South Atlantic Fishery Management Council
Scientific and Statistical Committee Meeting Report
August 16 - 17, 2010
Town and Country Conference Center
Charleston, SC 29405

Synopsis:

The purpose of this meeting is to further develop the ABC control rule for stocks which are unassessed and for which no P* analyses are available, consider additional information requested for golden crab and corals to support ABC recommendations, and consider ABC recommendations for sargassum and wreckfish

1. Introduction

Actions

Approve Agenda
Agenda was approved with one minor addition to discuss the ABC recommendation for mutton snapper. The SSC previously recommended using the landings associated with a P of 35%. Unfortunately, this assessment was run prior to the P* requirement in the terms of reference; therefore, a P* distribution was not calculated. The SSC has been requested to provide another value for OFL and/or ABC.*

Approve April 2010 Meeting Minutes
April 2010 meeting minutes were approved.

2. SEDAR Activities

Overview

A. Participant Request

Several vacancies were created in upcoming SEDAR workshops by recent SSC membership changes. Members are asked to indicate availability and interest for consideration by the Council in September.

1 SSC Reviewer for the SEDAR 23 Goliath grouper benchmark review panel
1 SSC Reviewer for the spiny lobster update joint review workshop
1 SSC Chair for the SEDAR 24 red snapper benchmark Review Panel
1 SSC Reviewer for the SEDAR 24 red snapper benchmark Review Panel
Additional participants for the South Atlantic black sea bass update

B. Project Updates

- SEDAR 23: South Atlantic and Gulf of Mexico Goliath Grouper

Data and assessment workshops complete. Review Workshop in Key West, November 15-17.

- SEDAR 24: South Atlantic Red Snapper

  Data workshop complete and assessment webinars underway. Several additional assessment webinars were recently added for August. Review Workshop in Savannah, GA, October 12 - 14. SSC review November 8-10 and Council presentation in December 2010.

- Spiny Lobster Update

  Data scoping webinar complete, assessment webinars underway. Assessment completion workshop in Key West, September 28 - 30. Review Workshop by representatives of Gulf and South Atlantic SSCs in Key West, November 18-19. Council presentation in December 2010.

- South Atlantic Black Sea Bass Update

  Appointments were made and the schedule and TORs were approved for this update in December 2009. The project was delayed in January 2010 when the red snapper update was elevated to a benchmark. A data scoping webinar was held in July 2010. A revised assessment schedule will be considered by the Council in September 2010 that proposes completion in March 2011. Additional SSC participation is possible, and current appointees should review the proposed schedule to ensure availability.

Actions

Nominate SSC candidates for SEDAR Projects
Marcel Reichert, George Sedberry, John Hoenig and Eric Johnson volunteered to fill the reviewer roles for goliath grouper and spiny lobster.

Anne Lange volunteered to chair the red snapper review.

Still need someone from the committee to act as a red snapper reviewer.

Jim Berkson and Steve Cadrin volunteered to participate in the black sea bass update.

3. Update on 2010 National SSC Workshop

Overview

The SAFMC is hosting the 2010 National SSC Workshop. It will be held at the Charleston Marriott, October 18 – 22, 2010. The SAFMC SSC chair is expected to chair the National Workshop.

Discussion topics include: SSC progress report on ABC control rule implementation; update on NS2 guidelines; update on the data poor subcommittee; assessment peer review

processes; developing fishing level recommendations, data poor approaches, and defaults when no recommendations are provided by the SSC.

Actions

Indicate availability and interest in participating in the National SSC workshop
The South Atlantic SSC will have a strong representation at this meeting since quite a few members (i.e., Luiz Barbieri, John Boreman, Steve Cadrin, John Hoenig) serve for more than one regional SSC. Additional participants include Carolyn Belcher (acting as chairman), Anne Lange, Scott Crosson, and Marcel Reichert.

4. ABC Control Rules for Unassessed Stocks

Overview

The SSC discussed control rules for data poor or unassessed stocks in April 2010. An alternative control rule was developed and presented in the April committee report.

ABC control rules are addressed in the guidelines for National Standard 1. The SSC's assessed stocks control rule is provided for reference and information of newly appointed members. During deliberations, the Council suggested that the control rules be divided into 'assessed' and 'unassessed' stock components, as 'data poor' is a relative term.

A. Council Guidance

The Council received the proposed data poor control rule in June 2010. Some aspects of the proposed rule and its criteria were considered inappropriate considering guidance that the rule should account for scientific uncertainty. The Council ultimately rejected the data poor control rule as put forth by the SSC and requested that the SSC consider the following in revising the rule:

MOTION: COUNCIL DIRECTS THE SSC TO CONSIDER THE FOLLOWING GUIDANCE WHEN CONSIDERING AN ALTERNATIVE CONTROL RULE FOR UN-ASSESSED STOCKS:

(1) DETERMINATION OF SPECIES AS ECOSYSTEM COMPONENTS AND INCREASING BUFFERS ABOUT OFL FOR SUCH CIRCUMSTANCES IS BEYOND THE SCOPE OF ASSESSMENT UNCERTAINTY AND SHOULD THEREFORE NOT BE PART OF AN ABC CONTROL RULE.

(2) THE COUNCIL BELIEVES THAT STOCK STATUS IS AN OUTCOME AND NOT AN ASSESSMENT UNCERTAINTY APPROPRIATE TO CONSIDER IN AN ABC CONTROL RULE.

