

MEMORANDUM

TO: Council, SSC and AP Members
FROM: Chris Oliver *Chris*
Executive Director
DATE: September 23, 2004
SUBJECT: Groundfish Management

ESTIMATED TIME 10 HOURS all D-3 items

ACTION REQUIRED

- (b) Receive report from Non-Target Species Committee
- (c) Review initial discussion paper on rockfish management

BACKGROUND

Non-Target Species Committee

The Non-Target Species Committee was formed in October 2003. Its first three meetings were informational and fact-gathering. In May 2003, it convened jointly with the ad hoc working group, comprised of Scientific and Statistical Committee and Plan Team members, to review the draft problem statement, objectives, and suite of management alternatives recommended by the group for analysis (Item D-3(b)(1)). At its fourth meeting, the committee adopted a draft problem statement for Council consideration. The committee requested guidance from the Council on whether its mission to address management of non-target species should be expanded to address management of target species also. Specifically, the committee expressed interest in addressing the management of target rockfish under Agenda Item D-3(c), noting that the same species may be a target in the Gulf of Alaska, but not a target in the Bering Sea or Aleutian Islands. A summary of the May 2004 meeting is provided under (Item D-3(b)(2)). The committee will convene again on November 15 to draft a problem statement for non-target rockfish and a suite of alternatives for the framework for the non-target species category. The committee will report to the Council again in December.

Rockfish Management

In June 2004, the Council requested that staff prepare a discussion paper on appropriate management elements related to rockfish management that would guide the Council in all future FMP actions. Specifically, staff was directed to address current management policy, potential changes to harvest rates as recommended by Goodman et al. (F₄₀ Review), alternative management measures (e.g., spatial management), and habitat considerations.

As a first step, Council and ADF&G staff met with the Rockfish Working Group (RWG), comprised of AFSC rockfish assessment scientists in September 2004. The RWG will contribute to preparation of the paper. The RWG recommended that the paper address a Scientific and Statistical Committee request from December 2003 (Item D-3(c)(1)), specific management issues it identified (Item D-3(c)(2)), and previous RWG reports provided to the Council in 2003.

The paper will examine the following key themes for rockfish management:

- Current management regime
- Data and survey needs (includes Observer Program)
- Species identification/stock structure
- Discards
- Management of species at the end of their range
- Management of small quotas
- Habitat issues
- Alternative management strategies
 1. full retention
 2. spatial management (time/area closures)
 3. refugia
- Overlap with other ongoing proposed management actions
 1. GOA rockfish pilot project
 2. GOA groundfish rationalization
 3. Non-target species management
 4. Habitat areas of particular concern
 5. Full retention of shortraker and rougheye rockfishes
 6. Plan Team recommendation to remove dark rockfish from the GOA and BSAI Groundfish FMPs
 7. Plan Team recommendation to remove black and blue rockfishes from the BSAI Groundfish FMP

NON-TARGET SPECIES MANAGEMENT

AGENDA D-3(b)(1)
OCTOBER 2004

Ad Hoc Working Group Recommendations for Non-Target Species Management May 2004

Proposed problem statement:

The current management regime may not provide appropriate protection for all species in the ecosystem impacted by the groundfish fisheries, including species for which little biological information is available. For example, data-poor species are often managed as part of a multi-species complex, which carries the risk that individual species within the complex may be overfished even though the complex catch is within harvest guidelines. Additionally, data-poor species are often stocks with low population sizes and low catch quotas that may severely tax the ability of our current regulatory system to manage these species without unduly limiting fisheries in which these are taken as bycatch. The catch quotas for data-poor species are typically derived from maximum sustained yield considerations, and alternative management goals such as protection of the stock may be more appropriate for low-valued stocks.

Proposed goal statement:

The goal for managing “non-target species” is to prevent overfishing, maintain healthy stocks, and rebuild depressed stocks, while providing for sustainable groundfish fisheries.

The most direct and effective way to prevent overfishing, maintain healthy stocks, and rebuild depressed stocks is to control the level of harvest by setting individual TACs for each species. However, monitoring the catch and assessing the status of hundreds of individual species is an unwieldy task requiring considerably more data collection, analysis, and monitoring resources than are presently available.

