



April 09, 2009

Don Hansen, Chairman
Don McIsaac, Executive Director
Pacific Fishery Management Council
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Re: FMP Amendments to Implement Annual Catch Limit Requirements

Mssrs. Hansen and McIsaac:

The Marine Fish Conservation Network and Natural Resources Defense Council appreciate the opportunity to comment on the scope of fishery management plan (FMP) amendments required to implement the Reauthorized Magnuson-Stevens Act's (MSRA's) annual catch limit (ACL) requirements for the Groundfish FMP. In comments to the National Marine Fisheries Service (NMFS) on the ACL proposed rule, the Pacific Fishery Management Council (PFMC) stated its belief that the Council currently prevents overfishing for the key groundfish species.¹ While we agree that the PFMC's system of management has many laudable features and contains elements called for in the new fisheries law and in the new NS1 Guidelines, we believe that the Groundfish FMP requires significant modifications to comply fully with the law and the new NS1 guidelines.

1. ACLs are required for all stocks in the fishery

The recently published NS1 final rule guidelines for ACLs and AMs (ACL final rule, 74 Fed. Reg. 3178) state that the requirement for ACLs and AMs applies to all stocks in a fishery, and all stocks in the FMP should be considered "in the fishery" unless otherwise specified through rulemaking. 50 CFR § 600.310(d)(1). NMFS requires that all stocks or stock complexes currently listed in the FMP are "stocks in a fishery," including target as well as non-target stocks that are caught incidentally during the pursuit of target stocks in a fishery (including "regulatory discards" as defined under Magnuson-Stevens Act section 3(38), which may or may not be retained for sale or personal use). 50 CFR § 600.310(d)(3-4). The ACL final rule clarifies that all stocks in a fishery *must* have status determination criteria, MSY and OY specification, an ABC control rule, mechanisms for specifying ACLs, and accountability measures. 50 CFR § 600.310(c)(1-5). The ACL final rule reinforces the intent of Congress that the

¹ Pacific Fishery Management Council. Comments on NMFS Proposed Revisions to the Guidance for National Standard 1 of the MSFCMA, September 22, 2008.

scope and applicability of the new ACL requirements be broad and inclusive, consistent with the MSRA's inclusive definitions of "fishery," "fishing," and "stocks of fish." § 16 U.S.C. 1802.

The revised NS1 guidelines create a new FMP category of "ecosystem component" (EC) species to improve ecosystem-based management. The guidance for classifying EC species specifies that they must be non-target species, not subject to overfishing, and not generally retained for sale or personal use. 50 CFR § 600.310 (d)(5)(A)-(D). If a council elects to classify a non-target bycatch species as an EC stock, it must implement measures to minimize bycatch consistent with National Standard 9 and protect their role in the ecosystem. 50 CFR § 600.310(d)(5)(iii). Classification as EC species must not be used to avoid setting ACLs for stocks that properly require them.

To the extent that stocks in the Groundfish FMP do not comply with these requirements, we believe that the FMP must be modified accordingly.

Under the current 2009-2010 Pacific groundfish specifications, numerical catch limits are established for 31 species or stock complexes within the groundfish FMP,² but it is not clear that all 92 species or separate stocks in the FMP are explicitly covered by stock-specific or stock complex ABCs, ACLs, and accountability measures. The Council should clearly specify that all stocks in the FMP are addressed or modify its catch specification process beyond 2010 to ensure that all stocks in the FMP have the required status determination criteria, MSY and OY specification, an ABC control rule, mechanisms for specifying ACLs, and accountability measures. 50 CFR § 600.310(c)(1-5). If stock-specific ABCs, ACLs and AMs are not possible, the FMP and future catch specification cycles should clearly demonstrate how stocks were grouped into complexes and assessed for purposes of ABC and ACL specification.

2. To the extent that management by stock complexes is unavoidable, the Council must ensure that stocks are sufficiently similar in geographic distribution, life history, and vulnerabilities to the fishery such that the impact of management actions on the stocks is similar.

