South Atlantic Research and Monitoring Priorities 2009

I. Introduction

The 2006 reauthorization of the Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA) directs the Federal Regional Fishery Management Councils to develop a prioritized research plan for submission to the Secretary of Commerce. The following research and monitoring needs were developed by the South Atlantic Council in fulfillment of that requirement.

The goals of the South Atlantic Research and Monitoring Plan are:

1) to improve the quality and quantity of information available for stock assessment and management program development and evaluation; and

2) to encourage a proactive approach to fisheries monitoring and research with priorities based on management needs and intentions.

These goals can be fulfilled by achieving the following objectives:

- Obtain complete fisheries statistics (landings, effort, discards) for all managed resources.
- Obtain adequate landings characterization information (biological sampling of landings & discard, effort details) for priority species.
- Develop representative fishery-dependent abundance measures for priority species.
- Provide reliable and up-to-date species biology and life history information (reproduction, growth, habits, ecosystem role) for all managed resources.
- Obtain adequate economic and social characterization information for all fisheries.
- Obtain fishery and catch data necessary for the Council to monitor and evaluate its management programs.
- Document and quantify habitat usage and availability for all Southeast habitats.
- Develop robust yet documented and validated analytical models appropriate for South Atlantic resources, management requirements, and data availability.

II. SAFMC Prioritized Research Recommendations for 2010-2014

The South Atlantic Council recommends that the first priority is obtaining accurate fishery level information with increased spatial resolution for landings, discards, and effective effort. Research and monitoring programs must be designed to accommodate the multi-species nature of many South Atlantic fisheries.

Efforts should continue to design and implement MRIP to improve information available from the recreational sector which is increasingly a major catch source for many species.

Additional and extensive fishery-independent monitoring will be required in 2010 and beyond to address the potential time-area closures required to end overfishing of red snapper. While the need for greatly expanded fishery-independent monitoring is noted in every existing peer reviewed stock assessment, consideration of closures that will eliminate

fishery-dependent data sources further elevates the need for fishery-independent monitoring.

Additional effort should be devoted to sampling fisheries, such as the pot fishery, dive fishery, and golden tilefish longline fishery, which may potentially continue to operate in areas closed to general hook and line effort. Such sampling should be designed to collect representative biological samples from the landings and should include extensive observer coverage to monitor discards of red snapper.

To address the challenge of multi-species fisheries, the basic sampling unit should be a fishery rather than a species. To address the many managed species of the SAFMC, individual species are separated into two groups: those requiring 'basic' data elements and those requiring 'detailed' data elements. Initial classification into these two groups is based on stocks prioritized on the SEDAR assessment schedule, indicator species identified by the Council, those species included in NOAA Fisheries' Fish Stock Status Indicators listing in the Report to Congress, and recommendations of the SAFMC Science and Statistical Committee.

There are 6 general areas of research and monitoring identified for the South Atlantic, listed here in decreasing order of priority and discussed below in detail:

1) Collect basic fishery data for all managed fisheries.
2) Collect biological and survey information for priority species to support qualitative stock assessments.
3) Collect specific information to support evaluation and refinement of SAFMC management programs and actions.
4) Collect basic social and economic information to support management impact evaluations.
5) Collect general habitat information to support habitat protection efforts
6) Collect ecosystem information to support ecosystem management.

<u>1. Basic fishery data required for managed species</u>

The following information is required for all fisheries listed below:

- Complete catch and bycatch reporting by species
- Per unit (ie, tow, set, site, deployment, depending on the nature of the fishery) information from for-hire and commercial fisheries collected through onboard electronic logbooks linked to GPS
- license id information for all participants and vessels linked to trip and set reports
- Global participant frame provided through licensing of all participants
- Desired location elements include latitude, longitude, and depth

1. Shrimp Trawl Fishery

Per tow: duration, location, trawl details, catch estimate, discard estimate
Per trip: landings by species, trip costs, price paid per lb, # crew
Supplement: 5% observer coverage for discard, 20% coverage for detailed social & economic reporting.

2. Trap Fisheries (e.g., sea bass, golden crab, spiny lobster)
   Per trap/string: duration, location, trap details, catch estimate, discard count
   Per trip: landings by species, trip costs, price paid per lb, # crew
   Supplement: 2% observer coverage for discard, 10 % video discard coverage, 20% coverage for detailed social & economic reporting.

