

**Snapper Grouper Permit Holders' Attitude and Perceptions
Regarding Cooperative Research in the U.S. South Atlantic:
*Results of a May 2012 Survey***

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Introduction

The South Atlantic snapper grouper species management complex is comprised of at least 61 species that are managed by the South Atlantic Fishery Management Council (SAFMC). The fishery is geographically widespread, covering the U.S. East Coast, from Cape Hatteras, N.C., to Key West, Fla., and includes both nearshore and offshore waters. There are many aspects of the fishery that make it especially challenging to manage. Numerous species demonstrate slow growth, delayed maturation, long life spans and predictable aggregative spawning behaviors allowing for efficient harvesting (Coleman et al., 1999). However, many species are subject to size limits, trip limits, seasonal closures and low annual catch limits, also known as ACL (SAFMC, 2010). Most importantly, many of the species are considered data poor, leading to inaccuracies and uncertainty in the assessments (Stephen and Harris, 2010), which can be extremely frustrating to fishermen involved in the fishery.

Fisheries data are typically collected in two ways — fishery dependent and fishery independent. Fishery-dependent data are collected from fishermen through logbooks, dealer reports, port samplers, etc. Fishery-independent data are collected by scientists who harvest and sample fish for research and stock assessments. There is increasing support for cooperative research arrangements in fisheries to collect basic data and pilot test new fishing gear and technologies. Cooperative research allows all parties involved (fishermen, scientists, managers, etc.) to actively participate in all phases of the research process. Collaborative involvement by all participants increases trust and confidence in the data collected and the outcomes derived from such data. However, in order for cooperative research programs to be effective, program coordinators need to have a clear understanding of the research needs, as well as the expectations and perceptions, of the fishing industry.

The participants in the South Atlantic snapper grouper fishery were surveyed about their views of cooperative research programs. The purpose of the survey was twofold: (1) to help fishery managers understand snapper grouper permit holders' attitudes and perceptions toward cooperative research in general and electronic monitoring in particular, and (2) to identify the research needs of the fishery as viewed by fishermen.

Methods

A survey was administered to all participants of the commercial snapper grouper fishery in the U.S. South Atlantic region that operates off the coast of Cape Hatteras, N.C., south to Key West, Fla. The mailing addresses of snapper grouper unlimited permit holders (N=573), snapper grouper 225-pound permit holders (N=123) and snapper grouper dealer permit holders (N=199)

were obtained from the National Marine Fisheries Service (NMFS) Southeast Regional Office Permits webpage (<http://sero.nmfs.noaa.gov/foia/readingrm.htm>, accessed March 29, 2012).

Of the 895 addresses obtained, 109 duplicate addresses were removed, as were 13 undeliverable addresses, resulting in 773 possible participants for the survey. These recipients were considered our sample frame for this study. A packet, containing a welcome letter, a two-page summary of a cooperative research study evaluating electronic monitoring (EM), the survey, as well as a postage-paid return envelope, was mailed to 773 permit holders on April 10, 2012. Recipients were given the option of completing and returning the paper survey using the enclosed envelope or responding through an online portal (www.surveymonkey.com). Approximately three weeks after the initial mailing, a reminder/thank you postcard was sent to all permit holders. The survey period ended in July 2012.

Results and Discussion

General

A total of 118 permit holders participated in the survey, for an overall response rate of 15%. The vast majority of permit holders (86%) used the paper survey. Because participation was completely voluntary and respondents were free to skip any questions they did not wish to answer, the number of responses varied by question. For example, seafood dealers typically did not answer questions related to fishing practices. All actual responses by question are provided in **Appendix D**. Results described in this report are noted as percentages based on the number of responses to each question.

Response rate by permit type and location (e.g., state) was compared to the composition of permits within the sample frame for the study. Analysis of the responses by permit type revealed that dealer permit holders and 225-pound permit holders responded at a slightly higher rate than expected based on the composition of permits from the survey frame, while unlimited permit holders responded at a slightly lower rate than expected. The geographical distribution of permit holders' response did not differ from proportions observed in the sample frame, with the largest subset of respondents coming from Florida (68%), followed by North Carolina (21%), as shown in **Figure 1**. Two-thirds of respondents (66%) indicated they had 21 or more years of experience in the fishery, while only 12% said they had no greater than 10 years of experience. Analyses revealed that owners of multiple snapper grouper unlimited permits responded at a much higher rate than would be expected, based on proportions of those permit-holder types available in the sample frame. This provides evidence to support the hypothesis that owners of multiple snapper grouper permits would have a greater vested interest in the fishery than owners of single permits.

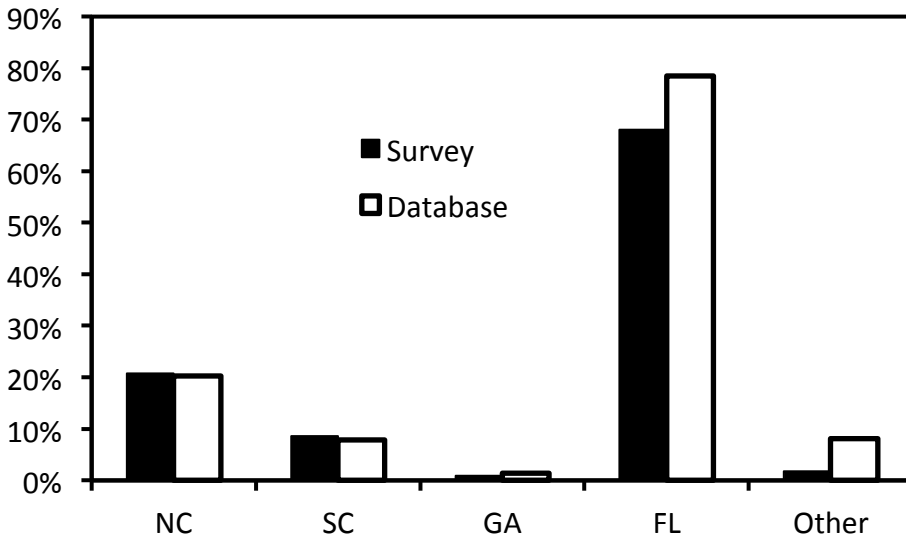


Figure 1. Percent Response by Geographic Distribution vs. Actual Survey Recipient Location

Cooperative Research Priorities

Respondents were given lists of existing research priorities for finfish and economics, as listed in the annual NMFS Cooperative Research Program Request for Proposals at www.grants.gov. They were asked to select the two most important topics from each list that should be addressed in future cooperative research efforts.

Finfish

- The most popular topic was “Document and utilize the knowledge of fishermen to identify spawning aggregations” (51% of respondents).
- Of the remaining choices, efforts to gather basic biological information (total catch characterization, discards, life history information) were selected three times more frequently than efforts to conduct more experimental or applied research, such as modeling, genetics and EM evaluation.

Economics

- The most popular topics were “Document changes in fishing costs as other factors change” (60% of respondents) and “Social and economic impacts of Marine Protected Areas and area closures” (61% of respondents).
- The two remaining topics — “Development of economic incentives to reduce bycatch” and “Fishing capacity investigations: fleet size vs. productivity of regional stocks” — were selected half as often as the top two choices.

Thirty-six percent of respondents provided additional research recommendations, including suggestions for 12 specific studies (**Table 1**). Additional open-ended responses, where applicable, were grouped by project theme or topic.

Permit holders were given a list of 13 species that need additional data to help in the stock assessment process and asked only to select those species with which they were most knowledgeable. Respondents selected gag grouper (68%), dolphinfish (56%), greater amberjack (52%), red snapper (48%) and vermilion snapper (46%). Wreckfish received by far the lowest response rate, with 10% of respondents mentioning this species.

Table 1. Research Recommendations Submitted by Snapper Grouper Permit Holders

Responses	Topic
13	Provide guidance on specific project recommendations <ul style="list-style-type: none"> • Investigate the effect of power-chumming in Florida Keys fishery (2 responses) • Characterize king mackerel spawning off Jupiter, Fla. • Examine survival rates of warsaw and speckled hind • Examine bycatch of shrimp boats in bays and estuaries with abundant juvenile snapper grouper species • Examine cause of increased shark population off Jupiter, Fla. • Examine age, growth and movement (tagging) of tilefish • Investigate yellowtail snapper distribution and spawning issues • Examine MPAs' impact on rebuilding stocks and potential for use in stock assessments • Examine black sea bass genetic population structure • Better document red snapper landings • Examine potential for permit buy-backs • Examine potential for full retention (zero-discard) fisheries
9	Minimize rule complexity and illegal fishing by both recreational and commercial fishermen
8	Develop better catch accounting and improved/additional stock assessments
3	Continue discard mortality research

Attitudes and Interest in Cooperative Research

While the majority of respondents had not previously participated in any form of cooperative research in the past (61%), those that did had taken part in a wide range of activities (**Figure 2**). However, more than half of those who completed the survey currently have no interest in participating in future projects (56%).

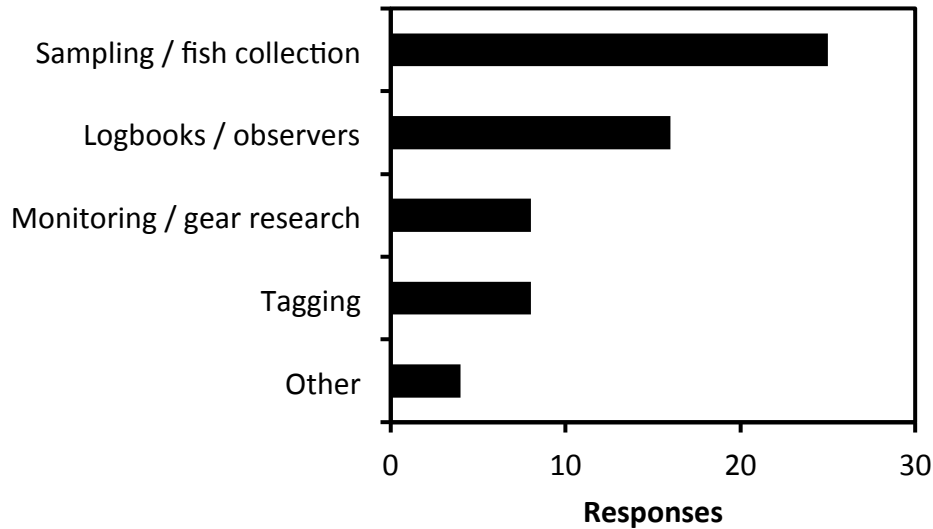


Figure 2. Past Cooperative Research Involvement by Snapper Grouper Permit Holders

Regardless of their past experience or future interest in cooperative research, respondents were asked to rate how important it should be for data collected during cooperative research projects to be used in management decisions such as stock assessments. Sixty-two percent of respondents indicated “very important” or “important” while only 14% indicated “not important” or “not important at all.” Twenty-four percent of respondents were “neutral.”

