# Proposed Allocation Decision Trees:
# *Biological, Economic, and Social Considerations*

South Atlantic Fishery Management Council
September 2020

## Introduction

In March 2020, the South Atlantic Fishery Management Council (Council) identified criteria they were interested in considering when discussing allocations that included: *landings history, expected/known discard rate, accountability of a sector, fairness, equity, market needs, importance of a species to a sector, cultural importance, and the possibility of removing sector allocations*. At the end of March 2020, the Government Accountability Office (GAO) released a report on its review of fishery sector allocations in the South Atlantic and Gulf of Mexico. There are many similarities between the two lists compiled by the Council and the GAO. The GAO recommended that the councils develop methods for analyzing sector allocation needs using the following five criteria: *trends in catch and landings, stock assessment results, economic analyses, social indicator analyses, and ecosystem models.*

Since the last reauthorization of the Magnuson-Stevens Fishery Conservation and Management Act (MSA), which prompted establishment of sector allocations for managed species, landings have been the primary data source used for allocation purposes in the South Atlantic region since they have been the most consistent data available and can be obtained for all species. However, the Council has acknowledged that other biological or ecosystem data sources, as well as input from economics and the social sciences, could also help inform sector allocation decisions.

In most cases, the Council has not used data other than landings because other types of data are lacking for the South Atlantic region or there has not been a consistent method to apply the concepts across all species. Currently, the Council is reconsidering sector allocations in a systematic manner without specific time constraints that were present after the MSA reauthorization, which allows time to consider additional methods.

The Comprehensive ACL Amendment (2012) created sector allocations for all species that did not already have them using landings from 1986 through 2008. The formula used a long-term "historical" time series and a more "recent" trend. Sector allocations were determined using fifty percent of the average landings from 1986 through 2008 ("historical" trend) and fifty percent of average landings from 2006 through 2008 ("recent" trend). The same amendment also put sector annual catch limits (ACL) and accountability measures (AM) in place. In season closures were implemented to keep landings from exceeding ACLs. Prior to implementing the Comprehensive ACL Amendment, in-season closures were uncommon. Since closures likely disrupt how the fishery would otherwise operate, and closures might occur for one sector and not the other, there could be some biases in the landings data. Hence, modifying sector allocations by using landings from years *after* AMs were implemented, particularly those used for short-term trends, could introduce bias in how a total ACL is apportioned between the sectors. Nonetheless, despite this limitation, trends in catch and landings remain a valuable source of information to help determine future modifications to sector allocations.

The purpose of this paper is to help the Council determine alternative methods to allocate ACLs that could be applied across all species. This process will also allow the Council to

identify which factors are most important to consider for a given species when making allocation decisions. Throughout the document examples of data for the fictional shadow shark fishery are provided where appropriate.

## Select Criteria to Consider When Discussing Allocations

### Landings History

For future allocation decisions where there is a recreational component, it is important to examine landings inclusive of the Fishery Effort Survey (FES) rather than the Coastal Household Telephone Survey (CHTS) methodology. This applies to current estimates of landings as well as historic landings. The transition from FES to CHTS resulted in noticeable changes in recreational landings estimates for many species such that a comparison between FES- and CHTS-estimated landings is not appropriate in most cases.

For the species being examined in this paper, the Council could continue to use a landings-based approach with updated datasets for recreational landings using FES estimates. However, as mentioned previously, a shift in the years used to after 2012 may result in biased allocation due to regulatory closures when ACLs have been met for some species. The Council may want to compare these potential allocations to recently observed landings in the fishery. Additionally, landings history can help determine the potential trajectory of future needs for a fishery as well as some of the likely distributive effects of allocations.

Available Data Sources:

- SEFSC commercial landings dataset
- MRIP/SEFSC recreational landings dataset

Examples:

- Historic landings by sector:

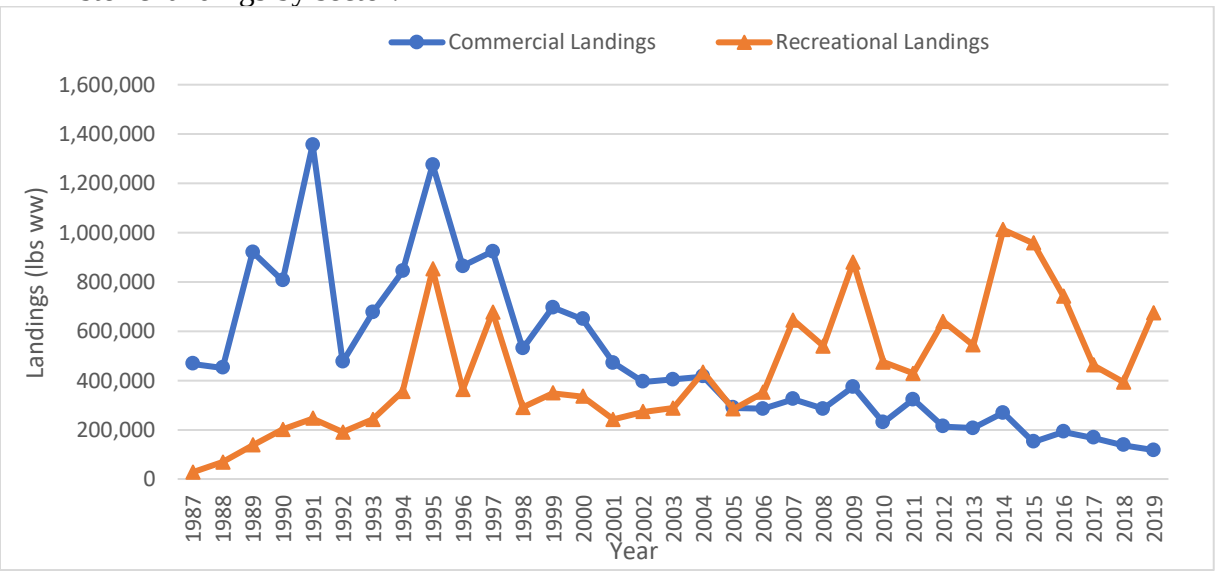



**Figure 1**. Shadow Shark landings, 1987-2019.
Note: Recreational landings are in FES estimates.

- Historic landings in comparison to potential sector allocations:

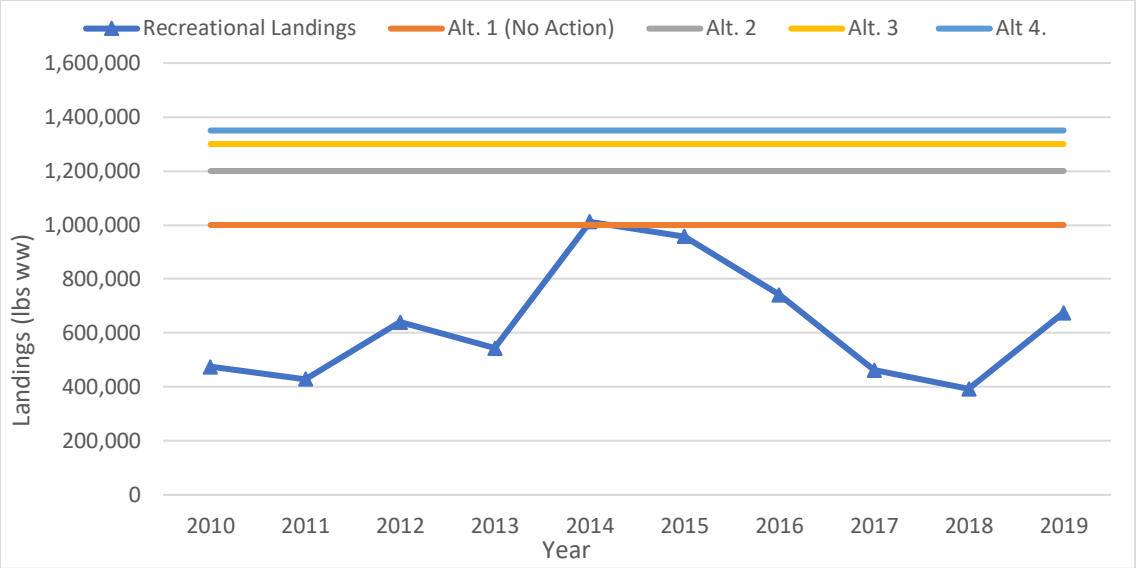



**Figure 2**. Recreational Shadow Shark landings in comparison to allocation alternatives, 2010-2019. Note: Recreational landings are in FES estimates.

## Discard/Bycatch Rates

SEDAR stock assessments routinely evaluate discard and bycatch rates for assessed species as part of the assessment process. Dead discard rates, particularly when the rate is different for one sector compared to another could be considered as a factor when deciding sector allocations if it is determined that avoiding dead discards is especially important for the species.

SEDAR stock assessment documents have information regarding species bycatch in managed fisheries. Information on bycatch, the life characteristics of the bycatch, and the disposition of the bycatch by sector could be used to help inform allocation decisions.

Available Data Sources:

- SEDAR Assessment Documents
- SBRM Documents

## Accountability

When examining allocations, the Council could take into consideration a sector's likelihood of staying within its respective allocation. When considering accountability, the Council may want to consider whether there are adequate data and mechanisms to accurately track sector ACLs. Many species that the Council manages have considerable fluctuation in landings from year to year or there may be inconsistent data on landings. Additionally, while sector allocations are being determined, the Council may want to also review accountability measures to help ensure that a sector does not consistently exceed its ACL and thereby can remain "accountable."

Additionally, a sector's previous accountability to a respective allocation may be particularly important when examining historic landings where a sector has exceeded its ACL. Under these circumstances, the Council may want to indicate whether a sector's landings should be capped at the sector ACL or use observed landings that may be above the sector ACL when specifying sector allocations.

Available Data Sources:

- SEFSC commercial landings dataset
- MRIP/SEFSC recreational landings dataset

## Fairness and Equity

National Standard 4 requires that "if it becomes necessary to allocate or assign fishing privileges among various U.S. fishermen, such allocation shall be fair and equitable to all such fishermen." (50 CFR §600.325(a)(1)). Regarding what should be considered fair and equitable, the CFR states that an allocation should be "connected to the achievement of OY" and should be "justified in terms of the objectives of the FMP." Finally, the CFR states that while "an allocation need not persevere the status quo in the fishery to qualify as "fair and equitable," if a restructuring of fishing privileges would maximize overall benefits" (50 CFR §600.325(c)(3)(i)).

When considering the fairness and equity of allocations, the Council will need to first review each FMP's goals and objectives to ensure they balance biological and human needs and paint a comprehensive picture of the fishery. Then the Council will need to determine the relevant costs and benefits of allocations to be considered, and how they will be measured. The regulations provide little guidance in this area. The decision tree approach, described below, may help the Council determine which factors are most important to consider for a given species.

An additional aspect of considering fairness and equity can come into play when implementing management changes that may allow or encourage new entrants into a fishery. In such cases, the Council may want to consider whether changes in allocations would be appropriate to mitigate the effects of increased landings and participation on current fishery participants. Examples of such management changes that have come up in the Council's discussions include removing the 2 for 1 permit requirement for new entrants into the commercial Snapper Grouper fishery, allowing bag limit sales of Dolphin landed during for-hire trips, and accommodating landings of Dolphin or Wahoo when vessels have certain gear onboard that is unauthorized for use in that fishery.

## Market Needs and Trends

The Council has identified examining market needs as an important consideration in determining allocations. As part of this, the Council may want to also explore trends in demand for a species. To address this, trends in ex-vessel price and trends in directed effort could be examined. Changes in ex-vessel price and directed effort over time can offer insight into the demand for a species and the potential current or future needs of a sector.

Fishery performance reports (FPRs) put together by the Council's advisory panels (APs) may offer understanding of the market needs and trends in demand for a species. The intent of the FPRs is to assemble information from Council Advisory Panel members' experience and observations on the water and in the marketplace to complement scientific and landings data. These reports provide qualitative information that broadly covers both sectors and different states within the South Atlantic region. These reports can be found on the Council's website by clicking HERE. Questions related to market trends and needs include:

- For the commercial sector, how has price and demand for species x changed?
- How has demand for charter/headboat trips targeting species x changed?