Applying TAC at a level higher than species (e.g., assemblages or species complexes) to improve efficiency with some sacrifices in effectiveness is currently the practice for some target and non-target species. However, a potential problem exists when a TAC is applied at a level above individual species. Species within the aggregate complex often have different levels of productivity and vulnerability to overfishing. If catch accounting is at the aggregate level, but the less productive species are harvested at disproportionately high levels, the species that exhibits lower productivity within the complex could be subject to overfishing even when the overall TAC for the complex is not exceeded.

Aggregate TACs are presently used to manage some North Pacific fisheries (e.g., Other Rockfish and Other Flatfish target species categories). The risk to less productive species can be monitored and prevented in practice, as long as the catch for each species within the complex is estimated. However, often information on species composition within non-target categories (e.g., “other species”) is limited, making it difficult to monitor less productive components within the aggregate TAC. While setting aggregate TACs may be a necessary step initially due to data limitation, stock assessment and Plan Team scientists have recommended that the TACs should be set at the lowest practical level of aggregation and should attempt to include other measures to minimize potential overfishing of less productive stocks within the complex. Management by TACs is most effective at the species level or lower, and emphasis on this management tool implies that data collection efforts should be directed at eventually providing appropriate information to manage all species at that level.

NON-TARGET SPECIES MANAGEMENT

Proposed objectives:

Increasing protection to non-target species places greater management emphasis on maintaining healthy fish stocks of non-target and forage fish, reducing bycatch and bycatch mortality, reducing discards, and using a precautionary approach when making decisions, while providing a future in which the American people are able to enjoy the wealth and benefits of diverse and self-sustaining living marine resources (NMFS 2001). The objectives used in shaping these policy decisions are listed below:

1. In the event of overfishing, maintain healthy stocks, and rebuild depressed stocks of non-target species
2. Maintain healthy stocks important to commercial, recreational, and subsistence fisheries
3. Prevent overfishing and rebuild depressed stocks important to commercial, recreational, and subsistence fisheries
4. Increase long-term economic and social benefits to the nation from living marine resources
5. Protect, conserve, and restore living marine resource habitat
6. Minimize discards by developing management measures that encourage the use of gear and fishing techniques that minimize discards
7. Use the precautionary approach when making decisions, and
8. Conform to the Magnuson-Stevens Act National Standards and the Council's Comprehensive Goals.

Proposed Alternatives for analysis

Alternative 1. No action.

Alternative 2. Eliminate "other species" complex and manage squids, skates, sculpins, sharks, and octopi as separate complexes under specification process
Option: Add grenadiers

Alternative 3. Revise the BSAI and GOA groundfish FMPs to:

Part 1. Revise the target species category for fisheries¹ only

Part 2. Identify a new non-target species category

Option. Revise the forage fish category to include additional species from the current target and non-specified species categories

Part 3. List the species in each management category

Option 1. Do not list any species in each management category

Option 2. List species in each management category

¹The MSA defines "fishery" as "(A) one of more stocks of fish which can be treated as a unit for purposes of conservation and management and which are identified on the basis of geographical, scientific, technical, recreational, and economic characteristics; and (B) any fishing for such stocks."

Part 4. Identify a *policy* based on scientific *criteria* to determine single species or assemblage management

Step 1. Separate species that are currently in the target category into:

- (a) target species category, if there is an intent by the commercial fishery to catch and market it; OFL and ABC would be set for each species, but TAC could be set for assemblages)
- (b) non-target species category for all remaining single species and all species complexes with no industry intent to catch/market it; ***OFL, ABC, and TAC would not be set***

Step 2. Characterize non-target species as:

- (a) sensitive
- (b) non-sensitive

Step 3. Manage:

- (1) fisheries in the target species category under status quo management;
- (2) non-target species category by protecting them from negative fishing effects of the fisheries:
 - (a) sensitive species: protection measures (maximum retainable allowances, closed areas, seasonal apportionments, etc.);
 - (b) non-sensitive species: monitor only (details to be decided)

Part 5. Identify a *policy* based on scientific *criteria* to determine when sufficient data are available to move species between the target and non-target species categories (*yet to be drafted subject of future ad hoc group meeting?*)