When asked if they would be willing to follow scientists’ directions for sampling protocols so that data could be collected systematically by different fishermen, 62% of respondents thought that they would be able to comply with this requirement. Stock assessment scientists rely heavily on fisheries-independent surveys when possible. An emerging trend by research scientists is to get recreational and commercial fishermen to carry out standardized, fisheries-independent surveys from private vessels. In most instances, fishermen are compensated and scientists or observers would be onboard and dictate when, where and how to sample (specific gear, hook types, etc.) for the study. When asked if they could support such a partnership, 60% of respondents said “yes.”

Cooperative Research Funding

On average, from 2007 to 2011, \$1.6 million annually has been used to fund NOAA Cooperative Research Program projects in the Southeast United States from North Carolina to Texas, including the Caribbean. This region includes a multitude of commercial and recreational fisheries, and is under the jurisdiction of three of the eight fisheries management councils. On average, eight projects per year are funded through this program. When asked to respond to the following statement: “More funding should be devoted to cooperative research in the Southeast US,” 47% of respondents strongly agreed or agreed with the statement, whereas 23% disagreed or strongly disagreed. Roughly one-third (30%) of respondents were neutral.

Three survey questions were devoted to the discussion of nongovernment-related funding mechanisms for cooperative research. Generally, respondents were not receptive to these concepts. For example, given that at-sea data collection is expensive, the survey asked if there was support for the fishing industry participants to share the cost of the research process. Fifty-seven percent disagreed or strongly disagreed with the statement, while only 19% were in favor to some degree. Roughly one quarter (23%) of respondents were neutral.

When asked if an industrywide membership fee or self-imposed tax could be considered a mechanism to assist with cooperative research funding, 54% were opposed to the concept and 11% were in favor, while about one-third of respondents remained neutral (35%).

The final question on research funding mechanisms asked for opinions about research set-asides (RSA). The survey explained that the Mid-Atlantic region allocates a small portion of a selected fishery’s annual quota (0 to 3%) to fund research projects. Participants conducting the research are then allowed to sell the landings to “fund” the project. The RSA funding mechanism has only been marginally considered in Southeast fisheries (Gregg Waugh, SAFMC, personal communication), so the question was posed: Is this concept (of RSAs) something that the Southeast should explore? Similar to the previous questions on funding, more respondents were not supportive (40%) than supportive (30%), with a large number of neutral responses (29%).

Of all the nongovernmental funding methods mentioned, the RSA method garnered the most industry support. Despite the rather large percentage of respondents who disagreed or strongly disagreed with these new types of funding mechanisms, roughly one-third of respondents were neutral on the subject, indicating that stronger impressions could be generated if these topics were explained further or more fully explored.

Available Resources

More than three-quarters of respondents were not aware of existing outreach publications developed specifically for fishermen interested in cooperative research. For example, when asked if respondents were aware that SAFMC, North and South Carolina Sea Grant personnel and others had developed a guide for cooperative research in the South Atlantic region, 77% percent of people responded “no.” This was not surprising because, although the document was available from the SAFMC, it was not publically posted on their website. When asked if they were aware that the NMFS Northeast Fisheries Science Center had developed a comprehensive guide for fishermen that explains cooperative research, including how to get involved with the process, a similar number of respondents (80%) said “no.”

Communication Tools

In today’s society, there are numerous ways for members of the fishing industry to receive information about fisheries management issues. When permit holders were asked to indicate their usual information channels for fishery-related information, more traditional delivery methods, such as direct mail (77%) and talking with other fishermen (57%), were favored over newer electronic delivery approaches such as email (38%), websites (35%) and cell phones (17%). Newspaper (18%) and fax (6%) were the least common. The majority of respondents currently receive information in multiple ways rather than one single method.

Building on the previous question, permit holders were asked “What is the best way to notify fishermen about cooperative research opportunities and research results?” The survey explained that direct mail is not typically an option because of the time and expense involved. This open-ended question prompted a variety of responses; however, some trends emerged. Forty-five percent of respondents reported email as the best information-delivery method, followed by direct mail (22%), phone (15%), and through fish houses and fish dealers (12%). Although the survey did not contain specific questions about social media as an outreach tool, we assume that permit holders who prefer email also may use social media communication channels in some capacity.

Direct Involvement

Almost two-thirds of permit holders (65%) said they would consider providing an email address to a university-based organization, such as state Sea Grant programs, to receive research findings. When asked if results of completed research projects should be accessible to the public, 83% of permit holders responded “yes.” Respondents were given the opportunity to provide contact information so that Sea Grant staff could assemble a list of permit holders interested in learning more about cooperative research and/or when funding opportunities become available. Fifty-four permit holders (46% of survey respondents) provided names and

contact information (address, phone numbers, email, etc.). Fifty-nine percent of respondents were interested in being emailed the results of this survey once it was completed.

Electronic Monitoring Research

The survey administered to permit holders contained three questions related to EM research conducted by North and South Carolina Sea Grant personnel, and funded by NMFS, in 2010. Overall, most respondents did not support EM research. Specifically, when asked if they would like to see additional cooperative research done to test and evaluate at-sea EM systems, 64% of respondents were opposed to the suggestion. Open-ended comments, in addition to yes/no responses, from this question are categorized in **Figure 3**.

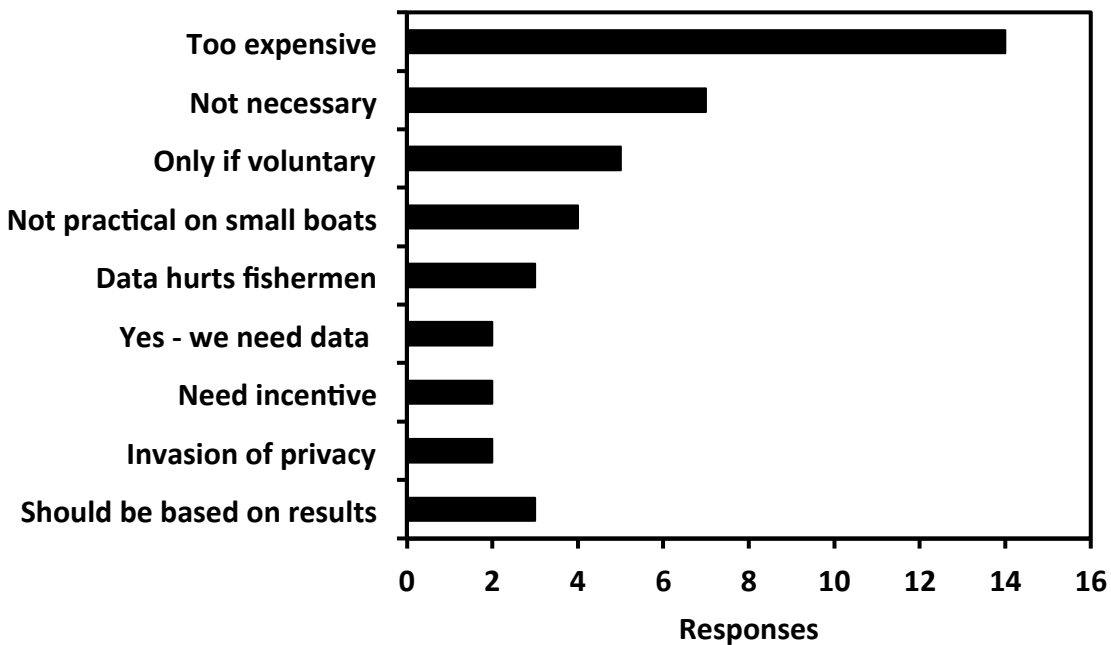


Figure 3. Comments Related to Further Electronic Monitoring Research

Likewise, 76% of respondents were opposed to third-party data review methods, such as EM, as tools to validate self-reported logbook records. Finally, when asked if they would support adoption of standardized fish-handling guidelines to improve the video-review process if EM was to be further evaluated (a recommendation from the EM study), more than three-quarters (76%) of respondents were not supportive of the idea.

The EM systems used in our pilot study are designed for vessels with continuous power. However, in the snapper grouper fishery, vessels typically are small and do not have access to continuous, uninterrupted power supply or generators. When actively bottom fishing, 50% of

respondents routinely turn off their engines and 20% turn the engine on and off as needed while fishing. Eighty-five percent of respondents use traditional lead-acid batteries for the vessel's house bank of batteries (typically used to power auxiliary equipment, such as electric bandit reels, plotters, radios, lights, etc.), while only 8% use newer, lighter and more efficient gel batteries. These responses provide some evidence that the greater snapper grouper vessel fleet is not well suited to hosting additional electricity-intensive systems, such as EM and/or Vessel Monitoring Systems, also known as VMS. Changes to fishing practices in general (e.g., spending more time running the engine while fishing to power batteries) or perhaps the vessel's electrical system (e.g., adding more batteries or a generator) may be required in order for these electricity-intensive systems to operate properly.

Recommendations

We feel comfortable making the following recommendations that if implemented, could improve both industry participation and acceptance of cooperative research in the snapper grouper fishery. Cooperative research administrators could:

- Continue to inform sectors of the broader fishing industry about available cooperative research opportunities and emphasize the positive impacts associated with the relationships formed between fishermen and research scientists/managers;
- Host a cooperative research symposium that highlights results of the cooperative research conducted in the region under the NOAA Cooperative Research Program and other similar programs over the past five years;
- Develop more background information on EM applications, and fishery-dependent and -independent data-collection methods and practices so that new study participants will have a better understanding of how the research might be used;
- Develop background information on the benefits and drawbacks of industry-funded cooperative research programs; and
- Consider assembling a database of permit holders interested in participating in cooperative research studies.