(3) THE COUNCIL RECOMMENDS THAT THE SSC CONFIGURE THE DATA POOR CONTROL RULE TO PROVIDE A REDUCTION DOWNWARD FROM OFL, AS DESCRIBED IN THE GUIDELINES, AND DOES NOT BELIEVE IT IS APPROPRIATE TO START AT AN ASSUMPTION THAT ABC=0. (Number 3 is missing in the minutes page 164)

(4) THE COUNCIL RECOMMENDS THAT THE SSC CONSIDER A TIERED APPROACH THAT DIFFERENTIATES BETWEEN LEVELS OF DATA DEFICIENCY, AND TAKES INTO CONSIDERATION SOURCES OF INFORMATION BEYOND LANDINGS STREAMS THAT MAY INCLUDE BUT ARE NOT LIMITED TO, PRIOR ASSESSMENTS, EFFORT TRENDS, SURVEY AND MONITORING TRENDS.

MOREOVER, THE COUNCIL RECOMMENDS THAT THE SSC REVIEW, COMPARE AND CONTRAST AND COMMENT ON THE UTILITY OF:

(1) THE ANALYTICAL APPROACHES FOR DEVELOPING ABCS IN DATA POOR SITUATIONS AND FOR UN-ASSESSED STOCKS THAT WERE PROVIDED FOR CONSIDERATION AT THE APRIL 2010 MEETING (E.G., DCAC AND COOPER APPROACHES);

(2) THE ALTERNATIVE ABC CONTROL RULES DEVELOPED BY THE COUNCIL AND INCLUDED IN CURRENT DRAFT AMENDMENTS; AND

(3) THE PROPOSED DATA POOR CONTROL RULE DEVELOPED AT THE APRIL 2010 MEETING.

THE SSC SHOULD COMMENT ON WHICH OF THESE APPROACHES IS MOST ROBUST TO UNKNOWN INFORMATION AND MOST APPROPRIATE FOR USE IN DERIVING ABC FROM OFL. [INTENT THAT THIS APPLIES TO ALL SPECIES; USE ANY ASSESSMENT, NOT JUST PEER REVIEWED ASSESSMENTS].

The Council passed a motion establishing a data poor (later the term 'unassessed stocks' was indicated as preferred) ABC control rule of ABC=75% of OFL for snapper grouper stocks, excluding wreckfish. This was intended as a way to move the process ahead while giving the SSC additional time to develop the unassessed stocks control rule, and is an alternative referenced in (2) of the second clause of the motion listed above. The full suite of ABC alternatives under consideration by the Council are listed in the excerpt from the Comprehensive ACL amendment.

Council Motion:
ESTABLISH AN ABC CONTROL RULE FOR DATA POOR (NO P* ANALYSIS) SNAPPER GROUPER SPECIES WHERE ABC = 75% OF OFL (ALTERNATIVE 3B) EXCEPT FOR WRECKFISH.

*B. National SSC committee progres*s

A data poor or unassessed stocks ABC working group was convened following the 2009 National SSC meeting. The group has met several times over the previous year and expects to present findings at the 2010 meeting in October. Two members of the SAFMC SSC serve on this committee and may be able to provide some preliminary guidance on this topic.

C. Options from previous SSC meeting

The following information is provided to help the Committee address the issues and concerns raised by the Council. Text describing alternative approaches for deriving ABC for unassessed stocks is essentially unchanged from the April 2010 Roadmap.

Establishing OFL

At the April 2010 meeting the Committee agreed that the first step in providing fishing level recommendations, including ABC, is to establish the OFL. The Committee recommended that OFL be based on the median landings over the last 10 years (1999-2008). This recommendation was supported by the Council.

ABC Control Rule Alternatives

The SSC was provided documentation and example applications of various approaches for deriving ABC from OFL for unassessed stocks for the April 2010 meeting. These included the "DCAC" approach as applied to SAFMC stocks, the "Cooper approach", and a range of fixed OFL-ABC buffer alternatives as contained in the current SAFMC Comprehensive ACL amendment provided. Values for OFL and outcomes of these alternatives for deriving ABC were provided in a spreadsheet. Additional reference documents in support of these approaches are provided in the reference documents folder of the briefing book.

The DCAC method of MacCall requires average landings, estimates of M, and two scalar parameters, one that reflects the reduction in biomass over time and another which reflects the relation between M and Fmsy. In January 2010 the Council requested that SEFSC provide DCAC-based estimates of sustainable yield for unassessed stocks. When SEFSC was unable to fulfill the Council's request, SAFMC staff pursued a simple spreadsheet application of the method to available data. The general approach applied for this exercise was to fix the Fmsy

scalar at 1, which in practice assumes Fmsy=M for those stocks for which an M estimate is available. It was assumed that M=0.2, and therefore Fmsy=0.2, for any stocks for which a documented M value was unavailable. Next, a value for the biomass trend scalar was found, using solver, that provided a 25% reduction in average catch. This was chosen to be consistent with the rule of thumb of ABC=75% MSY, but in practice any value could be used. In fact, any of these assumptions can be modified or derived from more rigorous information if available. For more detailed information, see applications of this approach described in draft documents provided by the North Pacific Council SSC contained in the reference documents folder. Also included in the reference section is the latest MARMAP status of stocks report providing fishery-independent CPUE trends which may provide information of stock biomass trends for refining the DCAC parameters.

The "Cooper Approach" was put forth by SSC member Andy Cooper following discussions of ABC approaches during the Committee's January 2010 conference call meeting. ABC is derived from an average catch value through assumption of a CV and calculation of a distribution in lieu of an observed P* distribution.

Council directed the Committee to specifically review the range of alternatives for developing ABCs in data poor situations and to consider a tiered approach that accounts for the varying levels of available data.