Available Data Sources:

- SEFSC ex-vessel price data
- MRIP/SEFSC recreational landings dataset
- Fishery Performance Reports

Examples:

- Trends in ex-vessel price:

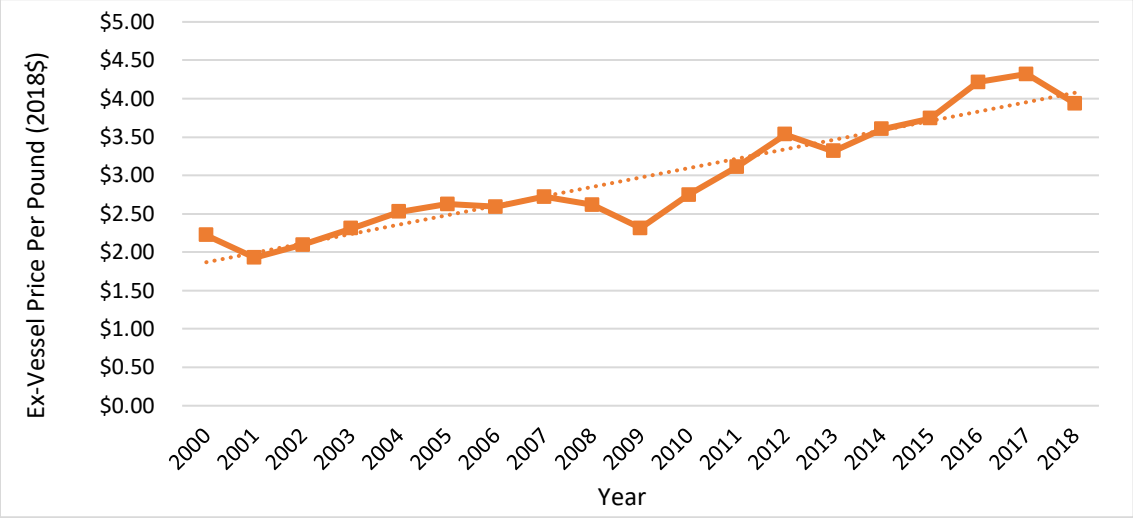



**Figure 3**. Ex-vessel price for Shadow Shark landings, 2000-2018 (2018 dollars).

- Trends in recreational trips:


**Figure 4.** Directed recreational Shadow Shark trips, 2005-2019.

Information from the Fishery Performance Report for Shadow Shark that was completed by the

Shadow Shark Advisory Panel during their April 2019 meeting:

- Recreational:
  - Demand for for-hire Shadow Shark trips often depends on the tuna fishery, as Shadow Shark are often a secondary target on trips targeting tuna. If the tuna bite is

not strong, a vessel will often change tactics to target Shadow Shark. For smaller center consoles, Shadow Shark are a more important target and have a higher demand since they can often be found closer to the inlets than tuna.
    - There has been a general increase in recreational effort and demand for private trips, largely reflective of an increase in center console, outboard powered vessels and relatively low gas prices.
    - Demand for charter trips is relatively steady. Many clients want to target sailfish, but Shadow Shark is an important secondary target when booking charter trips.
- Commercial:
    - There seems to be an increasing demand for Shadow Shark. It is very marketable and has a good shelf life. The CPUE seems to be relatively consistent, with about the same amount of effort needed to land fish, but the price has seen about a 30% increase over the past several years, with about a 10% increase annually.
    - There is an increasing demand in local markets and the species is very important to provide locally caught fish for restaurants. Prices are rising as well in response to growing demand.

## Importance to a Sector

The importance of a fishery or species to a sector can be measured in several ways. For the commercial sector, the Council could examine the percent of total revenue that a species represents on an annual basis or on trips where the species being examined is landed. For the recreational sector, targeted or directed trips for a species in comparison to other South Atlantic Council managed species could be used to gauge the relative importance of a species.

Social indicators also provide insight into the importance of a species to a sector. ***Engagement Indices*** measure which communities are more dependent upon recreational or commercial fishing based on overall fishing engagement (the absolute numbers of permits, dealers, landings, and value of landings). Communities highly engaged in commercial or recreational fishing activity are likely to have a large impact on the local economy**.** ***Regional Quotient (RQ)*** measures the relative importance of a given species or species group across all communities in the region as a way to quantify the importance of a species or species group to communities around the South Atlantic and suggest where impacts from management actions are more likely to be experienced. ***Local Quotient (LQ)*** measures the proportion of a vessel's total landings of one species in a fishing year compared to landings of all species in that year, averaged across communities. A vessel's LQ illustrates if a species is a large part of that vessel's catch, which can indicate that the vessel (and associated captain, owner, crew, fish house) is relatively more reliant on a species.

***Vulnerability Indices*** provide insight into which communities are most likely to be impacted by disruptions in the management environment. The three indices are poverty, population composition, and personal disruptions. The variables included in each of the indices have been identified through the literature as being important components that contribute to a community's vulnerability, including: increased poverty rates for different groups; more households with children under the age of 5; and disruptions like higher separation rates, higher crime rates, and unemployment.

Additionally, FPRs could help the Council measure the importance of a fishery to a sector. Questions related to market trends and needs include:

- What communities are dependent on the species x fishery?
- Have changes in infrastructure (docks, marinas, fish houses) affected fishing opportunities for species x?
- How have fishermen and communities adapted to changes in the species x fishery?

Available Data Sources:

- ACCSP and SEFSC commercial landings datasets
- SEFSC commercial logbook
- MRIP/SEFSC recreational landings dataset
- RQ and other Social indices
- Fishery Performance Reports

Examples:

- Commercial revenue:
  - "From 2015 through 2019, Shadow Shark landings represented approximately 13% of total dockside revenue from trips that landed Shadow Shark."
  - "Combining all sources of revenues…annual dockside revenue from Shadow Shark landings represented, on average, approximately 3% of the total dockside revenue from all commercial landings from 2015 through 2019. Average annual dockside revenue per vessel from all landings was $37,307 as compared to $1,128 per vessel from Shadow Shark only."