Alternative 4. Revise the BSAI and GOA groundfish FMPs to:

Part 1. Define the fisheries in the target species category as single species only; OFL and ABC would be set for each species, but TAC could be set for assemblages

Part 2. Remove non-target species (including non-specified species, but not prohibited species or forage fish) from the FMPs ***to avoid setting OFL, ABC, and TAC***

Part 3. Identify a *policy* based on scientific *criteria* to determine when sufficient data are available to add species to or remove species from the target species category (*yet to be drafted - subject of future ad hoc group meeting?*)

Staff Notes:

- The GOA Groundfish FMP is not in compliance with the MSA according to a draft NMFS report since it does not specify OFL for the “other species” complex, which is currently managed in the target category.
- It is necessary to balance conflicting goals, which may call for different approaches. That is, the Council will need to balance the goal of minimizing costs and maximizing benefits with the goal of protecting the marine ecosystem and preserving biodiversity. The former calls for a problem specific approach; however, its application becomes complex with multiple conflicting objectives as occurs in a complex fishery management regime. The management system may not be structured to detect certain types of problems in time to solve them effectively. On the other hand, protecting marine ecosystems and biodiversity appears to call for an approach that attempts to predict problems and designs management to prevent them. While this approach may save us from expensive mitigation of advanced problems (e.g., habitat loss) in the long run, it is impossible to predict all types of problems that might occur, and it is necessary to evaluate the likelihood of a given problem as well as the severity of its potential consequences in designing a management system. These decisions would be made objective under a formal policy that considers all aspects of the management system at once, rather than individual species piecemeal.

NON-TARGET SPECIES COMMITTEE MEETING
SEPTEMBER 15, 2004

Members in attendance: Chair Dave Benson, Julie Bonney, Karl Haflinger, Michelle Ridgway, Whit Sheard, Lori Swanson, Paul Spencer, and Lisa Butzner for Thorn Smith. Eric Olsen was absent. Staff support was provided by Sarah Gaichas and Jane DiCosimo. Others in attendance included Sue Hills, Rebecca Reuter, Phil Rigby, Dave Clausen, Mike Sigler, Dean Courtney, Andy Smoker, Tom Pearson, Melanie Brown, John Lepore, and Diana Stram.

The purpose of the meeting was to adopt a problem statement for the management of non-target groundfish species as a framework objective. The committee reviewed draft problem statements from Lori Swanson, Karl Haflinger, and the ad hoc working group. It adopted the following draft problem statement for the framework of separating all groundfish species into target and non-target categories.

The current management regime may not provide appropriate protection for all species in the ecosystem impacted by the groundfish fisheries, including species for which little biological information is available. The current management system also purports to manage species that are not targeted by groundfish fisheries and may be unaffected or minimally affected by groundfish fisheries. These non-target species are often managed as a complex, which carries the risk that individual species within the complex may be overfished while the complex catch as a whole is within allowable catch guidelines. Conversely, attempts to remove these species from complexes often result in single species quotas that constrain targeted groundfish operations. Since many of these non-target species are either not abundant, not well surveyed, or have life histories that are not well understood, the quotas may not be set appropriately. However, obtaining sufficient data to appropriately manage them under the current quota system may be prohibitively expensive or not possible with current sampling technology. In addition, there is no mandate to manage these species for optimum yield so it may be desirable for both management and conservation to move these species outside of the current quota system.

The problem is then one of deciding how to manage data-poor non-target species outside of the traditional yield-oriented framework used for groundfish species, while still maintaining appropriate protection for those species. If yield-based approaches are not used, then other guidelines for acceptable levels of catch must be determined. Also, if acceptable levels of take cannot be determined and catch is still of concern, protection measures outside of the current quota system may also be considered. Additionally, since markets and circumstances change, a process for transitioning in a timely manner between quota-based target and non-target species management should be established.

The committee agreed that the management issue for rockfish, flatfish, and other species was too broad for a uniform problem statement, therefore the committee agreed to develop two problem statements (for the framework (above) and rockfish) and recommended splitting the non-target initiative into three separate analyses. The committee recommended analyzing the framework approach (see ad hoc group recommendations) and alternative management for non-target rockfish simultaneously. The framework would be refined by applying the rockfish example to it. The committee recognized that management problems for non-target rockfishes have been identified separately and have crossover implications, e.g., in the annual specification process, proposals from stock assessment authors to separate species from within complexes, GOA groundfish rationalization, IRIU in the BSAI, PSEIS recommendations.

