the port agent on the purpose of the reports and what information is needed in each field. Species identifications are reviewed and common names are discussed. Most vessel personnel want to know the correct name of the fish they are catching.

Is not getting what you expected a recurring problem?

Usually getting the correct information is not a problem but in some areas, getting the reports is a problem.

How about turnover?

Usually, this is not a problem.

How do you recruit new contributors when anyone leaves or declines to continue?

The captain or owner usually assigns the work to a mate.

Any problems with hostility from contributors, like in reaction to new regulations; or hostility toward contributors, like them being viewed as the ‘government’s man?’

Hostility is probably not the correct term. Some vessel personnel do not like regulations and will voice their opinions. The port agents are the first to receive those complaints. The result of their displeasure may be refusal to complete trip reports, but it is rare for vessel personnel to be angry with the port agents.

How do you evaluate performance, for either an agent or a crewman contributor?

If we suspect that we are receiving false data from vessel personnel, we usually catch this by comparing the number of anglers on the trip reports versus the number of anglers counted by the port agent. Also, we can compare the species reported on the trip report versus the species sampled by the port agent.

The Federal port agents are reviewed semiannually under the Performance Appraisal and Position Review. For all port agents, we have time requirements for submission of various reports and data. Also, we review the number of trips intercepted and the number of fish sampled.

Do you visit them to review?

Usually, the reviews are done over the telephone but we have made visits when necessary.

Do you talk to the fleet members they deal with?

Sometimes

Do you have ‘metrics’ like number of samples, number of visits to fleet, timeliness, etc?

Yes

Ever have any real bad problems – like offensive behavior or faked data? If so, how did you detect it, and what did you do?

In the past 33 years, we caught two port agents falsifying data and both were fired. We detected repeated errors in the data.

How does the program operate with respect to port agents or other positions outside NMFS? (We understand the Gulf Commission has had some involvement, for example.) Do they provide staff directly to the Program?

In Florida and Louisiana, the port agents work for the state fishery agency. In Texas, we recruit the employee but the port agent works under a contract with the GSMFC.

If so, how is that working?

Overall, the arrangement has worked fairly well as long as the funds are available. Last year, the funds were cut for the Louisiana port agent and unless funds are increased to GSMFC, funds for three more port agents will be cut in 2005. When there are funds, the main problem is the rate of employee turnover.

Do they get the same training and feedback?

Yes

Do they have competing responsibilities set by their employers?

Some

If so, does this cause problems?

In Florida, both state employees are in the areas with a large number of vessels. Any time spent on other duties, affects their ability to contact each vessel on a regular basis. In Louisiana, the constant turnover of personnel resulted in few trip reports submitted in 2002 and 2003. Removal of GSMFC funds in 2004, resulted in both no trip reports and dockside samples.

Any problems with performance that have been difficult to resolve?

No

The budget

We attached the request for labor costs for the agents in the section dealing with agents. We'll need the same salary cost data for other members of the Headboat Program. We'll also need data on all other 'out of pocket' costs: travel, transportation, gear, supplies, mailing, office expenses at non-NMFS facilities, computers, etc.

(See Attachments – budgetdetail and org,budget,accomp)

What are the costs of the contracts with vessel crew members?

No costs to the Gulf of Mexico fleet, and none since 1988 to the Atlantic fleet, when trip reports were made mandatory in the Snapper Grouper FMP.

Some capability is undoubtedly provided to the Program without direct charge. How are those expenses handled? Is secretarial support directly charged to the program? How about admin office or computer group support? General facilities costs at the lab (lights, phones, trash, upkeep)? Every lab deals with these costs differently, but it is appropriate to estimate a 'share' of these costs for every program in the lab, even if the lab chooses not to 'bill' the programs directly. (A number of NMFS programs figure unitemized charges around 12% for internal funds, but you would find vast differences in what sort of charges were covered, and where in the system those monies were applied.)

All of the above charges are billed directly to the SEFSC and cover all NMFS employees at the CCFHR.

Have you ever reviewed costs for people with off-site offices?

All Federal port agents, but one, work from their homes. The office space for the port agent in Pensacola, Florida is provided at no cost. The costs of the state employees' offices are covered in the overhead charged to GSMFC.

Any opportunities for cutting costs there?

No

Please review the sources of income (NMFS accounts) to the Program for the last several years. (Some have commented that income may be too fragmented, uncertain, and perhaps untimely within FYs to support a unified Program.)