The Committee should also consider whether the existing assessed stocks ABC control rule should be modified based on the recommendation from April 2010 that it only applies in circumstances where a P* analysis can be developed.

ACTIONS

Recommend an ABC control rule for unassessed stocks.

Review the assessed stocks ABC control rule for consistency with discussions and recommendations made during this and the April 2010 meetings.

There was initial discussion on definition of "unassessed stocks" and "data poor" stocks. These terms are not synonyms as unassessed stocks can span data poor to data rich spectrum.

Data poor and data rich are relative terms that are useful within a region/council and breakdown when used between councils due to changes in data quality and quantity by region.

The South Atlantic SSC currently has four members that are part of an ad hoc committee that worked to address the data situations where only reliable catch series (ORCS) data are available for a given species. Steve Cadrin, Luiz Barbieri, Andy Cooper, and Jim Berkson have all been participating on this committee since last fall. Jim Berkson gave

an update on their progress and provided the SSC with the proposed approach being developed by ad hoc committee

Proposed approach for ORCS considers the following tiers:

Level 1 tier *- data exist to assess stock. Enough information for some form of assessment (e.g. surplus production model), but because of lack of resources, stock has not been assessed. Recommendation is to do stock assessment.*

Level 2 tier *- depletion based stock reduction analysis (DBSRA) – (developed by Dick and MacCall) Can be done if you have your entire catch history for a fishery. Requires some level of "informed expert judgment".*

Level 3 tier *- depletion-corrected average catch (DCAC) (MacCall 2009. Done when you have only a limited # of years of catch data for a fishery. Requires a higher level of "informed expert judgment" than Level 2 tier.*

Level 4 tier*- ORCS ad hoc group is currently working on what to do when not enough data exist to perform DCAC*

Dr. Berkson discussed Restrepo's method as a potential tool to estimate ABCs for Level 4 tier stocks. Two main components of the approach are often overlooked:

- *time period considered is based on experts' judgment of when the stock was, or is, stable.*
- *The scalar that is multiplied with landings is based on expert opinion of stock status (e.g., B/Bmsy ratio; use 0.75 if stock biomass is likely at or above Bmsy).*

There was concern within the SSC about Restrepo's method because of the assumption that landings during the stable period represent OFL. John Boreman noted that this approach was developed in a time that 50% probability of overfishing was OK, now we have to stop overfishing and our reference is different. Steve Cadrin provided an example from New England red crab where long-term average landings were determined to more closely resemble ABC than OFL. There was general agreement among SSC members that the landings stream during a period when a stock is considered stable represent ABC and not OFL; in this scenario, OFL is an unknown value above ABC that cannot be provided to the council under this tier.

NOAA general council, Mike McLemore, was concerned that no OFL would be provided. Discussion between the SSC and Mr. McLemore focused on what the SSC was responsible for providing to the Council under NS1. It became clear that the recommending an ABC was the main goal, and providing this recommended value without an estimate of OFL was acceptable in situations where only catch series data were available, provided the SSC "explains its reasoning and judgment "-M. McLemore.

For Level 4, the ORCS ad hoc committee is also considering the productivity of a stock. At this point, the SSC chose to endorse the ORCS approaches for tiers 1 to 3. This would satisfy the council's request for a tiered approach to develop ABCs for unassessed stocks.

This framework was discussed by SSC and an outline that includes both Dr. Berkson's summary on ORCS and SSC additions is provided below.

South Atlantic SSC's Recommended Tiered Approach to Deriving OFL and ABC Values for Fisheries

Level 1 tier *– Assessed - Whenever possible, ABC recommendations should conform to an ABC control rule that is based on the probability of overfishing(i.e., P* approach)*

- Addressed with current control rule
-Provides pdf of OFL.
-Approach will be consistent.

Level 2 tier *- Depletion based stock reduction analysis (DBSRA) – (Dick and MacCall).*

-If the information necessary to implement the Council's approved ABC control rule is not available (e.g., MSY reference points, projected stock size, distribution of OFL, etc.), then the basis of the ABC should be explicit about what aspects of the derivation were based on expert judgment.
-Requires full history of landings and other life history info for the stock
- Gives a pdf of OFL. Could apply P or other risk/p level to derive ABC*

Level 3 tier *- depletion-corrected average catch (DCAC) (MacCall 2009). If components of the ABC control rule cannot be provided, a provisional ABC should be based on alternative approaches, but deviation from the control rule should be justified..*

-Requires less data than 2nd tier
- Provides provisional ABC directly – OFL unknown

Level 4 tier*- Catch only. ORCS ad hoc group is currently working on what to do when not enough data to perform DCAC.*

-Difficult to prescribe.
-Requires judgment and careful consideration of all available sources, which may vary greatly between stocks falling in this tier

Other notes relevant to approaches for tiers above:

A concern was raised about a tendency to manage more conservatively when in data rich situations and suggested comparison of ABCs from lower tiered approaches with Level 1 approach. How often are lower-tiered approaches more conservative than ABC coming out of assessment? There was general agreement that this was a worthwhile exercise to do with stocks that have been assessed in southeast. SEDAR staff did this for MSY/OY

for five species and DCAC estimates of yield were lower than assessment estimate in 4 out of 5 cases. This supports argument that DCAC approach is more conservative given scientific uncertainty.

A point was raised that data may exist to do assessments on species and we should be looking for species that we can move to lower tiers. For example, students who participated in Dr. Berkson's summer undergraduate stock assessment workshop assessed bank sea bass, gray triggerfish, sandperch, and tomtate. The results of those assessments will be presented to SSC in November.