Conclusions

This survey represents the first attempt to define U.S. South Atlantic snapper grouper permit holders' attitudes and perceptions toward EM specifically and cooperative research in general. The response rate (15%) was adequate, but could likely have been improved by using an introductory warm-up letter prior to mailing the survey and working more proactively with key fishermen to encourage survey responses in their area. We feel confident that the views summarized in this report are reflective of the greater industry at large.

Respondents were, on average, supportive of cooperative research but generally were not supportive of future EM testing in the snapper grouper fishery. Most permit holders preferred cooperative research projects that relied on the use of industry knowledge and/or simple data-collection activities over more applied projects to address complex research questions. Recent initiatives by the SAFMC to use fishermen’s knowledge to locate habitat and catch locations of speckled hind and warsaw grouper were considered very successful by most participants and end users because much of the fishery-dependent information available is known only to the industry. As the SAFMC continues to consider electronic reporting, EM and other issues for the region’s snapper grouper fishery, the results of this survey could provide valuable information on the attitudes of fishermen toward these types of management tools. This would allow managers to work with fishermen to develop widely accepted management measures and allow scientists to better design collaborative research projects to address the research questions surrounding these management tools (Wendt and Starr, 2009).

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Appendix A: Welcome Letter

M. Scott Baker, Jr.
NC Sea Grant Program
UNC-W Center for Marine Science
5600 Marvin Moss Lane
Wilmington, NC 28409

April 9, 2012

Dear South Atlantic Snapper Grouper permit holder:

In 2010, NC Sea Grant, in cooperation with SC Sea Grant and the snapper grouper industry, conducted a research study to test electronic video monitoring as a possible tool to characterize the South Atlantic snapper grouper vertical line bandit fishery. The study was supported through a NOAA Cooperative Research Program.

The purpose of this packet is to provide the snapper grouper industry information about the study and to get feedback about the study design and cooperative research needs in general.

Enclosed in this packet are the following items:

- Brief overview about the study, "**Evaluation of electronic monitoring (EM) as a tool to characterize the snapper grouper bandit fishery.**" We welcome your comments and questions about this research study.
- **Cooperative Research Feedback Survey:**
The purpose of the survey is to help us understand your attitudes about cooperative research, the research needs of your fishery and to help you stay better informed about cooperative research opportunities. Participation in this survey is voluntary and you may stop at any time or refuse to answer any question and will not be treated any differently. Answers to all questions will remain anonymous. At the end of the survey, you will have the option of providing your contact information so that we might be able to contact you about ongoing cooperative research projects and future opportunities. If you would like to complete the survey online instead of the paper version, please visit this website (<https://www.surveymonkey.com/s/P3HRG38>). The survey should take about 10 minutes of your time.
- **Postage-paid envelope:** Please use this envelope to return the survey if you use the paper option.

Please complete the survey by mail or online by May 31, 2012.

There are several on-line resources for information about fisheries management and cooperative research. We encourage you to check out the following resources:

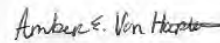
- "A Guide to Fisheries Stock Assessment: From Data to Recommendations" (New Hampshire Sea Grant and Northeast Consortium): <http://www.seagrant.unh.edu/stockassessmentguide.pdf>
- "Working Together: Developing a Cooperative Research Project and Proposal" : <http://www.nefsc.noaa.gov/coopresearch/guidelines/Cooperative%20Research%20Guide.pdf>

Feel free to contact me with any questions regarding the research project or the survey. We appreciate your time in completing the survey!

Best,



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Appendix B: Research Results

Evaluation of electronic monitoring (EM) as a tool to characterize the snapper grouper bandit fishery

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Introduction

Perhaps the biggest challenge affecting management of the South Atlantic snapper grouper fishery is the difficulty in determining the number and fate of regulatory discards (NMFS 2011). Despite this challenge, there is the desire by industry and managers to provide more accountability to self-reported logbook data that is the primary data source for the fishery. Observers have occasionally been used to characterize the fishery (GSAFFI 2010), but electronic video monitoring (EM) may provide a more comprehensive and cost effective approach to monitor fishing activity on a continuing basis.

The overall goal of this research effort is to determine if EM technology can be used as a tool to characterize the South Atlantic snapper grouper vertical line bandit fishery.

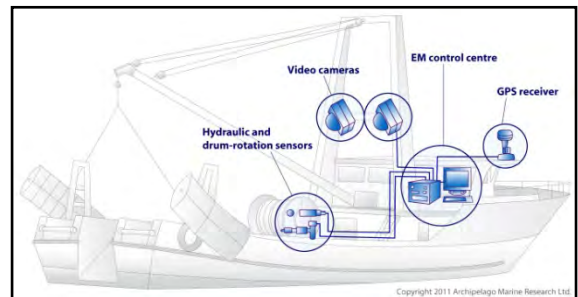
Methods

EM systems consisting of three to four cameras, a rotational drum sensor, a GPS and a control box were installed on 6 bandit vessels from NC to GA in March 2010. Cameras were installed as necessary to cover the entire area where fish were brought on board, handled, then either retained or released. EM systems were active on participating vessels from May through December 2010.

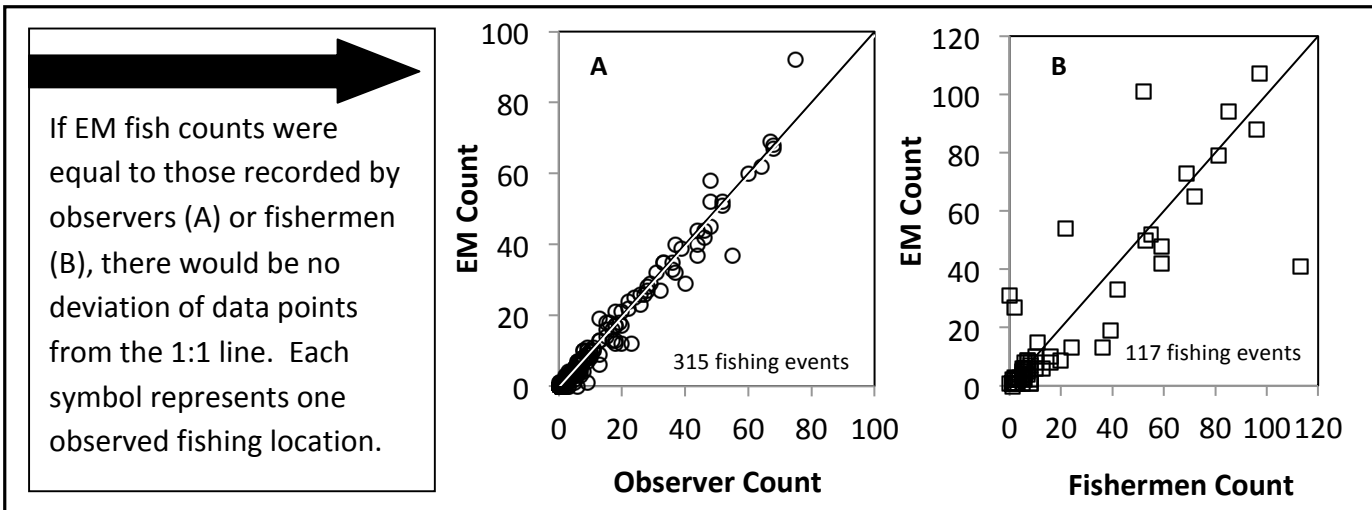
While studies have shown that it is possible to rely solely on EM to monitor a fishery (Stanley et al. 2011), this is a cost prohibitive approach given the characteristics of the Snapper Grouper fishery. Because EM has never been used to characterize bandit gear, data collected by at-sea observer on 5 trips (32 sea days) served as the standard to which to compare EM data. EM data was then compared to catch and effort data recorded by fishermen in a logbook developed specifically for this project in which fish were accounted for by blocks of time (to facilitate EM review at a later date).

Results and Discussion

A total of 93 trips were monitored by EM, 34 by fishing logbooks, and 5 by observers. A total of 524 sea-days were monitored with EM systems, and complete catch documentation using EM was completed for 139 sea-days. The overall EM data collection success rate for the 8 month study period was 64% (range: 46%-91%). Sixty-three percent of image quality was of medium quality and 36% was of low quality.



Fishing effort documented with EM was on average lower than both days and hours fished reported in NMFS logbooks by fishermen. A comparison between EM and observer counts of fish resulted in a high level agreement (Figure A). The comparison of EM to fishermen counts for assigned species common to all vessels (Figure B) also showed good agreement overall, but not as high as with the observer data. Species identification with EM was less accurate than catch recorded in logbooks for most species.



Conclusions

The results indicate that EM monitoring could be used as a tool to audit logbook data as well as augment existing fishery dependent data collection programs. There is potential to improve monitoring in the snapper grouper fishery if agreement in the catch accounting comparisons can be improved and variation minimized at the vessel level. The implementation of EM on a wider scale than this pilot study would require adaptations to ensure that the data collection is to a high standard and provides adequate opportunity for validation. EM hardware and analysis costs are significant, yet scale of EM implementation could be based on the desired monitoring objective (small study fleet versus fleetwide implementation). The main challenges related to data collection that would need to be overcome are clearly defining what activities constitute a “fishing event”, making changes to the catch handling methods to facilitate EM imagery review, and compliance with equipment use requirements on vessels.

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This document represents only a portion of the research outcomes associated with NOAA NMFS Cooperative Research Program Award # NA06NMF4540059.

Appendix C: Survey Instrument

Snapper Grouper Fishery Cooperative Research Survey

The purpose of this survey is to collect feedback from Snapper Grouper commercial fishery participants specifically on the topic of electronic monitoring (our research study) and cooperative research in general.

In 2010, NC and SC Sea Grant conducted a cooperative research study with six commercial snapper grouper boats in NC, SC and GA to test the use of electronic video monitoring (EM). The main purpose of the study was to determine if this type of monitoring device would logistically work in this fishery and more specifically be able to accurately record catch and discards. The research study gained the interest of industry members and fishermen expressed an interest in pursuing additional types of cooperative research projects. Therefore, this survey would like to learn more about the cooperative research interests of the snapper grouper industry.

Participation in this survey is voluntary and you may stop at any time or refuse to answer any question and will not be treated any differently by the researcher(s). Answers to all questions will remain anonymous. At the end of the survey, you will have the option of providing your contact information so that we might be able to contact you about ongoing cooperative research projects and future opportunities. If you provide contact information, it will not be associated with your survey responses. If you would like to complete the survey online instead of the paper form here, please visit this website (<https://www.surveymonkey.com/s/P3HRG38>).