3. Dive or Spear Fisheries
   Per dive: duration, location, gear details, # divers, catch estimate
   Per trip: landings by species, trip costs, price paid per lb, # crew
   Supplements: 20% coverage for detailed social & economic reporting.

4. Handline Fisheries
   Per set/site: duration, location, gear details, catch estimate, discard count
   Per trip: landings by species, trip costs, price paid per lb, # crew
   Supplement: 5% observer coverage for discard, 10% video discard coverage, 20% coverage for detailed social & economic reporting.

5. Deepwater Longline Fishery
   Per set/deployment: duration, location, gear details, catch estimate, discard count
   Per trip: landings by species, trip costs, price paid per lb, # crew
   Supplement: 5% observer coverage for discard, 10% video discard coverage, 20% coverage for detailed social & economic reporting.

6. Pelagic Longline Fishery
   Per set/deployment: soak, location, gear details, catch estimate, discard count
   Per trip: landings by species, trip costs, price paid per lb, # crew
   Supplement: 5% observer coverage for discard, 10% video discard coverage, 20% coverage for detailed social & economic reporting.

7. Bottom Longline
   Per set/deployment: soak, location, gear details, catch estimate, discard count
   Per trip: landings by species, duration, trip costs, price paid per lb, # crew,
   Supplement: 5% observer coverage for discard, 10% video discard coverage, 20% coverage for detailed social & economic reporting.

8. Private Recreational
   Per trip: mode, location, gear details, duration, landings by species, discard by species, expenditures,
   Per Year: # trips by mode, location
   Supplement: Voluntary logbook for discard characteristics (e.g., size and reason for discarding), 20% coverage for detailed social & economic reporting.

9. Headboat Recreational
   Per set/site: location, duration, catch & discard estimate by species
   Per Trip: # anglers, # lines, duration, landings by species
   Supplement: 5% observer coverage for discard characteristics. Voluntary logbook for discard (size), 20% coverage for detailed social & economic reporting of owner/operators. 20% coverage for social & economic evaluations of participants.

10. Party/Charter Recreational Fishery
    Per trip: mode, location, gear details, duration, catch & discard by species
    Supplement: 5% observer coverage for discard characteristics. Voluntary logbook for discard (size), 20% coverage for detailed social & economic reporting of owner/operators. 20% coverage for social & economic evaluations of participants.

2. Collect biological and survey information for priority species to support quantitative stock assessments.

Detailed, species-specific information is required for species that support the bulk of fishery landings to enable high resolution assessment models (i.e., age structured models) that support direct management. This information should be collected for individual species, with sampling effort allocated across time, space, and the fisheries listed above as appropriate to ensure useful and statistically valid data.

For 2010 – 2014, the SAFMC places special emphasis on implementing fishery-independent monitoring programs for the snapper-grouper fishery that will allow evaluation of population status and management performance. This is a critical need at this time because the Council is considering extensive time and area closures to end overfishing of red snapper. These closures will eliminate the primary, fishery-dependent data sources that are now used for all South Atlantic snapper-grouper species stock assessments from a large portion of the fishery and could jeopardize future feasibility to adequately assess many species in the complex.

SAFMC Primary Data Collection Species:

vermilion snapper	yellowtail snapper
red snapper	gray triggerfish
snowy grouper	mutton snapper
tilefish	red porgy
red grouper	wreckfish
black grouper	king mackerel
scamp	Spanish mackerel
black sea bass	dolphin
gag grouper	spiny lobster
greater amberjack	golden crab
white grunt	spiny lobster

Additional Data Elements for Primary Species:

- Representative sampling by season, fishery, and area of length, age, sex, and weight for landed & discarded fish.
- Fishery-dependent CPUE, derived from increased effort resolution collected through the basic elements (1)
- Survey-based fishery-independent CPUE
- Life history research: rates of growth, mortality, maturity, fecundity
- Movement, migration, and stock structure evaluations

SAFMC Secondary Data Collection Species

blueline tilefish	Goliath grouper
cobia	little tunny
speckled hind	wahoo
Warsaw grouper	hogfish
yellowedge grouper	shrimp

Additional Data Elements for Secondary species:

- Fishery-dependent CPUE, based on increased effort resolution collected through the basic elements (1)
- Survey-based fishery-independent CPUE
- Life history details: rates of growth, mortality, maturity, fecundity
- Movements, migration, and stock structure evaluations

3. Collect specific information to support evaluation and refinement of SAFMC management programs and actions.

The Council has implemented some management actions that cannot be adequately evaluated with the information in the previous sections alone. This section also includes recommendations that affect collection and dissemination of the information desired above.