Dr. Barbieri provided a review of Rick Methot's approach that incorporates information on historical catch into ABC decisions for species where only catch data exist (Table 1). This method was presented and discussed during the National SSC meeting last year. The management judgments and actions are dependent on historical catch.

Table 1. Dr. Rick Methot's approach for incorporating information on historical catch in ABC decisions for species where only catch data exist.

Historical Catch	Expert Judgment	Possible Action
Nil, not targeted	Inconceivable that catch could be affecting stock	Not in fishery; Ecosystem Component; SDC not required
Small	Catch is enough to warrant including stock in the fishery and tracking, but not enough to be of concern	Set ABC and ACL above historical catch; Set ACT at historical catch level. Allow increase in ACT if accompanied by cooperative research and close monitoring.
Moderate	Possible that any increase in catch could be overfishing	ABC/ACL = f(catch, vulnerability) So caps current fishery
Moderately high	Overfishing or overfished may already be occurring, but no assessment to quantify	Set provisional OFL = f(catch, vulnerability); Set ABC/ACL below OFL to begin stock rebuilding

The classification of historical catch for this approach will be based on "expert judgment" and will require time series of historical landings to be put together for our mixed species fisheries.

There was discussion with respect to the Council's concern regarding stock status in development of ABCs. This issue has to do with level 3 and 4 stocks where scientific uncertainty and management uncertainty are difficult to separate. There is potential to step on the Council's toes in setting P. The Council liasion indicated that the Council gets nervous when the SSC starts discussing items linked with management uncertainty.*

The MAFMC is considering options where information on atypical vs. typical life history, data tier, and stock status would be used to determine the probability of overfishing. The MAFMC is trying to avoid double counting catch penalties (e.g., if stock status already considered in assessment then should not also be counted in P).*

The Council asked that the SSC not consider stock status in setting ABCs. The SSC discussed this recommendation and there was general agreement to re-evaluate this question as we worked stocks through the control rule. There was no decision to remove stock status from the control rule at this time. Additionally, it was pointed out that the ORCS methodology required information on stock status. If stock status is incorporated into an ABC, the SSC will be very clear to the council that this was done.

A point on the need to be flexible was brought up several times during discussions. The methods for assessing ORC stocks are an area of active research and rapidly developing, therefore methodology must remain adaptive. Text should be added to the ABC control rule for unassessed stocks that the SSC's framework may be abandoned in special cases and that the SSC will provide adequate justification to the council when this happens.

5. Fishing Level Recommendations

Overview

The Council selected alternative control rules for many of the unassessed stocks at the June meeting. Unique circumstance of the four stocks in this section led to their individual consideration.

Considerable discussion that ensued at the June 2010 SAFMC meeting following review of the SSC report from April 2010, and testimony received during the meeting, indicated that information is available for some stocks beyond that considered by the SSC in April. Based on these findings, further data exploration of coral and golden crab was requested of SEFSC for consideration at this meeting.

Dr. Henry Feddern, coral fisherman and member of the SAFMC Coral AP, submitted numerous documents related to coral stocks that are provided in the reference section. Staff of FL FWC also provided additional coral information. SAFMC Staff summarized much of this information in the provided attachments. Those interested in the source or further detail are directed to the reference section.

A workshop was held in June 2009 including the SSC and representatives of the golden crab and wreckfish APs. Considerable information was presented regarding prior assessment efforts and Council decisions on reference points for these stocks. Documents from that workshop are included in the reference section.

A. GOLDEN CRAB

Information available for golden crab was summarized in the overview for the 2009 workshop. ABC options listed below were derived based on information available at the workshop. There have been no subsequent assessment efforts on golden crab.

It is widely argued that the golden crab is an underutilized resource and that the fishery exploits only a portion of the species' range. Much of the earlier deliberation regarding MSY and OY values was tied to efforts to expand information from the exploited area to the entire stock range and entire stock's productivity.

ABC alternatives are under consideration for golden crab:

2.3 Action 3. Establish an Allowable Biological Catch (ABC) for the Golden Crab Fishery of the South Atlantic region.
Alternative 1. No action (THERE IS NO ABC SPECIFIED FOR GOLDEN CRAB)
Alternative 2. ABC = 2 MILLION POUNDS
Alternative 3. ABC = 1.5 MILLION POUNDS
Alternative 4. RECOMMENDATION FROM THE SSC.
Alternative 5. ABC = 4.0-4.5 MILLION POUNDS

The SSC recommended ABC for golden crab in April 2010 based on the control rule derived at that meeting. The Council rejected that control rule as noted above, and therefore removed ABC recommendations based on that control rule as illustrated for golden crab in the following motions.

MOTION #2: DELETE ALTERNATIVE 4 FROM ACTION 3.
Action 3. Establish an Allowable Biological Catch (ABC) for the Golden Crab Fishery of the South Atlantic region.
Alternative 4. 336,905 pounds (recommendation from the SSC)

MOTION #3: REMOVE 336,905 POUNDS FROM ACTION 4, ALTERNATIVE 2 AND LEAVE IT BLANK.
Action 4. Establish an Annual Catch Limit (ACL) for the Golden Crab Fishery of the South Atlantic region.
Alternative 2. ACL=ABC=336,905 pounds

The Council agreed with the SSC comments from April 2010 that there is likely additional information that could be compiled for golden crab that could better support fishing level recommendations. One of the concerns is that there is quite a wide range of prior estimates of productivity and acceptable yield, as is illustrated by the overview and other documents from the 2009 Golden Crab-Wreckfish workshop. A memo requesting the following was submitted to the SEFSC to try and address these outstanding concerns and uncertainties:

1. Landings, mean size, effort, and CPUE over all available years.
2. Evaluation of prior assessments (Harper et al 1998 and 2000), the estimate of MSY put forth in the SEFSC memo from Dr. Powers dated 9/12/01, and other evidence used to determine stock status as reported in the 1999 and 2004 SAFE reports, as indicators to inform SSC recommendations for OFL and ABC.
3. Review of any golden crab research conducted since 2000.