Please complete the survey by May 31, 2012.

Section I. Describe your business

The following questions relate to your specific business. This information will help categorize your comments to this survey without identifying you.

1. Please indicate the South Atlantic Snapper Grouper permit type(s) that you currently possess.

- SG unlimited SG 225 pound SG dealer

2. If you selected "SG unlimited" permit in the previous question, please indicate the number of these permits associated with your business.

- 1 2 3 4 or more

3. What state is your business licensed and located in?

- NC SC GA FL Other

4. In addition to Snapper Grouper, what other fisheries do you participate in? Check all that apply.

- | | |
|--|--|
| <input type="radio"/> Atlantic Dolphin / Wahoo | <input type="radio"/> King Mackerel |
| <input type="radio"/> Spanish Mackerel | <input type="radio"/> South Atlantic Charter for Snapper Grouper |
| <input type="radio"/> Atl Charter/Headboat for Dolphin Wahoo | <input type="radio"/> Gulf of Mexico reef fish |
| <input type="radio"/> Spiny Lobster Tailing | <input type="radio"/> Commercial Spiny Lobster |
| <input type="radio"/> Shark Directed | <input type="radio"/> Shark Incidental |
| <input type="radio"/> Other | |

5. How many years have you been involved in the Snapper Grouper commercial fishery?
 0 1 - 5 6-10 11-15 16-20 21 or more years

Section II. Electronic monitoring pilot study with snapper grouper fishermen

Cooperative research is a process by which fishermen and researchers work together to develop and conduct projects that require the specialized knowledge of each partner. Results can promote better science and management for fisheries, as well as increase communication and collaboration among fishermen in the region. This series of questions relates specifically to the results of our cooperative research project involving an electronic monitoring (EM) service provider and 6 Snapper Grouper bandit fishing vessels from NC, SC and GA that tested the technology over an 8 month period in 2010. See handout enclosed with this survey for more information.

6. Would you like to see additional cooperative research done testing and evaluating at-sea EM systems?
 Yes No

Comments: _____

7. While EM can be used to collect all catch data, the study found that it can also be an effective tool for auditing self-reporting logbooks. Do you support the concept of using a third-party data review method like EM to validate logbook records?

- Yes No

Comments: _____

8. The video processing company we used suggested adopting standardized guidelines for handling fish while fishing (keeping and discarding fish) to make video review quicker and more cost effective. Examples of guidelines could be briefly holding all fish up to the camera for 3 seconds or placing discarded fish on a centrally located discard chute (sloped platform hanging over side of boat) on the back deck to release all discards within camera view. If EM is continued to be tested and considered for a monitoring tool, do you support the adoption of standardized handling guidelines to improve the video review process?

- Yes No

Comments: _____

9. While actively bottom fishing (i.e., making more than a few test drops), do you typically turn off the engine or do you keep the engine running?

- Usually turn engine off Usually leave engine on Combination of on/off Other

Comments: _____

10. On your vessel, what type of batteries do you use for your “house” bank? This bank of batteries would power auxiliary equipment like electric bandits, plotters, radios, lights, etc.

- Lead-acid batteries
 Gel batteries
 Other

Comments: _____

Section III. Research topics

The following questions want to understand your attitude about cooperative research in general.

11 & 12. The National Marine Fisheries Service Cooperative Research Program priorities for the snapper grouper fishery are listed below. Please pick 2 topics under Finfish and 2 topics under Economics which you feel are the most important data needs from this list. You will have the opportunity to add topics later in the survey.

Finfish	Place an X in 2 boxes below to indicate priorities	Economics	Place an X in 2 boxes below to indicate priorities
Efforts to characterize the total catch of the commercial fishery		Document changes in fishing costs when other factors change (regulations, quotas, etc.)	
Efforts to characterize discards and determine discard mortality rates for important species		Development of economic incentives to reduce bycatch	
Efforts to evaluate electronic log books (ELBs) for fishermen to record data at sea		Fishing capacity investigations: Fleet size vs. productivity of regional stocks	
Use of observers or electronic monitoring to obtain life history information on important species		Social and Economic Impacts of MPAs and area closures	
Determination of fish age through collection of hard parts (otoliths, spines, etc.)			
Evaluation of genetic methods for use in tag and recapture studies			
Develop consistent sampling methodologies to document relative abundance over time			
Marine ecosystem modeling of food webs, trophic structure and recruitment in the GOM			
Document and utilize the knowledge of fishermen to identify spawning aggregations			

13. Do you have research recommendations that you would like to add to the above list?

- Yes No

If yes, please list: _____

14. The following species have been identified as in need of additional data to help in stock assessments. Please indicate only those species you are most knowledgeable about.

Greater amberjack	
Red snapper	
Grunts (all)	
Scamp	
Wreckfish	
Snowy grouper	
Hogfish	
Red porgy	
Dolphinfish	
Wahoo	
Vermilion snapper	
Gag grouper	
Goliath grouper	

Section IV. Personal experience and attitude

The following questions want to understand your experiences with and attitude towards the topic of cooperative research.

15. Have you ever participated in a cooperative research project dealing with a fisheries related topic?

- Yes No

If yes, please provide a brief description of the project(s) in one or two sentences.:

16. Are you interested in participating in future cooperative research projects?

- Yes No

17. How important is it to you that the data collected during cooperative research projects is used in management decisions (stock assessments, etc.)?

- Very Important Important Neutral Not Important Not Important At All

18. In order for data generated from cooperative research programs to be used in management, scientists require fishermen to follow formal rigorous scientific data collection protocols. This ensures that everyone involved in the research is collecting data the same way. If you were participating in a cooperative research study, would you be willing to follow this type of protocol?

- Yes No

19. Stock assessment scientists rely heavily on fisheries-independent surveys when possible. An emerging trend is to use recreational and commercial fishermen to carry out these standardized surveys from private vessels. In most instances, fishermen are compensated and scientists or observers would be onboard and dictate when, where and how to fish (specific gear, hook types, etc.). Do you support this concept?

- Yes No

Section V. Research costs

The following questions want to understand your attitude towards the topic of cooperative research costs.

20. On average, from 2007 to 2011, \$1.6 million dollars annually has been used to fund NOAA Cooperative Research Program (CRP) projects from NC to Texas including the Caribbean. On average, 8 projects per year are funded through this program. Please respond to the following statement: "More funding should be devoted to cooperative research in the Southeast US."

- Strongly Agree Agree Neutral Disagree Strongly Disagree

21. Cooperative research, particularly at-sea data collection, is expensive. Do you support the concept of the fishing industry cost-sharing in the research process? An example of cost-sharing would be some donation by the fisherman of vessel time (sea-days) or goods (fuel, bait, etc.) to ensure that a research project is successful.

- Strongly Agree Agree Neutral Disagree Strongly Disagree

22. In some fisheries, the fishing industry will pay for their own cooperative research and/or marketing activities. This is often through an industry wide membership fee or self-imposed tax. Assuming there was a mechanism to collect and utilize these funds for research, how do you feel about this concept?

- Strongly Agree Agree Neutral Disagree Strongly Disagree

23. The Mid-Atlantic region allocates a small portion of selected fishery's annual quota (0 to 3%) as a vehicle to fund research projects. Participants conducting the research are allowed to sell the landings to "fund" the project. This system, termed Research Set Asides (RSA) is not currently used in the Southeast. Is this concept something that the Southeast should explore?

- Strongly Agree Agree Neutral Disagree Strongly Disagree

Section VI . Communication

The following questions want to understand your attitude towards the topic of cooperative research outreach and information transfer.

24. Did you know that SAFMC staff with assistance from Sea Grant and others developed a guide for cooperative research in the South Atlantic region and that this free publication can be obtained by contacting the SAFMC office?

- Yes No

25. Did you know that the NMFS Northeast Fisheries Science Center developed a comprehensive guide for fishermen on the ins-and-outs of cooperative research, including how to get involved with the process?

- Yes No

26. Which communication tools do you use to receive information about fisheries management issues?

- Cell phone Websites Talk with other fishermen
 Email Mail Other _____
 Fax Newspaper

27. What is the best way to notify fishermen about cooperative research opportunities and research results? Direct mailings to individuals are not typically an option because of time and expense involved.

Answer: _____

28. Would you consider providing an email address to a university based organization such as Sea Grant so that we could more easily disseminate research findings?

- Yes No

29. Do you think that results of completed projects should be accessible to the public? For example, posted on the internet after completion, similar to what the Gulf and South Atlantic Foundation does with its project reports)?

- Yes No

Section VII. Connect with researchers and Sea Grant staff

30. Every year, researchers team up with fishermen in the South Atlantic to collaborate on cooperative research projects involving Snapper Grouper species. The purpose of these projects is generally to gather basic information on the fishery or test new concepts, like for example, electronic monitoring. Researchers are always looking for more fishermen to be a part of the process. Likewise, Sea Grant is looking for easier ways to share this type of information with the fishing industry. If you would like to provide your contact information, please do so here and we can begin to assemble a list of Snapper Grouper permit holders, fishermen and dealers interested in cooperative research. We will not associate your contact information with your survey responses. This list will be provided to individuals and organizations that are actively involved in cooperative research in the South Atlantic region.

Name:	
Street Address:	
City:	
State:	

Appendix C: Survey Instrument

Zipcode:	
Phone:	
Email:	
Vessel Name:	
Home port:	
USCG Doc #:	

31. Would you like to be emailed the results of this survey when it is complete?

Yes No

If Yes, please provide email address: _____

We thank you in advance for taking the time to complete this survey.

Appendix D: Raw Survey Responses

SA SG cooperative research













1. Please indicate the South Atlantic Snapper Grouper permit type(s) that you currently possess.

		Response Percent	Response Count
SG Unlimited		73.0%	84
SG 225 pound		19.1%	22
SG Dealer		12.2%	14
answered question			115
skipped question			3






2. If you selected "SG unlimited" permit in the previous question, please indicate the number of these permits associated with your business.