- Comparison of ex-vessel value and landings to other species (commercial):

**Table 1**. Top ten species managed by the South Atlantic Council ranked by ex-vessel value and weight of commercial landings, average from 2016-2019.

| Top Ten Species by Ex-Vessel Value | |
|---|---|
| **Species** | **Ex-Vessel Value (2016 Dollars)** |
| Spiny Lobster | $40,328,526 |
| White Shrimp | $29,634,588 |
| Brown Shrimp | $12,137,682 |
| Unclassified Shrimp Species[1] | $8,212,738 |
| King Mackerel | $6,154,266 |
| Yellowtail Snapper | $5,466,799 |
| Spanish Mackerel | $3,734,873 |
| Vermillion Snapper | $3,175,041 |
| Shadow Shark | $2,994,056 |
| Golden Crab | $2,442,168 |

| Top Ten Species by Weight | |
|---|---|
| **Species** | **Pounds Landed (ww)** |
| White Shrimp | 10,544,429 |
| Brown Shrimp | 6,029,272 |
| Spiny Lobster | 4,484,799 |
| Spanish Mackerel | 3,018,966 |
| Unclassified Shrimp Species[1] | 2,934,289 |
| King Mackerel | 2,520,961 |
| Yellowtail Snapper | 1,752,051 |
| Shadow Shark | 1,022,784 |
| Vermillion Snapper | 901,741 |
| Greater Amberjack | 900,518 |

[1]Species not specified.

- Comparison of directed effort and landings to other species (recreational):

**Table 2**. Top ten species managed by the South Atlantic Council ranked by directed recreational fishing trips and by weight of recreational landings, average from 2016-2019.

| Top Ten Species by Directed Trips | |
|---|---|
| **Species** | **Directed Trips[1,2,]** |
| Dolphin | 938,251 |
| Spanish Mackerel | 866,158 |
| King Mackerel | 474,676 |
| Gray Snapper | 444,020 |
| Shadow Shark | 417,566 |
| Yellowtail Snapper | 352,616 |
| Black Sea Bass | 203,718 |
| Mutton Snapper | 163,440 |
| Wahoo | 96,688 |
| Gray Triggerfish | 84,595 |

| Top Ten Species by Weight of Harvest | |
|---|---|
| **Species** | **Pounds Landed (ww)** |
| Dolphin | 6,537,000 |
| Shadow Shark | 1,662,074 |
| King Mackerel | 1,455,438 |
| Wahoo | 1,282,298 |
| Spanish Mackerel | 1,054,063 |
| Greater Amberjack | 1,040,608 |
| Yellowtail Snapper | 792,158 |
| Gray Snapper | 604,224 |
| Mutton Snapper | 536,164 |
| Red Snapper | 355,073 |

[1]Directed trips include the number of individual angler trips, regardless of duration, where the intercepted angler indicated that at least one species managed by the SAFMC was the primary or secondary target for the trip or at least one of these species was harvested.
[2]Trips are not additive across species since multiple species may be harvested/targeted on the same trip.