4. Evaluation of the proportion of the population's distribution that is exploited by the current fishery, including consideration of the extent to which distance from shore, pending Deepwater Coral HAPCs, and Bahamian waters protect portions of the stock from harvest.

This information was requested by August 1, and will be provided to the SSC upon receipt.

FINAL VERSION UPDATE:
Information on golden crab landings and mean size was received on August 6th, including landings and effort in spreadsheet format.

B. CORAL

Information on landings and possible reference points for corals was provided in a presentation made at the April 2010 meeting.

Arguments presented at the June Council meeting suggested that the Coral resource was vast relative to the actual harvest and that species are able to repopulate after harvest. This led the Council to request additional coral information from SEFSC, with the requested delivery date August 1. (No information has been received at this writing. Any information received will be forwarded to the Committee via email or FTP site as appropriate)

Additional information for this meeting includes:
- Summary by SAFMC Staff of general information based on the documentation provided by Dr. Feddern
- Summary of landings provided by FL FWC,
- Life history summary of various coral species
- Summary of FL Keys Monitoring, provided by FL FWC
- Response by SEFSC to SAFMC request

FINAL VERSION UPDATE:

Dr. Henry Feddern conducted counts of corals in the areas he fished and provided summary results and detailed counts.

Council staff obtained a recent (2009) reference document on coral populations and harvest impacts that is provided for consideration. This document is provided as an attachment because it was not available when the summary of other references was prepared.

C. *Wreckfish*

After extensive discussion of wreckfish issues, the SSC recommended that ABC was unknown and that Council should consider an ACL that does not exceed 200,000 pounds. One of the issues raised in April is that the management system of individual quotas tied to portions of the allowable harvest level potentially alters the relation between the recommended harvest and the realized harvest. Effort is reduced in the

fishery, to the extent that recent landings are confidential because fewer than 3 harvesters are in operation in recent years. Landings are reduced and recent trends in landings, even if such landings could be publicly disseminated, are possibly not representative of fishery productivity. Landings through 1999

June 2010 Council Motions:

MAKE ALTERNATIVE 3 THE COUNCIL'S PREFERRED ALTERNATIVE FOR MSY FOR WRECKFISH.

Alternative 3. *MSY = 1.946 million pounds. This figure is the average landings from 1988-1994 which represent the years of high landings.*

SET OFL = MSY AND ABC = 75%OFL FOR WRECKFISH.

Wreckfish landings for 1988-1998, copied from the 1999 SAFE report, are shown in the following table.

Table 1. Commercial wreckfish landings (in whole weight) by fishing year.

Fishing Year	Landings (whole lbs)	Mean Catch / Day (whole lbs)	Mean Catch/Trip
1988	617,662		
1989	4,161,965		
1990	1,970,299		
1991	1,926,088	984	6,254
1992	1,270,557	932	5,723
1993	1,144,726	758	5,451
1994	1,203,265	814	5,986
1995	644,997	751	4,607
1996	396,868	548	4,178
1997	248,084	628	4,459
1998	210,800	791	5,856

D. SARGASSUM

The SAFMC Sargassum FMP was approved in November 2002. Actions relating to fishing level recommendations include:

> **ACTION 1.** Establish the Management Unit for pelagic *Sargassum* throughout the South Atlantic Exclusive Economic Zone (EEZ) and State Waters. The management unit is the population of pelagic *Sargassum* occurring within the South Atlantic Council's area of jurisdiction along the U.S. Atlantic coast from the east coast of Florida, including the Atlantic side of the Florida Keys, to the North Carolina/Virginia

Border and within state waters of North Carolina, South Carolina, Georgia, and the Florida East Coast.
ACTION 2. Maximum Sustainable Yield (MSY) for South Atlantic pelagic *Sargassum* is estimated to be 100,000 metric tons (220,460,000 pounds) wet weight per year.
ACTION 3. Specify Optimum Yield (OY) for pelagic *Sargassum* as 5,000 pounds wet weight per year.
ACTION 4. Specify Overfishing Level to meet Magnuson-Stevens Act Mandate for pelagic *Sargassum*. Overfishing is defined as the rate of harvest which compromises the stock's ability to produce MSY. The Maximum Fishing Mortality Threshold (MFMT) is 9.0 to 18.0 units per year. The Minimum Stock Size Threshold (MSST) is 25,000 metric tons (55,115,000 pounds).

At this time there is no known harvest of sargassum. The SSC recommended ABC=0 in April 2010, based on consideration of no harvest and sargassum as habitat. Discussions at the June Council meeting suggested that the Council could choose to set ACL to 0, but the SSC should recommend an ABC consistent with productivity levels and should not recommend and ABC of 0 simply because there is no current harvest.

Additional information regarding the justification for the Council's original actions on Sargassum was provided. A table of landings, 1976-2010, was also included.

The SSC is asked to consider an ABC recommendation, and in doing so, to consider whether there is evidence to justify changing the current fishing level recommendations for sargassum.

Actions

Provide fishing level recommendations for Golden Crab, Corals, Sargassum, and Wreckfish.