		Response Percent	Response Count
1		77.8%	70
2		8.9%	8
3		5.6%	5
4 or more		7.8%	7
answered question			90
skipped question			28



3. What state is your business licensed and located in?			
		Response Percent	Response Count
NC		20.7%	24
SC		8.6%	10
GA		0.9%	1
FL		68.1%	79
Other		1.7%	2
	Other (please specify)		0
answered question			116
skipped question			2

4. In addition to Snapper Grouper, what other fisheries do you participate in? Check all that apply.			
		Response Percent	Response Count
Atlantic Dolphin / Wahoo		84.8%	95
King mackerel		64.3%	72
Spanish mackerel		58.0%	65
South Atlantic Charter for Snapper Grouper		19.6%	22
Atlantic Charter headboat for Dolphin / Wahoo		17.9%	20
Gulf of Mexico reef fish		9.8%	11
Spiny Lobster Tailing		17.0%	19
Commercial Spiny Lobster		32.1%	36
Shark Directed		6.3%	7
Shark Incidental		8.0%	9
	Other (please specify)		5
		answered question	112
		skipped question	6



5. How many years have you been involved in the Snapper Grouper commercial fishery?

		Response Percent	Response Count
0		0.0%	0
1-5		8.7%	10
6-10		3.5%	4
11-15		10.4%	12
16-20		11.3%	13
21 or more		66.1%	76
answered question			115
skipped question			3


6. Would you like to see additional cooperative research done testing and evaluating at-sea EM systems?

		Response Percent	Response Count
Yes		36.4%	40
No		63.6%	70
Comments			37
answered question			110
skipped question			8

7. While EM can be used to collect all catch data, the study found that it can also be an effective tool for auditing self-reporting logbooks. Do you support the concept of using a third-party data review method like EM to validate logbook records?

		Response Percent	Response Count
Yes		23.6%	26
No		76.4%	84
	Comments		31
	answered question		110
	skipped question		8

8. The video processing company we used suggested adopting standardized guidelines for handling fish while fishing (keeping and discarding fish) to make video review quicker and more cost effective. Examples of guidelines could be briefly holding all fish up to the camera for 3 seconds or placing discarded fish on a centrally located discard chute (sloped platform hanging over side of boat) on the back deck to release all discards within camera view. If EM is continued to be tested and considered for a monitoring tool, do you support the adoption of standardized handling guidelines to improve the video review process?

		Response Percent	Response Count
Yes		23.8%	25
No		76.2%	80
	Other (please specify)		30
	answered question		105
	skipped question		13







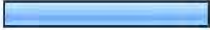


9. While actively bottom fishing (i.e., making more than a few test drops), do you typically turn off the engine or do you keep the engine running?

		Response Percent	Response Count
Usually turn engine off		50.0%	54
Usually leave engine on		24.1%	26
Combination of engine on/off		20.4%	22
Other		5.6%	6
	Comments		22
answered question			108
skipped question			10

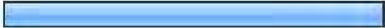


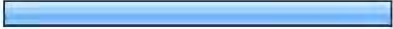
10. On your vessel, what type of batteries do you use for your “house” bank? This bank of batteries would power auxiliary equipment like electric bandits, plotters, radios, lights, etc.

		Response Percent	Response Count
Lead-acid batteries		85.0%	91
Gel batteries		8.4%	9
Other		6.5%	7
	Comments		22
answered question			107
skipped question			11



11. The National Marine Fisheries Service Cooperative Research Program priorities for "Finfish" are listed below. Please pick 2 topics which you feel are the most important data needs from this list. You will have the opportunity to add topics later in the survey.

		Response Percent	Response Count
Efforts to characterize the total catch of the commercial fishery		32.6%	30
Efforts to characterize discards and determine discard mortality rates for important species		30.4%	28
Efforts to evaluate electronic log books (ELBs) for fishermen to record data at sea		5.4%	5
Use of observers or electronic monitoring to obtain life history information on important species		5.4%	5
Determination of fish age through collection of hard parts (otoliths, spines, etc.)		26.1%	24
Evaluation of generic methods for use in tag and recapture studies		5.4%	5
Develop consistent sampling methodologies to document relative abundance over time		32.6%	30
Marine ecosystem modeling of food webs, trophic structure and recruitment in the Gulf of Mexico		7.6%	7
Document and utilize the knowledge of fishermen to identify spawning aggregations		51.1%	47
		answered question	92
		skipped question	26

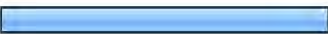

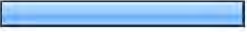










12. The National Marine Fisheries Service Cooperative Research Program priorities for "Economics" are listed below. Please pick 2 topics which you feel are the most important data needs from this list. You will have the opportunity to add topics later in the survey.

		Response Percent	Response Count
Document changes in fishing costs as other factors change (regulations, quotas, etc.)		60.2%	56
Development of economic incentives to reduce bycatch		34.4%	32
Fishing capacity investigations: Fleet size vs. productivity of regional stocks		25.8%	24
Social and economic impacts of Marine Protected Areas and area closures		61.3%	57
		answered question	93
		skipped question	25



13. Do you have research recommendations that you would like to add to the above list?

		Response Percent	Response Count
Yes		36.1%	35
No		63.9%	62
		If yes, please list:	42
		answered question	97
		skipped question	21



14. The following species have been identified as in need of additional data to help in stock assessments. Please indicate only those species you are most knowledgeable about.

		Response Percent	Response Count
Greater amberjack		52.3%	46
Red snapper		47.7%	42
Grunts (all)		38.6%	34
Scamp		33.0%	29
Wreckfish		10.2%	9
Snowy grouper		34.1%	30
Hogfish		33.0%	29
Red pogy		34.1%	30
Dolphin		55.7%	49
Wahoo		36.4%	32
Vermilion snapper		45.5%	40
Gag grouper		68.2%	60
Goliath grouper		33.0%	29
		answered question	88
		skipped question	30






15. Have you ever participated in a (fisheries) cooperative research project?

		Response Percent	Response Count
Yes		38.9%	42
No		61.1%	66
If yes, please provide a brief description of the project(s) in 1-2 sentences:			39
answered question			108
skipped question			10



16. Are you interested in participating in future cooperative research projects?

		Response Percent	Response Count
Yes		43.8%	46
No		56.2%	59
answered question			105
skipped question			13



17. How important is it to you that the data collected during cooperative research projects is used in management decisions (stock assessments, etc.)?

		Response Percent	Response Count
Very Important		35.8%	38
Important		26.4%	28
Neutral		23.6%	25
Not Important		6.6%	7
Not Important At All		7.5%	8
answered question			106
skipped question			12






18. In order for data generated from cooperative research programs to be used in management, scientists require fishermen to follow formal rigorous scientific data collection protocols. This ensures that everyone involved in the research is collecting data the same way. If you were participating in a cooperative research study, would you be willing to follow this type of protocol?

		Response Percent	Response Count
Yes		61.6%	61
No		38.4%	38
Comment field			16
answered question			99
skipped question			19

19. Stock assessment scientists rely heavily on fisheries-independent surveys when possible. An emerging trend is to use recreational and commercial fishermen to carry out these standardized surveys from private vessels. In most instances, fishermen are compensated and scientists or observers would be onboard and dictate when, where and how to fish (specific gear, hook types, etc.). Do you support this concept?

		Response Percent	Response Count
Yes		59.8%	64
No		40.2%	43
	Comment		8
	answered question		107
	skipped question		11






20. On average, from 2007 to 2011, \$1.6 million dollars annually has been used to fund NOAA Cooperative Research Program (CRP) projects from NC to Texas including the Caribbean. On average, 8 projects per year are funded through this program. Please respond to the following statement: “More funding should be devoted to cooperative research in the Southeast US.”

		Response Percent	Response Count
Strongly Agree		30.3%	33
Agree		16.5%	18
Neutral		30.3%	33
Disagree		8.3%	9
Strongly Disagree		14.7%	16
	answered question		109
	skipped question		9

21. Cooperative research, particularly at-sea data collection, is expensive. Do you support the concept of the fishing industry cost-sharing in the research process? An example of cost-sharing would be some donation by the fisherman of vessel time (sea-days) or goods (fuel, bait, etc.) to ensure that a research project is successful.

		Response Percent	Response Count
Strongly Agree		7.4%	8
Agree		12.0%	13
Neutral		23.1%	25
Disagree		22.2%	24
Strongly Disagree		35.2%	38
	Comments		10
	answered question		108
	skipped question		10



22. In some fisheries, the fishing industry will pay for their own cooperative research and/or marketing activities. This is often through an industry wide membership fee or self-imposed tax. Assuming there was a mechanism to collect and utilize these funds for research, how do you feel about this concept?

		Response Percent	Response Count
Strongly Agree		5.6%	6
Agree		5.6%	6
Neutral		35.2%	38
Disagree		23.1%	25
Strongly Disagree		30.6%	33
		Comment	7
		answered question	108
		skipped question	10



27. What is the best way to notify fishermen about cooperative research opportunities and research results? Direct mailings to individuals are not typically an option because of time and expense involved.

	Response Count
	91
answered question	91
skipped question	27











28. Would you consider providing an email address to a university based organization such as Sea Grant so that we could more easily disseminate research findings?

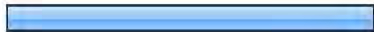

		Response Percent	Response Count
Yes		64.5%	69
No		35.5%	38
	answered question		107
	skipped question		11

29. Do you think that results of completed projects should be accessible to the public? For example, posted on the internet after completion, similar to what the Gulf and South Atlantic Foundation does with its project reports)?

		Response Percent	Response Count
Yes		83.0%	88
No		17.0%	18
	answered question		106
	skipped question		12

30. If you would like to provide your contact information, please do so here and we can begin to assemble a list of Snapper Grouper permit holders, fishermen and dealers interested in cooperative research. This list will be provided to individuals and organizations that are actively involved in cooperative research in the South Atlantic region.

		Response Percent	Response Count
Name		98.2%	54
Street Address		96.4%	53
City		96.4%	53
State		96.4%	53
Zipcode		96.4%	53
Phone		90.9%	50
Email		78.2%	43
Vessel Name		90.9%	50
Business Name		10.9%	6
Home Port		89.1%	49
		answered question	55
		skipped question	63

31. Would you like to be emailed the results of this survey when it is complete?			
		Response Percent	Response Count
Yes		58.8%	60
No		41.2%	42
	If Yes, please provide email address		61
		answered question	102
		skipped question	16

Page 2, Q4. In addition to Snapper Grouper, what other fisheries do you participate in? Check all that apply.