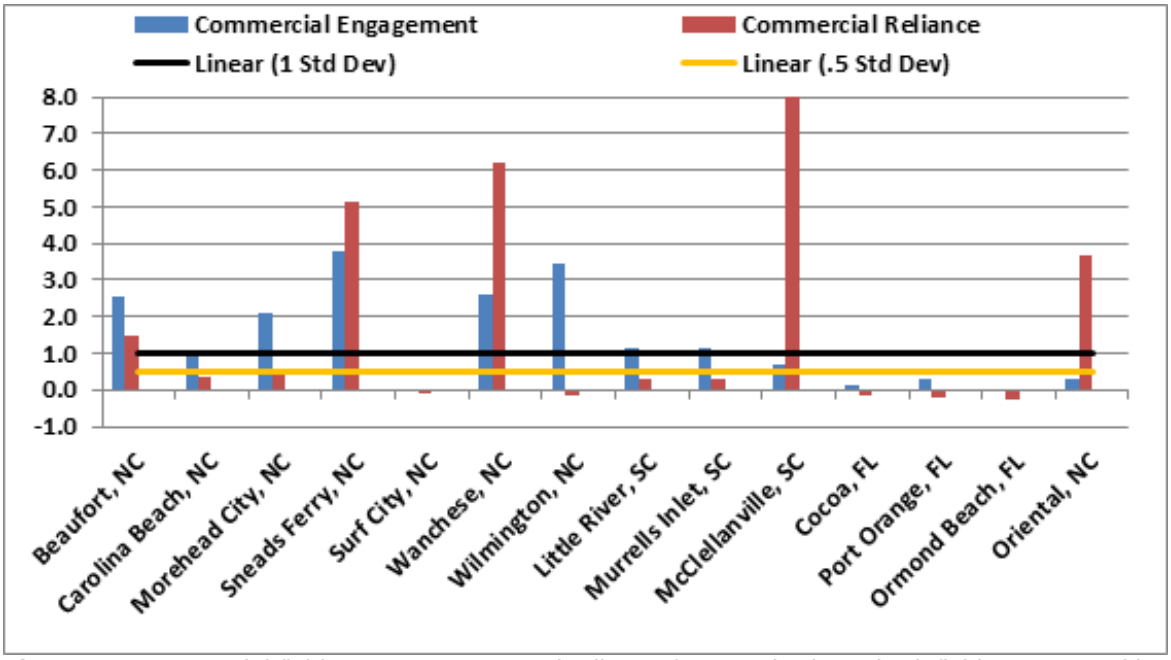



**Figure 5.** Commercial fishing engagement and reliance for top Shadow Shark fishing communities.

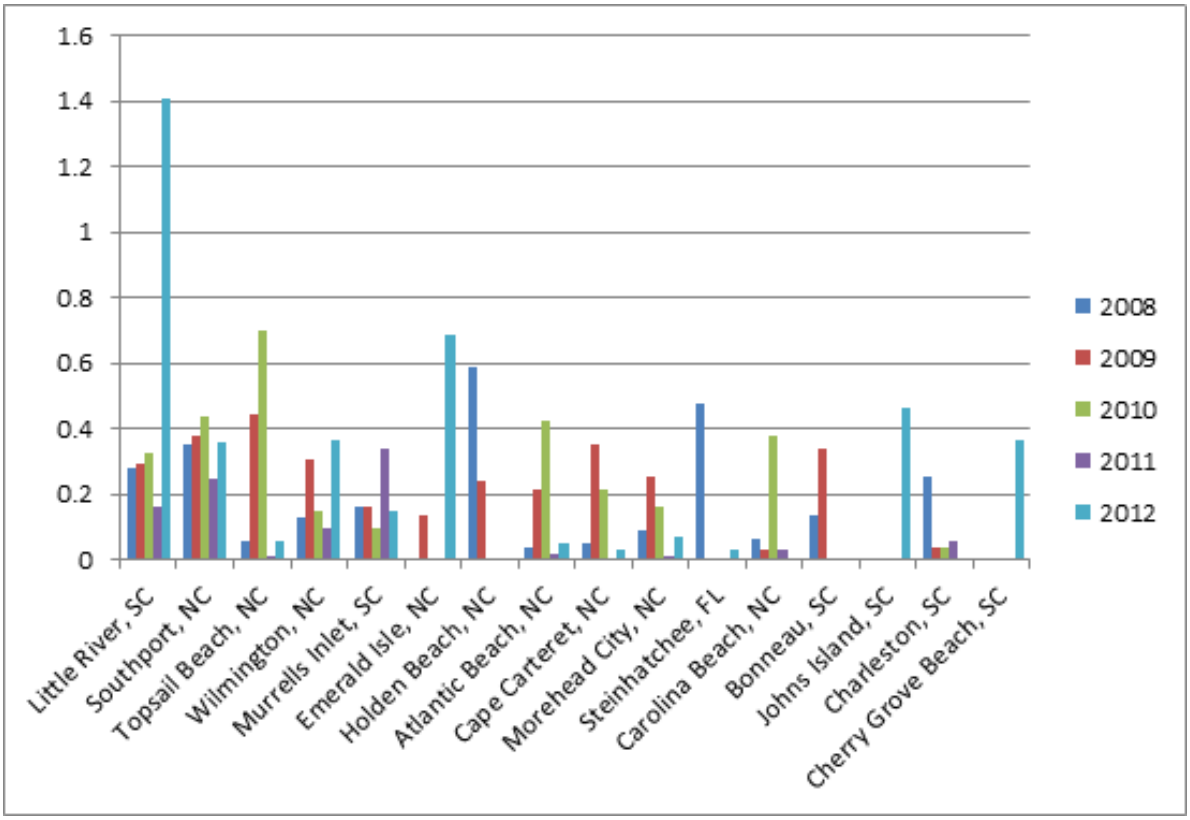



**Figure 6.** Combined vessel local quotients (LQs) for Shadow Shark harvested with bandit gear in the top communities for 2008-2012.

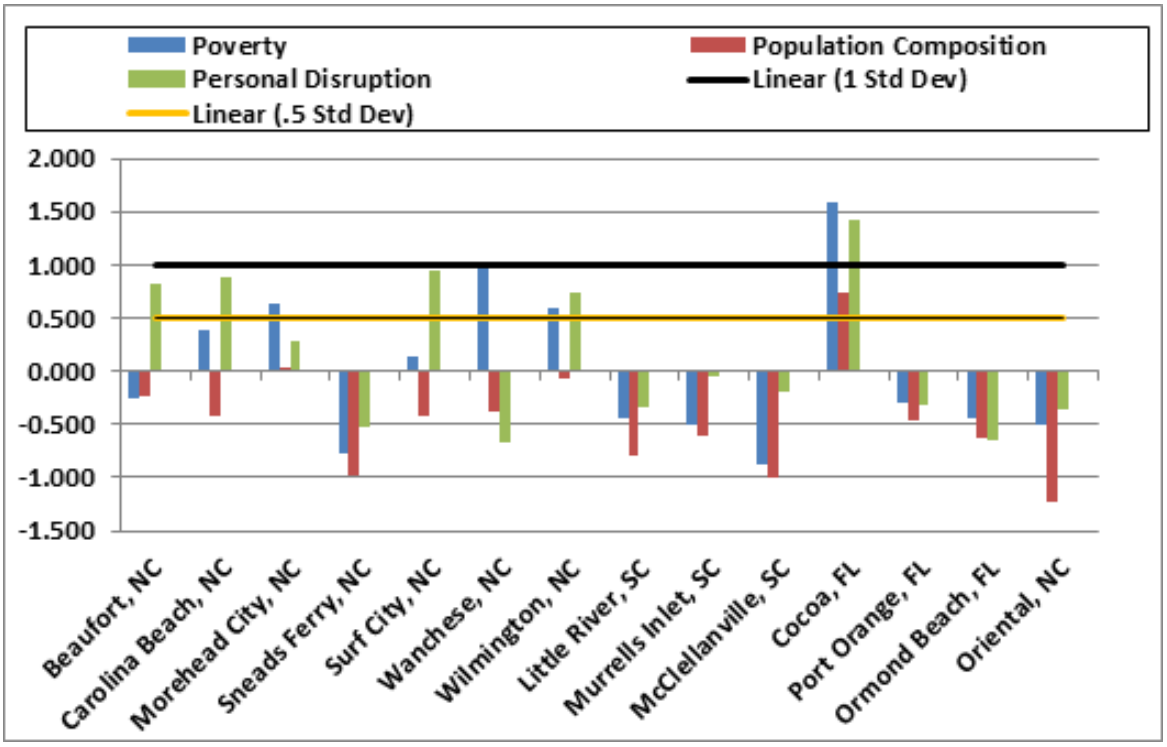



**Figure 7.** Social Vulnerability indices for Shadow Shark fishing communities in terms of pounds and value regional quotient in the South Atlantic.