The committee requested clarification from the Council on the committee's mission statement, regarding the potential for committee involvement with a separate but related management initiative on alternative management strategies for rockfish. The committee noted that a staff discussion paper that is scheduled for review at the December 2004 Council meeting would address both target and non-target

rockfish management. However, the same rockfish species may be a target in the GOA, but not a target in the BSAI.

The committee tentatively identified its next meeting for November 15, 9 am - noon at the AFSC-Seattle (the morning prior to the Groundfish Plan Team meeting). It will review guidance from the Council on whether it should also address target management of rockfish, develop a problem statement for rockfish, and adopt a suite of alternative for the framework for separating all groundfish into target and non-target categories.

The committee requested that AFSC staff provide a briefing on the status of the draft revisions to the National Standard Guidelines and how they may affect proposed management of non-target groundfish species. The committee had reviewed an earlier recommendation of the ad hoc group that would have placed the non-target groundfish species outside of the OFL and OY concepts. This does not appear likely under proposed revisions. An alternate solution would be to remove the non-target species from the groundfish FMPs. This is not the preferred approach because it is believed that the FMPs offer additional protection. The committee also requested that AFSC staff clarify the definition of a "fishery."

NON-TARGET SPECIES MANAGEMENT

AGENDA D-3(c)(1)
OCTOBER 2004

ROCKFISH – General Considerations

1. $F_{40\%}$ Report Recommendations

The SSC received a report in 2002 from Goodman et al., known as the “F40 report,” that recommended consideration of more conservative harvest rates for rockfish species in the GOA and the BSAI. In response, the SSC requested that stock analysts evaluate the harvest strategy for rockfishes during the 2003 TAC setting process. Stock analysts completed two types of analyses. The first analysis, reported in the BSAI SAFE for POP and northern rockfish, was an incorporation of process and measurement error in estimating $F_{35\%}$. The result was a finding that the added uncertainty did not produce a lower F_{ABC} than the status quo harvest policy. The second analysis was reported in a draft manuscript by Drs. Paul Spencer and Martin Dorn, in which they evaluated BSAI POP management parameters using Bayesian stock-recruit analysis. Dr. Spencer summarized that report for the SSC at the December 2003 meeting with a conclusion that the $F_{35\%}$ and $F_{40\%}$ policies are not overly aggressive for the BSAI POP stock. The SSC appreciates the efforts by Drs. Spencer and Dorn, and offers the following considerations for further analysis.

The SSC notes that the Bayesian stock-recruitment analysis used methods adapted from Dorn (2002) applied to the BSAI POP stock. The SSC notes that use of the early 1980’s data that exhibit extremely high year class success is very influential in determining the results. Different data sets with weak recruitment could yield different results. Further, caution is warranted in extrapolating these results to other species. Nevertheless, the SSC supports further analyses and encourages authors to explore alternative spawner-recruit analyses based on subsets of the data and contrast those with an analysis using all of the data.

It is unknown if the loss of older age classes have measurable consequences to stock productivity. The implications depend on whether older/larger individuals contribute to stock productivity disproportionate to their biomass. Relevant questions include: (1) do older individuals have higher reproductive success?, (2) do they spawn in more favorable habitats?, (3) do they spawn at more favorable times of the year?, (4) do the progeny have a higher survival rate?, and (5) do fisheries cause genetic selection such that heritable growth and mortality traits are lost when old fish no longer survive to contribute to reproduction? The answers to these questions are unknown for rockfishes in Alaska, but there are some hints from other species. Older herring consistently spawn days to weeks earlier than younger herring. Genetic selection has resulted from size-selective harvests of populations of short-lived fishes in laboratory studies within just a few generations. Studies on Atlantic cod suggest that migration pathways to spawning grounds may be a learned attribute from older cod. Closer to home, one study in California suggests differential spawning time and increased viability of young from old versus young adult black rockfish. Owing to lack of studies, it is difficult to quantify and incorporate such considerations into harvest specifications. The SSC is concerned that undesired outcomes could occur if exploitation rates are too high for the most productive individuals in the population. This is an area of needed research.