(See Attachment – budgetdetail.xls)

What is the history of actual funding to the Program? When and where has funding come up short? When and where have you been unable to collect data for lack of funds, or been unable to produce products needed?

This question is impossible to answer! The funds to begin the Survey in 1972, came from the Menhaden Program. At some point (approximately 1976), dedicated funds were dispersed but from 1972 – 2001, the Lab Directors handled all the budgets and “robbed Peter to pay Paul”. Even today, we have a Reef Fish Team budget but not a Headboat Survey budget. At the request of the GMFMC, we began the Survey in the Gulf of Mexico, without a budget! The SEFSC Director told the Beaufort Lab Director to spend what was necessary and the SEFSC would make up the difference. As the SEFSC budget decreased, funds were not available to fill two sampling positions (listed under gaps at top of page 13.). The Gulf portion of the Survey was funded with a SK grant 1997-1998, a MARFIN grant 1999, and a GSMFC grant 2000-2004. We may not have funding for four port agents starting January 1, 2005!

How does the Program operate with respect to costs for any labor or services contributed from outside the Program, such as State or Commission port agents? Do you disperse the funds for these (if any) from Beaufort, or are these handled in the Center or SERO?

The GSMFC contracts with the states, through NOAA Grants Office, or individual (Texas) to complete the work.

If done elsewhere, do you get an accounting of expenses specific to your Program, or is impossible to identify these within some larger package of functions?

The contracts that we see between GSMFC and the states are only for the Headboat Survey.

Some General Questions

These are probably more for discussion at our meeting, rather than for response beforehand, but we'll offer them in advance.

The biggest technical issue may be an underlying statistical design question. The Program may or may not succeed every year in getting some data from all boats, but it is definitely not a census of trips, and never was. It may thus be very productive to put the sampling of trips on a sounder statistical basis. This could give better defensibility of the estimates of catch, effort, and CPUE (even if it didn't change the point estimates greatly). More importantly, it could

provide rigorous estimation of uncertainty around any estimates, which has become increasingly important to the management debates. On the business side, it could allow consideration of more optimal distribution of sampling effort, give a way to scale operations to funds available, and put some teeth in arguments that more (and stable) funding is needed (if it indeed is). The question, however, is what do you see as problems that would or could arise if we did try to switch to a more statistically based system?

We disagree with this suggestion. Currently, trips are only sampled for biological data. Under the FMP's we should be getting a trip report for every trip. We think that instead of designing some sample of trips for catch and effort, we should pursue enforcement of the regulations. With enforcement of the current regulations, the trip report portion of the Headboat Survey could be a census.

Both ACCSP and FIN have recommended moving toward a sample of effort and landings to produce estimates for the for-hire fishery. We should discuss those recommendations during the review.

CPUE data from the Headboat Survey was discounted in the Gulf red snapper assessment largely because it could provide no information about discarded catch. Do we have any possibilities here?

As previously stated, we began collecting discard data in January 2004.

Should the port agents be supplemented or replaced by onboard observers?

There is no doubt that onboard observers supply the most accurate data for discards but at a very high cost. Onboard observers can't collect accurate weights and, it's very difficult for observers to collect discard data and catch data on the same trip. Once the fish are put on ice, most captains don't like the fish to be removed for sampling. If we don't have the funds to provide dockside port agents, how will we pay for observers?

How would the fleet react if we tried?

Most of the headboat operators do not object to onboard observers/samplers.

Could we get reliable discard information from contracted crewmembers?

We don't think that method is feasible and could be biased.

What can we do to learn more about 'directedness' on any trip? Can we increase resolution about spatial locations? Learn about bottom types visited? Do the boats change their practices or strategies much from trip to trip? Would they be willing to share information about these things with us? Detecting and taken into account changes in 'directedness' analytically has been a very difficult problem. We often have difficulty even explaining to the industry what we're after, so any ideas would be very welcome.

This problem exists in any multi-species fishery. However, headboat captains are more concerned about filling the aggregate bag limit than targeting a particular species. The site that they select to fish usually depends more on the wind direction, wave height, and current than the species at the location. The captains are opportunistic and will go to areas that are the most productive.