A. Golden Crab

The SSC discussed additional information that was now available, beyond what was presented at the April SSC meeting. These data included: additional landings, CPUE, mean sizes, and history and background of MSY values that have been put out in the past. Further discussions, based on information available to the SSC, included:

- *While it appears that the Harper, et al production model provides the most complete assessment, it only covered a portion of the resource, which is likely why its outcome wasn't used (i.e., even the NMFS estimate is higher than that derived from assessment.)*
- *Staff tried to get more data and assessment history, but were not successful.*
- *Average lbs for past 10 years ranged from 300-750K lbs, with a mean of about 562K lbs.*
- *This is a developing fishery that is difficult to participate in, and there are areas of the resource's distribution that can't be fished. This fishery is different than others since we can't necessarily assume it is being depleted, and it may, in fact, be increasing.*

- *The question of what to do when landings are not from all areas of resource was further discussed.*
    - *It was noted that, for example, with conchs, MSY was calculated for the fishery only, and applied only to that part of resource where fishery occurred. This approach may be ok, even if you ignore rest of resource, if you can assume that no other fishery impacts the stock.*
    - *The SSC also agreed that we may accept greater risk in the near term with expectation that more data will be coming; if not, then at a later date we could take action to reduce the risk further.*
- *Harper's (et al, 2000) production model was also discussed and compared to other surplus production models- fro New England red crabs. It was suggested that similarities in the two stocks and assessments might be informative.*
    - *There were similar concerns for red crab, as a deep water fishery, but it showed no signs of depletion*
    - *The red crab assessment did use long term average catch for ABC since no evidence of depletion.*
    - *However, in golden crab, there appears to have been depletion early on in the fishery based on Harper's SP model (for middle and southern zones, only since too few vessels reported from the northern zone. The model did estimate B at or above Bmsy, so OFL=MSY is appropriate.)*
    - *Again, while the two species may have similar life histories, the fisheries don't share similar histories.*

The SSC discussed comments provided by industry representatives regarding the fishery, and how this fishery might fit into the range of unassessed stock categories discussed the previous day (nil-no fishery, small fishery, moderate fishery, or moderate-high fishery). The SSC concluded that this is a small fishery, but the catch is large enough to warrant including it in the fishery but not enough to be of concern. Based on the rationale from earlier discussions, it was suggested that ABC and ACL could be set above historical catch levels.

Based on these discussions it was suggested that ABC alternative 2 (2 M lbs), be the SSC recommendation to the Council, with the precautionary note that more data are needed.

- *Rationale:*
    - *Level of exploitation- small fishery- so set above historical catch*
    - *No solid evidence on MSY,*
    - *2M looks middle of road compromise, with some fishery expansion, but not to an extreme until have more information*
- *Further support/discussion:*
    - *MSY papers- Harper, et al 2000, plus Powers (2001) for further north*
    - *If Accept MSY ~ 2.5M- then would get p* of about .1 if use 2M ABC*
        - *Harper et al 10^{th} %ile of MSY is 84% of the point estimate (Table 5)*
        - *ABC=80%MSY*
    - *Seems consistent with the range of P* we have used*

- *Supported by the best estimate of scientific uncertainty and the Council's risk tolerance*

The SSC then discussed whether it should recommend additional precautions or data and assessment needs. Issues such as an updated, possibly a benchmark assessment, with other models including the surplus production model were suggested, along with improvements in data collection. A member asked whether it was the SSC's role to recommend what stocks needed assessments or if the Council should initiate those discussions. Others responded that the SSC can always recommend what they believe is needed to address scientific uncertainty and that it would help the Council if we recommended what assessments and types of assessments would be beneficial to them, recognizing that social and economic issues will also weigh in on any of their decisions. The group was reminded that our position was that recommendations for the short term may be more risk prone, but if lack of quality data or assessments continues, it may increase risks, so it is important for the resource to get more data and increased assessment levels.

It was also noted that we always prefer to make recommendations with assessment results, and if we are forced to make recommendations without one- we are limited.

The SSC concluded that we should have a discussion up front to the council, noting that we'd like to have a set of data each year for such stocks. Landings, areas fished, size composition, etc., so we can monitor the "experiment". If we see signs of depletion, our recommendation might change.

B. Corals

The SSC reviewed and discussed background information on octocoral landings, life history, and possible fishery reference points. The Joint SAFMC-GMFMC Coral Fisheries Management Plan was originally implemented in 1982. In 1990, Amendment 1 to the Coral FMP established the TAC for commercial harvesters of octocorals at 50,000 colonies annually (although this quota has never been reached). It also established commercial permits, reporting requirements, and a six-colony recreational bag limit for octocorals. These regulations are consistent with regulations adopted in Florida. Starting in 1998, the vast majority of octocoral landings are from Florida state waters (Fig. 1). However, Florida rules state that the commercial harvest of octocorals shall close in state waters if the harvest of octocorals in adjacent federal waters is closed.