## Cultural Importance

Oral histories involve the collection of historical information through the eyes of those who experienced both important events and everyday life. Collecting and synthesizing oral histories helps to document the human experience and how it relates to changes in the biological, economic, and social environment and can help illuminate the cultural importance of a species or sector.

*Voices* is a project begun by NMFS in 2003 to collect oral histories from fisheries stakeholders throughout the United States. The *Voices* project includes oral histories from commercial and recreational fishermen, managers, scientists, restaurateurs, and other fishery stakeholders. These oral histories can be used to provide historical context to fishery issues, illuminating key themes and the cultural importance of a fishery. Note that not all oral histories contained within the *Voices* database have been transcribed. Specific projects that have information from the South Atlantic region are below:

- 1997 North Carolina Fisheries Reform Act Oral Histories
- Changes in the Florida Marine Ecosystem
- Gathering, Preserving, and Sharing Traditional Fisheries Knowledge from Down East Communities in North Carolina
- Georgia Black Fishermen
- Lowcountry Maritime Project
- Matanzas Voices
- SERO Fishery Manager Oral History Project
- Voices from the Science Centers
- Wild Caught: The Life and Struggles of an American Fishing Town

- Fishing Traditions & Fishing Futures in Georgia.
- NOAA 50th Anniversary Oral History Project

Available Data Sources:
- Voices oral history database
- Fishery Performance Reports

Examples:
Information from the Fishery Performance Report for Shadow Shark that was completed by the Shadow Shark Advisory Panel during their April 2019 meeting:

- While no one community may be dependent on a single species, people still depend on many species to make ends meet. Any time a species is taken out of the catch, the trip becomes less profitable for both commercial and charter vessels. Shadow shark are "part of the puzzle, and they're an important part of the puzzle".
- Asked how fishermen and communities have adapted to changes in the shadow shark fishery, a commercial dealer from South Carolina recounted a time when tight regulations were first implemented (2012-2013) and commercial fishermen had to make changes to adjust to the changing regulatory climate.
- Some AP members reiterated that businesses and consumers suffer when access to the shadow shark is closed for them. There really is not any way to adapt to that.

## Informed Judgement

There are circumstances where the Council has relied on their knowledge of the needs of a fishery and feedback from constituents to use informed judgement to set allocations. One example of this was the Council's approach to establishing allocations in the Dolphin fishery when implementing the initial Dolphin Wahoo Fishery Management Plan (FMP)(SAFMC 2003). In the initial FMP, the Council established a non-binding cap of 1.5 million pounds, or 13% of total Dolphin landings, to the commercial sector. The Council noted that this cap weighed the historic recreational importance of the fishery with increasing commercial landings. They felt that this split reflected recent landings but also best achieved the goals of the FMP: 1) address localized reduction in fish abundance; 2) minimize market disruption; 3) minimize conflict and/or competition between recreational and commercial user groups; and 4) optimize the social and economic benefits. The Council has since gone with a more landings-based approach to setting Dolphin allocations in the Comprehensive ACL Amendment (Amendment 2 to the Dolphin Wahoo FMP), Amendment 5, and Amendment 8. However, while the current Dolphin ACL allocation is based on landings it is worth noting that the current commercial ACL of 1,534,485 pounds is close to the initial non-binding cap of 1.5 million pounds established in the initial FMP.

Another example of using informed judgement to set allocations is in the Spanish Mackerel fishery. Allocations for Spanish Mackerel were originally set in Amendment 2 to the Coastal Migratory Pelagics (CMP) FMP using the average ratio of catch from 1979 through 1985. However, shortly thereafter the Council chose to revise the allocations to a 50/50 split between the commercial and recreational sectors (Amendment 4 to the CMP FMP). The rationale for this change was based on Council knowledge at the time and included concerns that the recreational effort had been negatively affected by increasing commercial effort in the 1970s and recreational catch was much higher in the mid-1970s. Additionally, since capacity and demand of both

sectors had expanded such that either group could harvest all of the available resource, making a 50/50 allocation was the most equitable. The Spanish Mackerel allocation was further revised based on the Council's judgement via a 1998 framework amendment because commercial catches were increasing and exceeding their quota while the recreational sector remained well below their ACL.

An additional circumstance where the Council used informed judgement in setting allocations occurred when allocations for Red Porgy were implemented through Amendment 15B to the Snapper Grouper FMP. A 50/50 split of the total ACL between the commercial and recreational sectors was selected because it was closest to status quo at the time (2001-2003 landings were 51% recreational and 49% commercial). The Council discussed needing to adjust the total allowable catch if the commercial sector was allocated greater than 50% as they were concerned that discards would increase due to a higher commercial discard mortality.

Available Data Sources:

- Public Comments
- Fishery Performance Reports

## Step I. Decision Tree Approach

Making sector allocation decisions is a difficult and complicated process. To help the Council incorporate other sources of information, in addition to landings, when making sector allocations, Council staff are recommending the Council explore the use of a Decision Tree Approach to help the Council determine salient issues when discussing sector allocations. A Decision Tree Approach is a systematic methodology that uses the same question pattern, or tree for each species considered. As a question is answered, the tree "branches", or directs to the next question to be answered, and so on, until all the relevant questions are answered, and a course of action is recommended for that species. By using a method like this to narrow down the focus, the Council can zero in on the most important factors to consider for each species when making sector allocation decisions. This methodology will take time to develop and will need to undergo rigorous review including by the SSC and the SEP. The following items outline the approach:

1. The five decision trees are slightly modified from the original GAO criteria definitions:
    - Landings history
    - Stock assessment results
    - Biological/ecosystem factors
    - Economic factors
    - Social factors
2. Each species would pass through all five decision trees.
3. Some decision trees may not provide a relevant outcome for a given species.
4. A question in one decision tree could be applicable to another tree, too.