We believe that every effort should be made to manage stock with species-specific ACLs and not in multi-species stock complexes. The Council's Scientific and Statistical Committee (SSC) has repeatedly recommended that as a general policy, stocks should be managed based on species-specific catch limits defined through stock assessments, rather than through stock complex aggregate numbers. Supplemental SSC Report April Agenda Item H.1.c April 2008 at 2, Supplemental SSC Report Agenda Item D.4.d November 2007 at 2. Likewise, an expert working group convened by the Lenfest Ocean Program and MRAG Americas noted this concern and proposed as one of their guiding principles that, "[v]ulnerability and the consequences of overfishing primarily relate to individual stocks of fish, and therefore grouping of stocks into assemblages for management can undermine sustainability." Rosenberg, A., et. al. Setting Annual Catch Limits for U.S. Fisheries: An Expert Working Group Report. Lenfest Ocean Program. September 2007.

² See Final EIS for Proposed ABC and OY Specifications and Management Measures for the 2009-2010 Pacific Coast Groundfish Fishery, Tables 2-1a and 2-1b, pp. 14-17.

Where single-stock ACLs are not presently feasible due to lack of information on data-poor stocks occurring in the fishery, the use of stock complex ACLs must incorporate new guidance outlined in the ACL final rule to ensure that stocks are sufficiently similar in geographic distribution, life history, and vulnerabilities to the fishery such that the impact of management actions on the stocks is similar. 50 CFR § 600.310 (d)(8). To underscore the importance of evaluating the vulnerability of data-poor stocks that have been aggregated into stock complexes, the ACL final rule adds a new provision requiring Councils, in consultation with their SSCs, to analyze the vulnerability of stocks in a stock complexes. A stock's vulnerability is defined as a combination of its productivity, which depends upon its life history characteristics, and its susceptibility to the fishery. 50 CFR § 600.310(d)(10). We anticipate that additional technical guidance will be forthcoming from NMFS to assist Councils in this process.

Rosenberg *et al.* (2007) recommended Productivity and Susceptibility Analysis (PSA) as a tool to assess stock vulnerability and risks of overfishing on data-poor stocks, based on a methodology originally developed for Australian fisheries to set more precautionary ACLs for stocks with higher vulnerabilities and greater uncertainties. The PSA methodology measures potential risk of the resource to overfishing by examining several productivity and susceptibility attributes that are scored from high to low risk, and an overall risk score is calculated and plotted on a PSA plot. Thus, for example, stocks that have low susceptibilities and high productivities are considered to have a low vulnerability of becoming overfished, while stocks with low productivities and high susceptibilities would have a high vulnerability of becoming overfished. 74 Fed. Reg. 3185. Some Council SSCs are considering the use of PSA to inform decisions about buffer sizes when setting ABCs as well as the size of the management uncertainty buffer when setting ACLs. The risk score for a species in a particular fishery is used to establish ACLs and AMs, for instance. Under the ACL final rule, current stock complexes are to be assessed through PSA and reorganized if individual stocks are found to be dissimilar in terms of geographic distribution, life history, and vulnerabilities to the fishery.

The ACL final rule provides that where the use of stock complexes for data-poor stocks is unavoidable, an indicator stock with measurable status determination criteria (SDC) may be used to help manage and evaluate more poorly known stocks that do not have their own SDC, but it should be representative of the typical status of each stock within the complex, with similar vulnerability. 50 CFR § 600.310 (d)(9). The guidelines are equally clear on the need for ACLs based on indicator stocks to ensure that more vulnerable members of the complex are not at risk from the fishery, and for periodic re-evaluation of the available information to determine whether a stock is subject to overfishing or is approaching an overfished condition. 50 CFR § 600.310 (d)(9).

3. The Council should ensure that its catch specification process for each FMP complies fully with the new requirements of the law and the revised NS1 and NS2 guidelines.

In the revised NS1 guidelines, NMFS requires that Councils establish a mechanism for specifying ABCs and ACLs in the FMP,³ as well as a process for receiving scientific information and advice in the specification of ABC.⁴ The procedures and mechanisms for specifying OFL, ABC, ACL, and AMs

³ See Title 50 of the Code of Federal Regulations, 50 CFR § 600.310(b)(iii).

⁴ 50 CFR § 600.310(f)(3): "Councils should develop a process for receiving scientific information and advice used to establish ABC." This process must establish an ABC control rule (discussed at (c)(3) and (f)(4)), identify the body that will

must be included in each FMP. NMFS also recommends that Councils modify their Statement of Organization, Practices and Procedures (SOPPs) to describe the roles and responsibilities of the Council, SSC, and any peer reviewers in this process.⁵

The PFMC has a formal, well-defined catch specification process for assessed stocks and mechanisms for setting catch limits or bycatch limits for stocks or stock complexes that lack assessments, as well as a working SSC that recommends ABCs to the Council. The information used to calculate status determination criteria, OFLs, and ABCs should be compiled in a Stock Assessment and Fishery Evaluation (SAFE) report for each FMP that describes the information, how it was used, the uncertainty associated with it, and other relevant considerations.