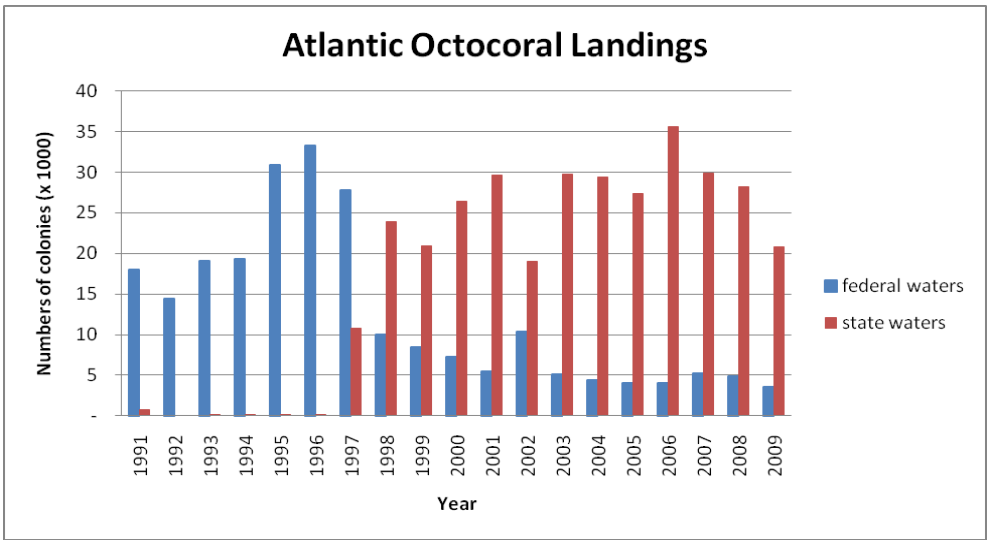

Fig. 1. Octocoral harvest (in number of colonies) in US South Atlantic waters and Florida state waters during the period 1991-2009 (Source: FWC, Fish and Wildlife Research Institute)

The SSC discussed the fact that there is no stock assessment for octocorals and landings information is limited. Although there are at least 40 different species of octocorals found off Florida and US South Atlantic waters individual octocoral species do not have unique fishery reporting codes; landings are reported in aggregate based on general color patterns ("red", "purple", and "other"). Fishery-independent information is also limited but available survey data (monitoring programs and directed studies conducted by FL FWC, UNC-Wilmington, and UGA) suggest relatively high octocoral abundance in the historically known distribution area (Florida Keys).

The SSC expressed concern about the potential impact of fishery removals on octocorals' habitat and ecosystem functions and discussed whether this uncertainty should be factored into the buffer between OFL and ABC. however, the committee agreed that determination of species as ecosystem components and increasing buffers about OFL for such circumstances is beyond the scope of assessment uncertainty and should, therefore, not be part of ABC determination. Nevertheless, the SSC recommends that the Council take octocorals' habitat and ecosystem role into account when evaluating management uncertainty and setting ACL and ACT.

For ABC determination the SSC followed the rationale and criteria outlined in the "Catch Only Scenarios" table developed by Rick Methot and presented at the 2009 National SSC Workshop. Based on the number of licensed fishery participants (100-140 fishers) and the magnitude of landings (median annual landings from South Atlantic and Florida state waters = 33,755 colonies; the TAC of 50,000 colonies/year has never been reached), the SSC considered the octocorals fishery to be in the "Small" category :

Historical Catch	Expert Judgment	Possible Action
Small	Catch is enough to warrant including stock in the fishery and tracking, but not enough to be of concern	Set ABC and ACL above historical catch; Set ACT at historical catch level. Allow increase in ACT if accompanied by cooperative research and close monitoring.

Based on:

1) *The unique characteristics of this fishery (e.g., organisms are caught and sold live to wholesale and retail dealers and aquarium owners; commercial octocoral collectors only make trips when they have an order to fill for specific organisms),*
2) *The fact that the fishery is small and effort/participation in Florida waters (i.e., where most of the harvest comes from) is capped by a limited entry program,*
3) *The fact that there are no signs of local depletion in areas where the fishery operate, or any other indication that the fishery has been operating at unsustainable levels,*

The SSC sees no reason to change the current quota and recommends an ABC of 50,000 colonies annually.

C. Sargassum

There has not been a fishery for sargassum in the past twelve years. Sargassum is not a significant bycatch in any fishery. It is a critical component of the ecosystem providing essential habitat to numerous harvest fish species and protected resources. Because of this, the SSC believes sargassum should be labeled and treated as an "ecosystem component species."

Because sargassum currently is placed within an FMP, an ABC is required. An MSY exists that could be the basis for an ABC, but upon further examination by SSC stock assessment scientists, the MSY was not developed through a traditional stock assessment method. Instead it was based on informal methods involving aerial photography and estimates of doubling time. As a result, the SSC considers the MSY value to be extremely uncertain and unreliable. Based upon the recommendation of its stock assessment experts, the SSC chose not to use the MSY value previously reported for ABC calculations.

At the Second National SSC Meeting, Dr. Rick Methot (NMFS/SFD) presented a framework for dealing with data-poor stocks. Under this framework, a stock is categorized based the status of the stock relative to its fishery. Methot has one category labeling the catch "nil," where the stock is not caught in any significant amounts. Methot recommends that stocks in this category be treated as ecosystem component stocks. Methot also has a category labeling the catch "small," where there is no risk of overfishing and the catch is not significant enough to be a concern. In these cases, Methot suggests setting the ABC greater than or equal to the historical average catch.

The SSC is developing a tiered system for setting ABCs. In the top tier, the ABC would be based on the results of a traditional stock assessment. In the second tier, the ABC would be based on the results of a DBSRA analysis. In the third tier, the ABC would be based on the results of a DCAC analysis. The SSC is still in the process of evaluating alternative approaches for stocks in the fourth tier. For the time being, the SSC recommends using the Methot framework for stocks whose catch fits into Methot's categories of "nil" or "small".