1	Commercial Spiny Lobster -Diver	May 17, 2012 9:29 AM
2	Stone Crab	May 17, 2012 8:28 AM
3	Stone Crab	May 15, 2012 1:32 PM
4	Stone crab	May 7, 2012 10:12 AM
5	Other	Apr 26, 2012 12:37 PM

Page 3, Q6. Would you like to see additional cooperative research done testing and evaluating at-sea EM systems?

1	Should be based on the results of the self reported data accuracy. Your results indicate the fishermen's self reports were not as accurate as observer data was accurate enough to use for management.
2	Technology does not solve bad government policy it just increase costs
3	Not for us, not reasonable to keep records on a center console.
4	Not necessary in small boat with one or two people. May be beneficial in larger boats.
5	We have not been actively fishing this permit.
6	I operate a small day boat. I do not see how cameras would work on a 26' charter console boat.
7	They have already done a study
8	EM systems would be an invasion of privacy and against my constitutional rights. They are not needed and would be a waste of money & time to fishermen and each taxpayer!
9	Any additional costs to the fishermen will be catastrophic. Many are barely hanging on with sky-rocketing fuel, bait prices, etc.
10	Don't care we don't do any snapper or grouper. Bandit fishing only amberjack.
11	You are wasting our tax \$
12	It if does not add work or more beaurocratic effort by the fishermen!
13	I feel it will lead to additional costs if required by all fishermen.
14	Sure more tax money wasted to prove what (more data)
15	Because we done all your research and only hurts commercial fisherman
16	Strictly voluntary
17	Too expensive!
18	Too much time & money is & has been spent on fisheries mismanagement. STOP spending money the govt. doesn't have NOW.
19	Maybe pick a few cooperating boats - but the fleet is varied we fish a 21 roster in front of our house
20	This is about the only way to get data that is correct
21	Permitted fishermen don't need monitoring enforcement should physical - patrols
22	Yes. It helps the science that everyone says seem to be lacking.

Page 3, Q6. Would you like to see additional cooperative research done testing and evaluating at-sea EM systems?

23	We can't depend on NOAA information, the environmental groups control NOAA.
24	Only to help set limits
25	If it was voluntary, but gov't required electronic monitoring is an invasion of privacy.
26	We are required to maintain log books.
27	Too expensive. someone still has to watch hours of video to determine catches & discards.
28	I would love to research done that isn't one sided and when were right I would like to see it come out
29	We are too restricted on what we can catch & sell and therefore our industry is dying. However, if we were permitted to keep restricted out of season fish then our participation would be forth coming. You must provide an incentive to the commercial fishermen in order to have an effective program.
30	Cooperative not forced is the key word
31	As a longtime commercial SA snapper/grouper bandit fishermen it seems like just another hardship for us to endure by a South Atlantic Council, who disregards our economical hardships!!
32	Only if it doesn't interfere with operations
33	There are much better ways to allocate limited funding.
34	I just have problems with fisherman having to pay for the EMS.
35	MOST OF MY FISHING FOR SNAPPER & GROUPE R CAME AS INCIDENTAL CATCHING WHEN I WAS KINGFISHING
36	Cost the fisherman money and time.
37	MORE RESEARCH EQUALS MORE RESTRICTIVE RULES.

Page 3, Q7. While EM can be used to collect all catch data, the study found that it can also be an effective tool for auditing self-reporting logbooks. Do you support the concept of using a third-party data review method like EM to validate logbook records?

1	Concept is vald. Are the data improvements worth the investment in cameras?
2	invasion of privacy
3	Too much beauracrates
4	Don't think it would be effective on our boat.
5	I personally take great care to accurately fill out my logbook.
6	EM is the same as an ankle monitor for a convicted criminal. I have not committed a crime and do not want to pay for EM.
7	Log book is good enough
8	Logbook reporting should not require validation. You doubt the word of the fishermen blatanty with this concept!
9	Absolutely Not!
10	Get the fish stock situation straight first.
11	We don't cheat on our logbooks; I was unaware that more "accuracy" is needed.
12	I am a commercial diver. I have no by-catch.
13	Here in Florida the catch is recorded by the fish house and then NOAA makes the fisherman report the same data!!! (waste of money reporting twice) but the Florida government is a money pit.
14	No comment
15	Every time I go fishing I complete the logbook according to your instructions. Why do you question that has been done with fidelity.
16	unnecessary
17	Sell our GPS No#s Perhaps?
18	In the discards maybe, but it would be difficult to be accurate on a vessel with 4 or people. Observers have a hard time counting, let alone a captain fishing and having to count.
19	What happens if you don't fit the profile?
20	With NOAAs past record of using fishermans data it would be complete waste of time and money.
21	Cannot express how strongly, I and every fisherman I have talked to, disagrees with this electronic monitoring. Not sure what rock you found a commercial fisherman under that would think EM is a good idea but I know of none.

Page 3, Q7. While EM can be used to collect all catch data, the study found that it can also be an effective tool for auditing self-reporting logbooks. Do you support the concept of using a third-party data review method like EM to validate logbook records?

22	Yes, but it can be very expensive compared to the value of the fish on any given trip so it may not be practical financially.
23	It is self explanatory.
24	Use trip sales tickets
25	Too expensive
26	It sounds like more paper work and I think logbooks suck. All that info can be gotten from tip tickets
27	I'm really not sure yet
28	I oppose forced video monitoring of ANY private property. We should look at ways to limit regulatory discards rather than ways to accurately count them.
29	We need accurate data to provide a better means of making our laws.
30	I fill my own log books.
31	3RD PARTY MEANS MORE RED TAPE!

Page 3, Q8. The video processing company we used suggested adopting standardized guidelines for handling fish while fishing (keeping and discarding fish) to make video review quicker and more cost effective. Examples of guidelines could be briefly holding all fish up to the camera for 3 seconds or placing d...

1	N/A
2	I suppose.
3	Absolutely not! 3 minutes per fish w/2000 lbs @ 2 lbs each would equal fifty (50) HRS of time!!! Time is money fishing --- ie:3" @ = 33 hrs 4# @ = 25 hrs 5# @ = 20 hrs. We do not even fish 50 hrs a trip!
4	Take too much time
5	Again, cost prohibitive.
6	We are working and don't have time to when we are catching yellowtail some days we catch 1,000 fish should we hold everyone up
7	Time is \$ you are stealing
8	What about also including a fisherman comment as "Releasing one undersize gag grouper". Would require audio.
9	This adds burden to the fishermen. Many things can be done in offices; must NOT in 8" seas.
10	I highly disapprove of any such nonsense.
11	BIG JOKE. What will that prove? Of course the video company wants this! Is this free or are they profiting off this? Are you serious. We are American citizens NOT OUTLAWS.
12	We don't have time
13	No comment
14	I have such a small discard rate, next to nothing, that I feel this would be something that I can not afford and would not provide new information.
15	This is ridiculous - we do not touch fish we discard yellow tail are loaded with spores that will get you
16	Why not put a Go Pro on my forehead?
17	Fishing is a high speed job, slowing people down is wrong to me, also sooner the fish is returned the better abd better not to even handle the fish too.
18	My vessel is to wet for electronics I have no way to get away from weather!
19	What will be next, we as fisherman already have enough guidelines we are the most regulated fleet in the world.
20	This suggestion is disgusting and ridiculous. EM is disgusting and ridiculous. It is a violation of our civil rights. Whoever is conducting this survey should be embarrassed to have anything to do with this.

Page 3, Q8. The video processing company we used suggested adopting standardized guidelines for handling fish while fishing (keeping and discarding fish) to make video review quicker and more cost effective. Examples of guidelines could be briefly holding all fish up to the camera for 3 seconds or placing d...

21	NO, Forcing fishermen to modify the way they handle fish could be counter productive and often not practical depending on the species , weather and other factors.
22	You should review the catch data (logbook).
23	I think we need one permit in the Keys and let us fish until the quota is filled and shut us off.
24	You are out of your mind, time doesn't allow for this, if you want to make money.
25	This seems logical and fairly easy
26	Once again more hardship for us to endure with little or no assurance we will be rewarded in any way, shape, or form.
27	Holding fish up to the camera for 3 seconds will greatly increase the chance of injury to both the fish and fishermen. We should move toward zero discard fisheries by properly managing our quotas. That would negate the need for discard chutes and Orwellian cameras.
28	The fisherman deal with so many situation during the day I think u need a better EMS (more cameras, etc)
29	More bull.
30	TIME LOST FOR HANDLING COSTS ME MONEY!

Page 3, Q9. While actively bottom fishing (i.e., making more than a few test drops), do you typically turn off the engine or do you keep the engine running?

1	Fuel costs are making leaving your engine off a necessity
2	Do mostly trolling
3	N/A
4	My engine runs my hydraulic reels.
5	we are a daelers not a vessel operator.
6	Reef fishing engine off at fishing leave running for hydro reels
7	Depends on type of activity.
8	I run a 20 foot boat completely open to the elements this would not last long on my salt exposed boat.
9	At anchor engine off / Drift on power fish engine on.
10	I don't deep drop
11	A starter only has an expected life
12	I am a fish dealer (at the moment)
13	Always turn off, I have two engines, two alternators, and separate battery banks. My boat had no problems with the EM systems.
14	Don't fish with hook & like - traps only
15	not a fisherman
16	Put enough monitoring devices on our boats & turn the engines off & they won't restart: VMS more important than bilge pumps!?!?
17	N/A
18	Note: Outboard boats cuts engine off. My diesel boat keeps engine running.
19	Combination of on/off
20	I HAVE TWIN O/B TURN ONE OFF
21	I turn the engine off at night.
22	Save fuel.

Page 3, Q10. On your vessel, what type of batteries do you use for your “house” bank? This bank of batteries would power auxiliary equipment like electric bandits, plotters, radios, lights, etc.