2. Local Depletion

The SSC requests that additional analysis be provided for rockfish regarding:

- a. A listing of species of rockfish which are most likely to be subject to local depletions either due to specific life history characteristics or fishing practices;
- b. The availability of data for those species which could be used to evaluate the occurrence of local depletion; and
- c. The quality of data that would be needed to detect local depletion with reasonable certainty.

NON-TARGET SPECIES MANAGEMENT

3. Disaggregation of ABCs

The general direction of rockfish management is towards increased splitting out of ABCs stock segments. More often than not, there are insufficient or unreliable data to fully support these splits. This characteristic of the data requires that care be taken in determining the splits to ensure that they achieve the Council's conservation objectives, while not inflicting undue economic hardship on members of the fishing community. Where data are found lacking or inadequate, a recommendation should be made on how to improve data availability.

**Rockfish Working Group
Meeting Summary
September 14, 2004**

The RWG proposed to examine a number of issues in the discussion paper:

- Using the tier system as a method for identifying management measures
- Shortraker and rougheye rockfish species identification in the catch – observer program special project – GOA trawl survey reports more rougheye rockfish, while the GOA catch shows more shortraker rockfish
- Requiring retention of rockfish – address biological and legal issues (full retention of DSR not implemented yet)
- Age and growth task – unable to disaggregate species by area in the survey compared with the catch due to small sample sizes – partially due to not collecting what samplers don't think will get read
- Dedicated (slope) rockfish survey that emphasizes habitat type would also improve assessments for “other species” – under Stock Assessment Improvement Plan; trawl survey only adequate for thornyhead rockfish, particularly poor in the EGOA, but slope survey would not assess northern rockfish
- Spatial management – closed areas, refugia. (questionable for rockfishes because so much is unknown about their spatial movements over various life-history stages); could be successfully identified by bottom mapping (habitat); useful to evaluate geographic distribution of a population
 1. identify appropriate species
 2. identify survey vs. fishery (by area)
 3. local depletion/spatial distribution – can have little mixing although the population is broadly distributed (e.g., northern, POP, SR/RE)
 4. Observer Program – does not cover rockfish well; shore plants, small boats
 5. IPHC survey data – has rockfish catch info
 6. 2 species of dusky rockfish – FMP amendments
 7. 2 species of rougheye rockfish – action?
 8. yelloweye rockfish under ADF&G management – closed
 9. NMFS hot spot authority
- Compare the EGOA to the rest of the GOA to determine the effect of the EGOA trawl closure, although this analysis would be complicated due to differences in the age composition of rockfishes inside and outside the EGOA before closure
- Sport harvests – Treating sport harvest as part of the ABC may be important for some rockfish in some areas.
- How to manage species at end of its range (more vs. less). One of the unique features of the BSAI management area is that the EBS slope extends so far north that it represents the edge of the range for some rockfish stocks. A management issue is the degree of conservation required for stocks at the edge of the range. One viewpoint is that because the bulk of the population resides elsewhere, and we should focus our conservation effects on those locations where the bulk of the

population exists. Alternatively, one could view populations at the edge of their range as unique situations requiring additional precaution.

- State “pocket” fisheries – e.g., black rockfish jig fishery in Dutch Harbor
- Create a “formal” relationship between the fleet and managers

The RWG emphasized the following:

- Genetic research to define stock structure is further along in the GOA than in the BSAI
Fine structure: Pacific ocean perch
Broad structure: shortraker rockfish
- No directed fishing for any rockfish species in the BS, some targeting in the AI for POP (July). Target fisheries may develop in the AI, as some species that are not currently targeted in the AI are currently targeted in the GOA (i.e., northern rockfish).
- High discards
- OFL tier 6 may be less conservative (based on average catch)

Participants included Dave Clausen, Dean Courtney, Jane DiCosimo, Jeff Fujioka, Sara Gaichas, Dana Hanselman, Jon Heifetz, Chris Lunsford, Tory O’Connell, Phil Rigby, Paul Spencer, Rebecca Reuter, Kalei Shotwell, Mark Wilkins.