The SSC has placed sargassum in tier four for establishing ABCs. Historically the sargassum fishery can be classified as "small," where overfishing has not been a concern. The average catch from 1976-2009 is equal to 12,800 pounds wet weight. Under the SSC's process for tier four stocks placed in Methot's category labeled "small", the SSC establishes an ABC for sargassum of 12,800 pounds wet weight. Furthermore, the previous OY set by the Council in the FMP is equal to 5,000 pounds. The SSC was told that the OY was based out of concern for the ecosystem services provided by sargassum. The SSC shares this concern. For this reason, the SSC recommends that the Council establish an ACL/ACT equal to the previous OY value of 5,000 pounds.

For the past twelve years there has been no sargassum fishery. In other words, in recent years, the sargassum fishery has been "nil" using Methot's framework adopted by the SSC. Under this framework, sargassum would be labeled an "ecosystem component species" and would not require an ABC. As stated at the beginning of this section, the SSC recommends that the Council take the actions necessary to reclassify sargassum as such.

D. Wreckfish

For wreckfish, the SSC reviewed and revised recommendations provided at the April 2010 meeting (ABC is unknown and ACL should not exceed 200K lbs, SSC Summary from April meeting). The fishery has been reduced to <3 harvesters and landings have declined substantially from the peak in 1990. The ITQ system is already suppressing effort and F, making wreckfish a special case. It is a difficult fishery to prosecute, therefore, marginal operators and those with low quota have dropped out . the Council is reviewing the ITQ and may make drastic changes; SAFMC will need OFL and ABC to make adjustments to ITQ. The last assessment is from 2001.

The discussions included some brief management considerations of lowering the ACL, which would require existing fishermen to buy out rest of the quota holders to make any money; however, SSC focused on science, not the management consequences.

The SSC initially considered whether 250,000 lbs (obtained using the average landings approach) represents a sustainable catch level. The committee agreed this is not the maximum sustainable, but a sustainable level. However, an initial question is whether the acceptable catch recommendations should be based on historical average catch or the 2001 stock assessment. Catches are currently much reduced from historical highs, and

2001 assessment indicated depletion at higher historical levels of effort. The catch reductions appear to have come mainly from gear restrictions, spawning season closure and ITQ implementation and historical catch levels have been influenced by regulation. We have a 2001 assessment, but how applicable is it to current catch? If we use a depleted-catch based approach are the historical catches a "small" historical catch? Perhaps, but probably not. Stock showed depletion in 1980s and behaves more like "moderate" as historical catch scenario. Should use the catch-only scenario, even though a 2001 assessment exists.

Currently, a measure of OFL does not exist based on the most recent assessment. There is an average of 1.964 million lbs for MSY, so 2 million lbs might be appropriate; 4 million lbs is excessive based on historical data and concerns at the time (1990) when catches were that high. Since stock size cannot be projected, an estimate of OFL from 2001 assessment could not be produced. A DB-SRA or DCAC estimate could be calculated, but recent landings are confidential, therefore the SSC was not be able to perform the calculations to produce these estimates at this time. However, the 2001 stock assessment is based on the historical data and without current or recent data, DCAC would use the same data as the assessment--so why not use the assessment? The SSC agreed it was dated and did not apply to current landings and conditions.

Depending on what years were included (it is valid to exclude the extremely high years), the range of average annual landings is 0.835 million to 2.5 million lbs. MSY can be expressed as range, but not sure how an ABC range would work, as the Council would have to select some level of ABC.

The SSC does not support the June 2010 Council motions setting OFL and ABC for wreckfish.

Justification: In the absence of a current assessment, using a catch-only scenario at moderate historical catch, it is possible that increasing catch will result in overfishing. The SSC reached consensus that catch-only analysis is appropriate because it is inappropriate to use an old assessment applied to new catch data for catches coming from potentially different fishing conditions than at the time of the assessment. Although an estimate of Fmsy exists, it cannot be applied to current stock biomass. However, we do have moderate historical catch based on what the 2001 assessment reported, so that increase in catch could cause overfishing. A recent estimate of F is close to Fmsy, so increasing F could lead to overfishing if there were increases in catch. We don't know the biomass or Bmsy but fishing at Fmsy at a stock < Bmsy is acceptable for a stock that is not overfished and this will allow rebuilding.

Recommendations from the SSC include:

- *For average catch, start the time series at 1997 and carry through recent years, resulting in an average of 250,000 lbs.*
- *Set ABC at 250,000 lbs. Due to confidentially of data, we can't get more precise than setting at 250,000 lbs. This caps fishery where it is (consistent with the 'Moderate' level of historical catch in Methot's table for catch-only scenarios).*

• *Conduct DCAC or DBSRA analysis in the next year to compare with the current catch-only recommendation.*

6. Other Business

OFL and ABC recommendations for mutton snapper

The SSC discussed the calculation of the OFL and ABC for mutton snapper. Originally, the SSC recommended that the OFL and ABC be calculated based on a P analysis. Although the most current assessment was conducted under SEDAR, it was conducted prior to the inclusion of the P* in the Terms of Reference. As the assessment lacks a distribution for OFL, the SSC had few options within the current framework being applied to derive these values. No one on the SSC wanted to lose the information gained from the assessment; however, given the current workload of FWC (the agency responsible for conducting the assessment) requesting a P* analysis at this point may not be feasible. The SSC supported the idea of asking for a P* when the update assessment is done in the future. In focusing on the current assessment and discussion within the group about how other species with similar situations have been handled so far in this process, the SSC recommended setting the OFL to MSY and the ABC to OY. OY for mutton snapper was defined as 40% SPR. This recommendation was proposed as the interim value until a P* analysis can be conducted for the next management cycle. Additional information about mutton that added to the comfort level included: the stock is neither overfished nor undergoing overfishing, and the recollection that yields are lower than the sustainable yield.*