1	2-4Ds	Jul 6, 2012 12:02 PM
2	N/A	May 29, 2012 11:22 AM
3	I do not have separate batteries for equipment.	May 29, 2012 9:29 AM
4	Better service	May 29, 2012 9:13 AM
5	Also use gel batteries	May 22, 2012 8:50 AM
6	AGM	May 21, 2012 6:21 AM
7	Every thing	May 17, 2012 12:03 PM
8	Deep cycle	May 17, 2012 11:41 AM
9	2 - 4D	May 17, 2012 9:10 AM
10	2 8D Batteries - No Generator	May 17, 2012 8:29 AM
11	Good question on our little boat you will kill our reserve power	May 10, 2012 1:22 PM
12	5 8d on house bank	May 10, 2012 1:10 PM
13	8 D's - VMS kills batteries	May 10, 2012 12:56 PM
14	Fiberglass mod batteries	May 10, 2012 11:38 AM
15	n/a	May 10, 2012 11:29 AM
16	A \$10,000.00 genset is mandatory to keep up battery banks.	May 10, 2012 11:06 AM
17	2 D-8 batteries 12 volt system	May 7, 2012 1:22 PM
18	N/A	May 7, 2012 1:19 PM
19	5	May 7, 2012 1:02 PM
20	8-D's	May 7, 2012 12:49 PM
21	electronic reels need batteries of which need to be changed by an alternator.	May 7, 2012 9:22 AM
22	I do not want to waste any of my battery power or give up any of my privacy to big brother's all seeing eye. Do you want a spy camera in your car to make sure you are obeying the law?	Apr 29, 2012 4:19 PM

Page 4, Q13. Do you have research recommendations that you would like to add to the above list?

1	Characterization of king mackerel spawning off Jupiter. Survival rates of warsaw and speckled hind.
2	RULES ARE TO COMPLEX AND CHANGE TO OFTEN !!!!! regulate fish sales at wholesale level for compliance not fishermen!!! ie grouper closed and cannot sell fisherman is not going to fish for them easy!
3	Combine 1 and 2 into one choice. I think 2 is equally important. With only 2 choices and three equally important issues, I had to chose.
4	I feel that commercial boats could give a "daily" or "trip" count. I feel that recreational boats would generally not tell or just not be responsible. There no way to quantify rec. boats bycatch. I have already heard of a negative story about somebody connected to SAFMC, had cameras/patron onboard getting paid for this. A good friend (charter captain) that fishes/charters more than others was unable to get connections for monitoring. I am much more impressed with research/assessments by Craig Andreis/Jim Atack for Sea Grant. Craig has seen grouper "stacked stupid" on ledges when we are above, can't get a bite. That leads one to believe there are no grouper. Underwater cameras/direct counting I feel won't lead to better assessments.
5	Research & develop dayboat catagorize a group of outboard boats 6X157 which return home every day we provide fresh seafood sold at local markets!!
6	Amberjack fine They raise grunts 1000-1200
7	Publication of programs through local media on a regular basis.
8	EM not feasible on small (i.e. trailer) boats small open day boat not capable for EM
9	By catch of shrimp boats especially in bays and areas where there is abundant juvenile snapper grouper species.
10	Better stock assessments (underwater cameras, divers, etc.)
11	Send out surveys to fisherman to report by-catch of certain species each trip. Use video cameras on reefs to help monitor fish stocks for given areas. Use bottom longlines for research purposes to research fish stocks for certain areas and species. Why haven't Red Snapper been opened yet? Duh! Get your head of of your asses.
12	"No one should be allowed to work in an office in Fisheries Mgt unless they have a) commercial fished on a boat at least 100 days and b) survived storms 3 times producing 15' to 20' seas and 1 day of losing at least 1 engine."
13	Black Sea Bass populations are out of control. This fish are devouring the food source for grouper and willsoon ruin our grouper - snapper fishery. Please open Bass and leave it open.
14	Broaden your scope and include divers in evaluating stocks. Where down with the fish we are better able to give better sample parameters when evaluating population movements.

Page 4, Q13. Do you have research recommendations that you would like to add to the above list?

15	U.S. government fisheries management funds wasted to put American fisherman out of business. X Waste of U.S. funds to collect data from fisherman two or three times (trip logs (1) State trip sales tickets (2) fish house reports landings (3). Now expensive electronic cameras to record! Smile for the video? X
16	Yes. Listen to fisherman instead of the environmental groups, or do they give you money to.
17	Not Presently. Lobster/Stone crabbing consists of 95% of my commercial fishing effort.
18	Note: I am not opposed to cooperative research. We are not good candidates however, as currently we are not engaged in full-time fishing.
19	Shark research Jupiter FL has more sharks than I have seen in over 20 years.
20	Tag of tilefish for movement studies. Assessment of stocks and growth.
21	Yellow tail snapper distribution and spawning issues
22	I already have VMS for the Gulf. EM will never replace an observer. We need patrols on the water - more physical enforcement. The poaching by rec fisherman and illegal sales is huge.
23	Provide for seasonal probations instead of total shutdowns
24	MPA's productivity towards rebuilding the stock and quantifying for stock assessments.
25	Tag BSB in Nov - April east of Cape Lookout for genetic profiling.
26	remove politicians
27	Alot of illegal boats commercial fishing because of lack of funds to enforce laws some kind of electronic unit that you can give real commercial fisherman that law enforcement can just "beam" instead of inspecting each boat. Until something is done you will never have a true figure on fish population.
28	Video the realistic red snapper catch & present to NMFS regulating committee. Even then, I doubt they'd figure it out!
29	I cannot answer some of these questions because I may mean one thing but you will take it to mean another. Not sure about some of these cooperative research questions but I want to make sure to get across one main thing.... COMMERCIAL FISHERMEN DO NOT WANT ELECTRONIC VIDEO MONITORING
30	Put observers on a boat and let the captain show where and how to target certain species of fish.
31	Do a survey on the economics of what it would cost NOAA to do a permit buy back. Alot of fisherman would exit for cost recovery of permit and some vessel recoup: it would be interesting to get an avg of what the answers would be.

Page 4, Q13. Do you have research recommendations that you would like to add to the above list?

32	Spend less money. Let us fish.
33	Discards are a waste of resource count all fish caught. Discards are usually dead or dying or eaten by sharks, etc.
34	This is another example of taxpayers dollars wasted because someone wants to "show" they are doing their job. Waste! Audit fish house sales & purchases, verify sales receipts. How can EM be economically feasible. Another example of government ideas that are not well thought out, and waste money.
35	I think trying to manage from Texas, Florida, to South Carolina with one set of rules is a joke and the Keys should be treated differently.
36	Do think any of this is important. If NOAA would not have issued so many permits we wouldn't have all these problems!
37	Track fish survival after released closers effect all segments, however, releasing fish may not add to the stock as originally intended. The fisherman can not select what baits the bait.
38	More studies on recreational studies on fish caught. Recreational fish caught 75% commercial fish 25%. Not Good.
39	I feel that the implementation of this regions drastic measures as far as closing down (completely) an otherwise thriving fishery, due to insufficient scientific data (stock assessments, etc) leaves me with the impression that this persistence to (get research right) is to slow in coming and has cost many fishermen as well as myself. And therefore I have lost confidence in the way you people make judgement calls.
40	The key in snapper-grouper fishing is the bait quantity and a course feeding those species with bait (CHUM) Like minnows, pilchards, etc. after the "Deep Horizon" oil spill in the Gulf of Mexico, we the commercial snapper-grouper fishermen, have been affected by this tragedy. After the spill in 2010, we haven't been able to catch & bait nor buy it, in order to perform our fishing. If we can't get chum and bait, we will have to retire from this type of operation. Please Investigate!!
41	1. SG Stock assessments compared to 40 years ago when I began fishing 2. Potential for changes in reef fish dynamics caused by the use of power chumming in the FL Keys.
42	We should research zero discard fisheries. I would love to take part in that kind of cooperative research and would even VOLUNTER to take an observer on my boat.

Page 5, Q15. Have you ever participated in a (fisheries) cooperative research project?

1	In 08 I caught fish (Striped Bass) for the NYSDC for mercury sampling - due to my present age that would not be a viable option for me.
2	I take surveys and send in accurate fish logs
3	Amberjack
4	NC FRG - "Fishing, Catching & Holding Live Seafood" 1993-1994 NC Aqua Estuare Development Conferences
5	Taking observer onboard for Red Porgy research; of which he got tired and mad at having to measure so many red porgies & began stomping them.
6	We have took the observer out
7	Amberjack spawning areas for South Carolina off Miami & Keys
8	Log books
9	Worked for years with Mote Labs in red snapper & grouper tagging projects.
10	Gag grouper to scientists for ear bone analysis. Discard log to NMFS.
11	Only by paperwork
12	We tagged 100 juvenile grouper and sent information to South Carolina office, about 2005.
13	Longline survey of red snapper
14	Redsnapper longline survey
15	Testing different lobster trap designs with EWC. Taking observers collecting Spiny Lobster data.
16	South Atlantic log book and discard log book.
17	Red Snapper longline study 2010 and sandbar research 2010, 2012 and 2012
18	Lobster leg sample in the State of Florida of East Coast. 1 year study on undersized Gap grouper, Red Grouper, Scamp Grouper, Black Grouper
19	Water sampling - spoke with Black grouper people
20	Research - Aerial Mutton Snapper. Spawn - collection of samples - ID of locations explain conditions needed for successful spawn.
21	Gutted research with NCDNR, Red Snapper fish sampling with chip carrier, observer coverage with Gulf and SA Fishery Foundation. Red porgy reproduction cycle with UNCW, Red Snapper stock assessment, Black Sea bass stock assessment, and vessel video monitoring with Sea Grant.
22	Read the CRP results

Page 5, Q15. Have you ever participated in a (fisheries) cooperative research project?

23	I tagged and released gag and amberjack for the State of S.C. in the 1990's some of fish tagged were caught off of Florida and moved from S.C.
24	In the Gulf of Mexico, tagging trips, observers, electronic log books for catch & discards, deck surveys (daily) measuring fish length, weights, age, customer surveys by FWC.
25	em research It was a good project but the captains had trouble with keeping the gear working. It was probably captain error instead of gear issues.
26	Observer programs, spawning research on GAGS.
27	I feel the log books are enough.
28	EM on vessel C.J.R.
29	For Hire evaluations / charter feedback.
30	We tagged Kingfish in Tortugas with Ed Little years ago on the F/V G & D.
31	We permit NOAA observers to trip with us.
32	I have done projects with Tom Matthews on trap designs, movement studies, bycatch studies. We just completed work with UM and reef on lionfish catch.
33	Being the owner of three snapper/grouper boats, all of have both gulf reef and SA permits. I am constantly being picked for economic studies and discard studies.
34	Helped NOAA ID spawning aggregations
35	UNIVERSITY OF FLORIDA 2 YEARS -TAG STUDY TO SAMPLE STOCK ASSESSMENTS 2 YEARS UNIVERSITY OF SOUTH CAROLINA 2 YEARS
36	Electronic logbooks
37	Transferring giant Bluefin tunas to research boats in NC.
38	YELLOWTAIL SOLE SURVEY IN NEW ENGLAND (30 YRS AGO)
39	Trap testing for spiny lobster, bycatch testing for spiny lobsters.