1. Full implementation of ACCSP in the South Atlantic.
2. Resolve confidentiality issues that prohibit reporting of, and access to, basic catch statistics by species, state, and year.
3. Eliminate duplicative programs such as paper logbooks which duplicate information provided in state trip ticket programs.
4. Restructure the FSSI stocks for the South Atlantic Council to include only those stocks listed in Section VI-2 above as target species.
5. Provide annual SAFE reports and 'Trends' reports for each FMP summarizing the data elements contained in Sections III.1 and III.2.
6. Resolve ongoing issues with recreational data collection; ensure that recreational statistics can be reported according to Council boundaries.
7. Reduce data dissemination delays by continuing to develop and implement automated and web-based data entry programs that can accommodate the set level information described above.
8. Monitor fish population abundance inside protected areas (Oculina Closed Area, MPAs)
9. Determine stock status for severely restricted species (Warsaw grouper, speckled hind and Goliath grouper) to enable the Council to evaluate its management program.
10. Develop education programs for all participants that stress the importance of accurate and timely reporting of fisheries data and improve species id for self-reported data.
11. Collect information on enforcement activities and develop statistics to enable the Council to objectively evaluate enforcement.

4. Improve Social and Economic Evaluations

Fishery and species specific monitoring information necessary for social and economic information is addressed in the previous sections. Recommendations that cross multiple fisheries or that represent research needs are listed here.

1. Determine recreational value.
2. Develop improved bio-economic models.
3. Develop models to test between different management scenarios
4. Develop methods to integrate socio-economic information with the management process
5. Evaluate the impacts of imported fisheries products.

5. Improve Habitat Evaluation and Documentation

Extensive habitat research and monitoring recommendations are detailed in various Council FMPs. The items listed here cross multiple FMPs and help support the Council's place-based management approaches for South Atlantic fisheries. These are research needs that should only need occasional updating once initially addressed.

1. Develop maps of and quantify available habitat and seasonal usage by target species.
2. Develop maps describing habitat types in proposed HAPCs.
3. Develop maps describing available habitat in proposed MPAs.

6. Improve Ecosystem-level information

The Council's Fishery Ecosystem Plan (FEP) will address many ecosystem level research and monitoring needs in detail. The primary short-term need is to implement robust monitoring programs to start building the long-term time series of information that is needed to evaluate ecosystem-level issues. These are both monitoring needs that need to be conducted annually.

1. Initiate a comprehensive survey of South Atlantic living marine resources
2. Develop long-term monitoring of diet, productivity, and species interactions as required for ecosystem-level modeling

III. Long Term Research Needs

The items listed above address the most critical needs in the South Atlantic and are considered to represent the minimum information required for adequate management. There are other needs that are less pressing and are therefore considered long-term. The same list of general issues is repeated for consistency.

1. Basic data elements: long term improvements

1. Evaluate the convenience, quality, and utility of set-level logbook reporting and supplemental data collection programs; refine data elements, sampling intensity, collection programs, and methods as needed.

2. Develop a process to enable changes to historic data sources that will enable resolution of errors, address misidentification of species, and allow elimination of ‘unclassified’ categories.

2. Improving Detailed Information for Primary Species

1. Evaluate data collected by fishery and from comprehensive surveys to ensure the appropriate species receive intensified sampling.
2. Develop a long-term plan for regularly evaluating life history characteristics of target species.
3. Develop robust QA/QC programs for age determination.
4. Evaluate sampling intensity and modify sampling targets as necessary.

3. Improving Evaluation of Specific Management Actions

1. Develop a long-term plan for regularly evaluating life history characteristics for all species included in Council FMPs.
2. Support monitoring and research programs necessary to develop and evaluate limited access programs.
3. Develop a long-term plan for regularly evaluating trends and indicators of stock status for secondary species and all other managed species to enable management to adapt to fisheries changes as necessary.