The first of the five recommended criteria, landings history, is what the Council has primarily relied upon in the past. This information is available for species by sectors and can be applied consistently. Depending on how the decision questions are worded, the landings decision tree could provide insight into whether the current allocations are working or not. For example, a decision tree could recommend the Council explore whether one sector could benefit from increased allocation without harming the ability of the other sector to continue to land fish.

## Draft Decision Tree Questions

### Landings Decision Tree

1. Has either sector met or exceeded its ACL in two of the past five fishing years?
2. If a sector has exceeded or met its ACL in two of the past five fishing years, has it met its ACL in the last two months of the fishing year?
3. Has either sector underharvested its ACL by at least 40% in two of the past five fishing years?
4. Has the rate of participation in the fishery increased in recent years?
5. How many other species are commonly caught on trips with this species?

### Stock Assessment Decision Tree

1. Did the stock status change to overfishing?
2. Did the stock status change to overfished?
3. Did the stock status change from overfishing or overfished?
4. Is the stock making adequate progress in a rebuilding program?
5. Is the stock rebuilt?

### Biological/Ecological Decision Tree

1. Are there changes in the rate of bycatch?
2. Are there changes in the rate of dead discards?
3. Is there a high rate of bycatch?
4. Have fishermen changed how they target the species?
5. Do fishermen negatively interact with habitat when fishing for this species?

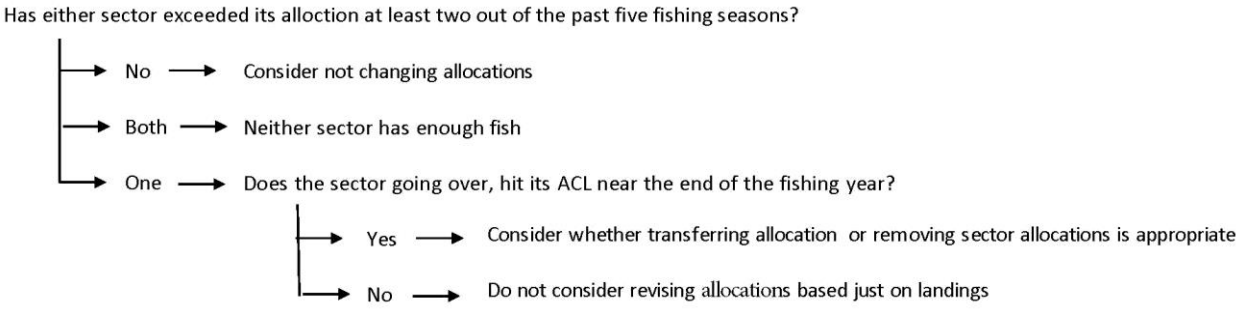
### Economic Decision Tree

1. What are the trends in demand for the species?
2. How economically important is the species?
3. Are there clear indications that changing allocations will likely yield net economic benefits?
4. Are there notable distributional (geographically or user group) economic effects from changing allocations?
5. Is it possible to make one sector better off without economically harming the other sector?

### Social Decision Tree

1. To what extent are recreational fishermen dependent on the resource for trip satisfaction?
2. To what extent are commercial fishermen dependent on the resource for their livelihood?
3. How much importance do recreational and/or commercial fishermen place on the resource?
4. How many communities with a high regional quotient for the resource are highly engaged in commercial and recreational fishing?
5. How many communities with a high regional quotient are highly vulnerable to changes in the management environment?

### Example Decision Tree Scenario




## Step II. Working with Decision Tree Results

With five separate decision trees there are many different combinations of results that could occur. The most straightforward result of all would be that all the decision trees would give the Council in the same sector allocation advice.

It is possible that not all decision trees are going to have input every time for every species. This could be because there may not be relevant data readily available that can inform the answers to the questions asked in that tree, or the answers to the questions, while there may be data available, may not have anything relevant to add to making a decision about sector allocations for a given species. For example, there may not be relevant social information from which to make a sector allocation recommendation from that decision tree.

The most plausible outcome it seems is that with five decision trees, it is not likely that all of them will point to the same sector allocation recommendation. The Council is then left with how to resolve the differences between the decision trees. Council staff is making several recommendations at this point to help the Council make a final decision on its course of action.

The first recommendation is that prior to applying the decision tree method to any species, the Council could provide a single rank order to the five decision trees based on various characteristics such as confidence in the data, overall importance to the success of the fishery, etc. Having this information ahead of time can help in cases where the decision trees themselves lead to situations where it is unclear from the decision trees on which direction to go.

The second recommendation is to go with the preponderance of the decision tree recommendations. If four decision trees make a recommendation and three of them point towards one solution while the fourth one points to a different solution, the Council should follow the recommendation of the three decision trees.

If the overall recommendation from the various decision trees is not clear, for example, none agree, this is where the prior rank ordering of the decision trees would be used to make the final decision. The recommendations of the decision tree with the highest ranking that gave a viable solution is the one that would be followed.

## Timeline for Upcoming Assessments

**Table 3.** Timeline for development of the decision tree approach to allocations

| Action | Timing |
|---|---|
| Council Approves Decision Tree Approach | September 2020 |
| Staff Develops Decision Trees | Winter 2020/2021 |
| Review by the SEP and SSC | April/May 2021 |
| Review by the Council | June 2021 |
| Staff Modifies Trees Based on Input | Summer 2021 |
| Final Decisions Trees to Council | September 2021 |

| Assessment | Tentative Timeline for Assessment Amendments | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Sep 2020 | Dec 2020 | Mar 2021 | Jun 2021 | Sep 2021 | Dec 2021 | Mar 2022 | Jun 2022 | Sep 2022 | Dec 2022 |
| Red Porgy | O | Doc | Doc | Doc | Doc | PH | Doc | A | | |
| King Mackerel | | O | S | | Doc | PH | Doc | A | | |
| Yellowtail Snapper | | AR | O | | S | Doc | PH | Doc | A | |
| Snowy Grouper | | AR | O | S | Doc | PH | A | | | |
| Greater Amberjack | | | O | S | Doc | Doc | PH | Doc | A | |
| Golden Tilefish | | | | AR | O/S | Doc | PH | Doc | A | |
| Red Snapper | | | | AR | O/S | PH | Doc | A | | |

| Timeline Key | |
|---|---|
| **O** | Initial Options Discussion |
| **S** | Approve for Scoping |
| **PH** | Approve for Public Hearings |
| **Doc** | Council Review of Amendment |
| **A** | Final Approval by Council |
| **Red** | Statutory Deadline |
| **Yellow** | 1-2 Hours of Discussion |
| **Orange** | 3-4 Hours of Discussion |