Page 5, Q18. In order for data generated from cooperative research programs to be used in management, scientists require fishermen to follow formal rigorous scientific data collection protocols. This ensures that everyone involved in the research is collecting data the same way. If you were participating in...

1	N/A due to my age
2	I think the general consensus with fishermen is that SAFMC does not care what the assessments are ... they do what they want to do regardless!
3	Language barrier
4	I work 7 days a week. I don't have time
5	As long as fishing operations are not adversely affected.
6	Do not come out and do a study on Red Snapper and only fish public reefs/wrecks with chicken rigs and squid. Issue surveys to fisherman on the most productive ways to catch certain fish and then design the research study.
7	Already too many rules!
8	Possibly
9	Question 16 indicates I am not interested in participation so the question is moot.
10	Too much paperwork already!
11	Maybe, depends on what it is and if I could give input before I agree. Compromise.
12	If it doesn't cost me \$!
13	Depends on how it would make a difference. I am not in favor of doing something just to "show" we tried. it needs to be a legitimate practice or protocol.
14	Depending upon the procedures. Crew required monitoring takes away from productivity in a restricted enough commercial environment. However, if restricted species could be retained by boats allowing or participating in monitoring, then that is a give & take or win win.
15	I would follow reasonable protocols for research I supported as long as it did not jeopardize the safety of my boat or crew. This answer applies to 19 as well.
16	But Researchers have to realize fisherys r changing everyday and as a successful fisherman I have changed to make a difference.

Page 5, Q19. Stock assessment scientists rely heavily on fisheries-independent surveys when possible. An emerging trend is to use recreational and commercial fishermen to carry out these standardized surveys from private vessels. In most instances, fishermen are compensated and scientists or observers would...

1	Because scientist +/-or observers do not know how best to fish...or sample.
2	But I think the fisherman should show them where fish are at
3	So how do you make profit & feed children when office workers dictate your actions?
4	With input cooperatively
5	Maybe, depend what the conditions are.
6	I did this on 4/17/12 & the tagging biologist dictated we had to use rigs that had such large hooks that they couldn't catch anything. Let fisherman fish & observers observe!
7	The scientist needs to listen to the fisherman instead of vice versa.
8	Fishermen should dictate when & when & how to fish not observer

Page 6, Q21. Cooperative research, particularly at-sea data collection, is expensive. Do you support the concept of the fishing industry cost-sharing in the research process? An example of cost-sharing would be some donation by the fisherman of vessel time (sea-days) or goods (fuel, bait, etc.) to ensure tha...

1	Some amount (\$0.05 / lb) could be deducted from weekly statements to support cooperative research.
2	Regulations make this economically impossible for us.
3	You have already broke the industry with regulations this is crazy.
4	Depends on cost. Fishermen are barely making it as is.
5	Fishermen are not living well now; this would add burden
6	You've got to be kidding!
7	Reason because of comment in question 19, dictate when, where and how to fish.
8	Some can afford it others not.
9	Undercurrent conditions - there is little trip profit.
10	Fishermen should be consulted about the best way to get the data needed before any more research projects are planned.

Page 6, Q22. In some fisheries, the fishing industry will pay for their own cooperative research and/or marketing activities. This is often through an industry wide membership fee or self-imposed tax. Assuming there was a mechanism to collect and utilize these funds for research, how do you feel about this ...

1	We already do this to support industry scientists to attend stock assessments.
2	See above, if able to fish enough to afford, I would.
3	I feel it is communism honestly.
4	NOAA & NFMS are getting lots of taxpayer dollars and are pushing ENGO agendas. Reallocate funds first.
5	Under catch shares they do, but the scientists don't always use this data in stock assessments, I know.
6	Holy cow, how much more do you want from us?
7	Taxes should pay take it out of NMFS budget.

Page 6, Q23. The Mid-Atlantic region allocates a small portion of selected fishery's annual quota (0 to 3%) as a vehicle to fund research projects. Participants conducting the research are allowed to sell the landings to "fund" the project. This system, termed Research Set Asides (RSA) is not currently used...

1	Absolutely! Not selling the fish from a cooperative research is a waste of potential research dollars.
2	Not enough quota.
3	No! You have already cut off incomes 40% with the decreased quotas and closures!
4	Another tax.
5	YES! The discards could be sold to fund it! Why kill the fish & charge the Fisherman?! DUH!?
6	No No No
7	NOAA should stop diverting funds away from research and allocating them to catch share schemes. We could incorporate research and habitat enhancement by creating artificial reefs and marking them with data collection platforms. The platforms could be powered by wind, wave, tidal, and solar power. That would generate enough energy to run multiple video cameras 24 hours a day. We could raise funds for more reefs by charging a small fee to watch live video feeds and access other data being collected. The reefs could be MPAs that are enforced with video surveillance from the platforms rather than cameras on our boats.

Page 7, Q24. Did you know that SAFMC staff with assistance from Sea Grant and others developed a guide for cooperative research in the South Atlantic region and that this free publication can be obtained by contacting the SAFMC office?

- 1 I'm a SAFMC council member who has been involved with 2 CRPS did not know about these publications. Last year I was trying to get a sponsor for a king mackerel proposal and I could not find a co-sponsor.
- 2 I'm very involved from the science, to management, and the outreach.

Page 7, Q25. Did you know that the NMFS Northeast Fisheries Science Center developed a comprehensive guide for fishermen on the ins-and-outs of cooperative research, including how to get involved with the process?

- 1 I did not know this and I should have known about this publication.
- 2 Lots of management jobs, staff, state & federal beaurocracy!
- 3 My life is not about wondering what bureaucrats do all day and what new thing you've developed. I already know, you sit at your desk all day dreaming up new ideas on how next you can try and put us out of business.

Page 7, Q26. Which communication tools do you use to receive information about fisheries management issues?

1	radio	Jul 6, 2012 12:28 PM
2	Offer money and they will come.	Jun 13, 2012 6:43 AM
3	Advisory Panel member of SAFMC	Jun 4, 2012 1:51 PM
4	Television	May 29, 2012 11:27 AM
5	From Management > Fishermen > Mail	May 29, 2012 9:36 AM
6	VHF/NOAA broadcasts	May 17, 2012 10:08 AM
7	Fishery meeting	May 17, 2012 8:47 AM
8	I don't believe none of it!	May 17, 2012 8:43 AM
9	Local fishing organization	May 17, 2012 8:33 AM
10	Fish house owner also stays up to date on changes	May 15, 2012 1:37 PM
11	I call NOAA or whomever	May 10, 2012 1:25 PM
12	Council meetings, Advisory Panel member	May 10, 2012 12:03 PM
13	National Fisherman magazine, VMS, FWC.	May 10, 2012 11:16 AM
14	VHF Radio	May 7, 2012 1:15 PM
15	Newspaper	May 7, 2012 10:35 AM
16	Newspaper	May 7, 2012 9:46 AM
17	Newspaper	May 7, 2012 8:59 AM
18	NEWSPAPER	May 7, 2012 8:36 AM
19	NEWSPAPER - NATIONAL FISHERMAN	Apr 26, 2012 12:42 PM
20	Mailings are the best.	Apr 26, 2012 12:36 PM

Page 7, Q27. What is the best way to notify fishermen about cooperative research opportunities and research results? Direct mailings to individuals are not typically an option because of time and expense involved.

1	South Atlantic Update with mention of how to get involved in the process included in articles.
2	Email
3	Mail
4	Email
5	Fish houses/tackle stores/have a select group to notify other certain members.
6	Email
7	Cell phone or direct mail.
8	Text Message or Email
9	Mail
10	Info sent to Fish House / Dealers
11	Direct Mailings (alot of fishermen are not computer savvy still)
12	Email
13	Send it to fish house buyers
14	Email
15	Dockside information
16	Mail and/or cell phone
17	Email
18	Hold meetings
19	Don't know
20	Email
21	Direct Mail
22	Don't know
23	Direct contact
24	Email
25	Email, newspaper
26	Email, text message

Page 7, Q27. What is the best way to notify fishermen about cooperative research opportunities and research results? Direct mailings to individuals are not typically an option because of time and expense involved.

27	Email & websites are cheap
28	Email
29	Internet
30	No comment
31	Email
32	Email
33	Email
34	Put notice in bulletin
35	save the trees & let us fish!
36	Websites
37	Email
38	Email
39	Mail
40	Email
41	Mail
42	Mall email
43	E-mail, text, call
44	E-Mail
45	Fish News (NOAA)
46	mailing and e mail , automated phone calls
47	email
48	Through the fish houses
49	Give dealers the literature to handout to fisherman
50	E-Mail
51	Through fish buyers
52	Fish houses, ask the owners who want to be involved or council meetings, fisherman there are concerned about the fishery.

Page 7, Q27. What is the best way to notify fishermen about cooperative research opportunities and research results? Direct mailings to individuals are not typically an option because of time and expense involved.

53	E-Mail
54	Mail
55	Call the dealer
56	?
57	Mail
58	E-Mail. Direct mail too expensive? Stuffed envelope & stamp it? Not that many permitted Fisherman!
59	Cell phone
60	E-Mail
61	E-Mail
62	Phone
63	e-mail and council websites.
64	Cell phone
65	Mail
66	Email
67	Website
68	Depends on the individual fishermen
69	Direct mail works. Much more money is wasted on other stupid ideas.
70	E-mail
71	Through local fishery organizations
72	No mail / don't notify
73	E-mail
74	Phone
75	Posting at fish sale point
76	E-Mail, phone, fishing organization OFF or FRCFA
77	Mail
78	Cell phone and websites

Page 7, Q27. What is the best way to notify fishermen about cooperative research opportunities and research results? Direct mailings to individuals are not typically an option because of time and expense involved.

79	Talk with fishermen or Mailing
80	Talk with other fishermen
81	MAILINGS
82	E-mail - almost everyone has an email
83	The fed. dealer they sell to should keep them informed
84	Get fishermen like myself in different areas to talk with other fishermen. The results should be posted online and sent to all available email addresses.
85	Emails and to directly communicate with individuals on phone
86	E-mail, text(cellphone)
87	EMAIL
88	I do not use a computer so thats out!
89	DIRECT MAIL
90	Web
91	email