The list of potential useful data that might be collected on the headboat fishery is long, and not all items are equally practical. Some might be appropriate only on a fraction of sampled trips, for example. A fairly comprehensive list is tables on the last page of this paper. We'd like to review what items are collected, what might be added to the survey in its present form, and what might be considered if the survey switched to another format (e.g. full logbooks or observers). What would be the industry's reaction to these items?

(See pages 23-24)

In general and subjective terms, how is the survey different today from what it was 10, 20, and 30 years ago?

The basic survey has changed very little in 33 years. We haven't paid for trip reports since 1988; port agents don't go onboard as frequently; samples of biological materials are targeted species, rather than get everything from everything; public relations are slightly more difficult due to increasing regulations; since 1986-1987, electronic measuring boards and scales reduced errors in dockside samples; and our data are in higher demand.

There seems to be some potential, and benefit to both groups, for the Headboat Program and the Stock Assessment Group to work more closely on a continuing basis. Anyone have any ideas in that regard? Are you working together already to everyone's satisfaction? If not, are there impediments beyond just making time available? If time is the major impediment, how can we override it? How much should we?

We work closely with the Stock Assessment Group at Beaufort. Time is the main impediment to additional collaborations. We haven't collaborated very much with the Stock Assessment Group in Miami, but we have attended SEDAR workshops for species in the Gulf of Mexico.

Again, general and subjective, given that a lot of details have covered by now, what are the things that bother you most about conducting the Headboat Program? How would you like them changed?

Funding! Funding! Funding! The Headboat Survey has operated on a shoestring budget for all 33 years! We had: vehicles in extremely poor condition, electronic measuring boards and scales that required constant repair due to age, data gaps because of no funds to hire port agents, hand-me-down computers, no funds for travel (port agent meetings or visit vessel owners), insufficient number of support staff, constantly delaying purchases of equipment or services until the next FY, using funds from other grants to help support the Survey, etc. The SEFSC was given several million dollars per year for red snapper research in the Gulf of Mexico, and we get only \$25k per year from those funds!

(See Attachments – History of Headboat Vehicles 2004.wpd and Vehicle_02.pdf)

And finally, what have we, the reviewers, missed? What do we not seem to be understanding?

The questions were very thorough. We hope that you understand the complexity of operating a survey with such a large area of coverage and employees located at remote duty stations.

Data Items of Interest

Vessel specifications:

size, horse power, tonnage, Gross wgt, hull capacity, of the current operations, and if possible back in time, recording when changes were done

Most of past impossible – Industry wouldn't object

Vessel capacity

number of crew, number of passengers max, avg number of fishers per trip/ per month, per week ?

Most of past impossible – Industry wouldn't object

Fishing operations

hours of fishing operation with discrimination / ie. travel time, active search of schools, active fishing (lines in water)

Possible but time consuming – Industry would object to reporting

fishing cooperation between vessels (?), or other sectors (commercial fisherman).

What value is this information?

type of gear used, particularly size and type of hook if R&R, bait,

Possible but time consuming – Industry may object

trolling vs stationary fishing

Not applicable

is a VMS system a possibility?

Maybe

Fishing activity

records of fish hooked, (numbers, and if possible, any indication of species)

Special study required

records of fish retained (species, length, weight)

Special study required - Unlikely by crew

records for fish discarded or released, or used for bait or food while aboard

Releases are now being recorded, used for food is rare

records of the apparent fate of fish discarded or released

Released alive and released dead are currently on trip reports

indication of where/when, how many, depth, area fished, type of bottom etc. for separate fishing operations within trips

Special study required – Industry would object to supplying this information

indication of target spp; including when and how targeting was switched during a trip (e.g. changes in gear used, deploy of gear, area fished, etc)

Special study required – Industry would object to supplying this information

environmental data, possibly by adding automatic sensors? (temp surface, temp at hook, depth, salinity, if they operate/look for fronts, or convergence or divergence zones

Expensive

Economics

cost per person of trip, avg or total per trip with number of fishers.

Special study required

costs of operation per trip, gas, supplies, crew salaries, etc

Special study required – Industry may object to supplying this information

cost of maintenance per year/license

Special study required – Industry may object to supplying this information

Data about fishermen individuals

descriptives of the fishers sex, age, etc

Special study required – Industry may object to supplying this information

general classification into: first timers, once a year timers, frequents (once a month ?), every week?)

Special study required – Industry may object to supplying this information

(See Attachment – Headboat data needs2.wpd)