## Alternatives for Unassessed Species

- Alternatives for unassessed species (no action, updated bowtie **with FES** numbers, commercial poundage stays the same).

| Species/Complex | Alternative | % Comm | % Rec | Total ACL | Comm ACL | Rec ACL |
|---|---|---|---|---|---|---|

| | | | | | | |
|---|---|---|---|---|---|---|
| Atl. Spadefish | No Action | 18.53% | 81.47% | 812,478 | 150,552 | 661,926 |
| | Same % Allocation | 18.53% | 81.47% | 1,976,097 | 366,171 | 1,609,926 |
| | Bowtie | 5.20% | 94.80% | | 102,757 | 1,873,340 |
| | Same Comm | 7.62% | 92.38% | | 150,552 | 1,825,545 |
| Bar Jack | No Action | 21.25% | 78.75% | 62,249 | 13,228 | 10,417 |
| | Same % Allocation | 21.25% | 78.75% | 105,363 | 22,390 | 82,973 |
| | Bowtie | 16.18% | 85.56% | | 17,048 | 90,148 |
| | Same Comm | 12.55% | 87.45% | | 13,228 | 92,135 |
| Black Grouper* | No Action | 36.88% | 63.12% | 262,594 | 96,844 | 165,750 |
| | Same % Allocation | 36.88% | 63.12% | 784,366 | 289,274 | 495,092 |
| | Bowtie | 15.85% | 84.15% | | 124,322 | 660,044 |
| Gray Triggerfish | No Action | 43.56% | 56.44% | 717,000 | 312,325 | 404,675 |
| | Same % Allocation | 43.56% | 56.44% | 1,015,605 | 442,398 | 573,207 |
| | Bowtie | 33.69% | 66.31% | | 342,157 | 673,448 |
| | Same Comm | 30.75% | 69.25% | | 312,325 | 703,280 |
| GA-NC Hogfish | No Action | 69.13% | 30.87% | 33,930 | 23,456 | 10,474 |
| | Same % Allocation | 69.13% | 30.87% | 29,039 | 20,075 | 8,964 |
| | Bowtie | 77.64% | 22.36% | | 22,546 | 6,493 |
| | Same Comm | 80.77% | 19.23% | | 23,456 | 5,583 |
| Scamp* | No Action | 65.34% | 34.66% | 335,744 | 219,375 | 116,369 |
| | Same % Allocation | 65.34% | 34.66% | 282,864 | 184,823 | 98,041 |
| | Bowtie | 58.90% | 41.06% | | 166,607 | 116,144 |
| Deepwater Complex | No Action | 77.26% | 22.74% | 169,896 | 131,269 | 38,627 |
| | Same % Allocation | 77.26% | 22.74% | 243,222 | 187,914 | 55,309 |
| | Bowtie | 70.66% | 29.34% | | 171,861 | 71,361 |
| | Same Comm | 53.97% | 46.03% | | 131,267 | 111,955 |
| Jacks Complex | No Action | 41.43% | 58.57% | 457,221 | 189,424 | 267,797 |
| | Same % Allocation | 41.43% | 58.57% | 552,521 | 228,910 | 323,612 |
| | Bowtie | 28.12% | 71.88% | | 155,369 | 397,152 |
| | Same Comm | 34.28% | 65.72% | | 189,404 | 363,117 |

| Species/Complex | Alternative | % Comm | % Rec | Total ACL | Comm ACL | Rec ACL |
|---|---|---|---|---|---|---|
| Snappers Complex | No Action | 22.76% | 77.24% | 1,513,883 | 344,575 | 1,169,308 |
| | Same % Allocation | 22.76% | 77.24% | 3,010,443 | 685,177 | 2,325,266 |
| | Bowtie | 12.32% | 87.68% | | 370,887 | 2,639,556 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | Same Comm | 11.45% | 88.55% | | 344,696 | 2,665,747 |
| Grunts Complex | No Action | 26.06% | 73.94% | 836,025 | 217,903 | 618,122 |
| | Same % Allocation | 26.06% | 73.94% | 1,455,128 | 379,206 | 1,075,922 |
| | Bowtie | 20.70% | 79.30% | | 301,212 | 1,153,917 |
| | Same Comm | 14.97% | 85.03% | | 217,833 | 1,237,296 |
| Shallow-Water Complex | No Action | 53.31% | 46.69% | 104,190 | 55,541 | 48,649 |
| | Same % Allocation | 53.31% | 46.69% | 141,354 | 75,356 | 65,998 |
| | Bowtie | 44.88% | 55.12% | | 63,440 | 77,914 |
| | Same Comm | 39.29% | 60.71% | | 55,538 | 85,816 |
| Porgy Complex | No Action | 25.37% | 74.63% | 143,262 | 36,352 | 106,910 |
| | Same % Allocation | 25.37% | 74.63% | 234,482 | 59,488 | 174,994 |
| | Bowtie | 19.81% | 80.19% | | 46,451 | 188,031 |
| | Same Comm | 15.50% | 84.50% | | 36,345 | 198,138 |
| * Black Grouper and Scamp do not have the "Same Comm" alternative due to the fact that their total ACLs were set by a different methodology currently then they were previously. Therefore, you would expect the commercial ACL to change since the total ACL changed not just from the change to the FES numbers but also from the change in how the ACL was determined. | | | | | | |

## Council Action

- Direct staff to continue work on decision tree approach.
- Approve/modify the timeline.
- Give staff direction on how often and what type of progress reporting they want on the progress and development of the Decision Tree Approach.
- Provide guidance on alternatives for unassessed species
- Other direction to staff.