Broadly, we believe that the catch specification process should proceed in a stepwise fashion as follows:

1. Stock assessment review scientists evaluate the status of stocks and recommend an overfishing level (OFL, corresponding to F_{MSY} or proxy) and preliminary ABC, which are then summarized in a draft Stock Assessment and Fishery Evaluation (SAFE) report.⁶
2. The SSC evaluates the information in the draft SAFE report and recommends an ABC level that may not exceed OFL and is based, when possible, on the probability (which cannot exceed 50% and will almost always be significantly less, *see* 50 CFR § 600.310(f)(3)) that an actual catch equal to the stock's ABC would result in overfishing. The ABC must be derived from an ABC control rule that should include a buffer, or margin of safety, to account for the scientific uncertainty in the estimation of OFL. Scientists may recommend ABCs lower than specified in the control rule, based on their evaluation of the uncertainty and risk associated with the data, as long as they clearly explain why. 50 CFR § 600.310(f)(3). The control rule provides the maximum bound on ABC beyond which the SSC recommendation may not go, i.e., any deviation from the rule is more conservative, not less.
3. The Council specifies an ACL that may not exceed the SSC's ABC recommendation, and formulates management measures (AMs) necessary to constrain catch at or below the ACL. Unless adequate inseason management controls are in place to prevent ACL from being exceeded or management uncertainty has already been accounted for in the ABC or ACL, an annual catch target (ACT) should be included in the system of AMs and the ACT should be based on an ACT control rule that specifies the setting of ACT such that the risk of exceeding the ACL due to management uncertainty is low.

In order to comply with the final rule, the Council should review its Standard Operating Procedures and Practices (SOPPs), Council Operating Procedures (COPs), and SSC Terms of Reference (TORs) and amend them as needed to ensure consistency with the required elements of the ACL requirements.

apply the ABC control rule (i.e., calculates the ABC), identify the review process that will verify the resulting ABC, and confirm that the SSC recommends the ABC to the Council.

⁵ See the preamble to the NS1 final rule, 74 Fed. Reg. at 3181. The Statement of Organization, Practices and Procedures (SOPPs) is described in existing regulations at 50 CFR § 600.115.

⁶ National Standard 2 of the MSA states that conservation and management measures shall be based upon the best scientific information available: 16 U.S.C. § 1851(a)(2).

4. Significant modification of the groundfish ABC control rule is needed to address scientific uncertainty and provide an adequate margin of safety against the risk of overfishing

For stocks required to have an ABC, the revised NS1 guidelines specify that each Council *must* establish an ABC control rule based on scientific advice from its SSC. 50 CFR § 600.310(f)(4). The revised NS1 guidelines specify that acceptable biological catch (ABC) may not exceed the overfishing level (OFL). ABC is a level of annual catch that is intended to account for the scientific uncertainty in the estimate of OFL and any other scientific uncertainty, and therefore NMFS expects that ABC will virtually always be significantly reduced from OFL to reduce the risk that overfishing might occur in a given year. 50 CFR § 600.310(f)(3). Moreover, the determination of ABC should be based, *to the extent possible, on the probability that the actual catch equal to the stock's ABC would result in overfishing. The guidelines emphasize that, while the probability that overfishing will occur cannot exceed 50%, it must be significantly less in most cases.* 50 CFR § 600.310(f)(4).

The groundfish FMP employs an explicit ABC control rule for assessed stocks that sets ABC equal to a proxy spawning potential ratio (SPR) for MSY, where the Council-specified proxy for MSY is set at $F_{40\%}$ and the target stock biomass is $B_{40\%}$ (for slower-growing, long-lived West Coast rockfish the ABC is set at the more conservative $F_{50\%}$ level and the target stock biomass is $B_{50\%}$). However, this should more properly be considered an OFL control rule because no explicit uncertainty buffer has been established between OFL and ABC. An ABC control should account explicitly for scientific uncertainty in the estimate of OFL so that $ABC < OFL$.

Precautionary elements to this ABC control rule do exist. The minimum stock size threshold (MSST) is set at $B_{25\%}$, below which rebuilding commences. When a stock biomass has dropped below $B_{40\%}$, fishing mortality is reduced linearly until $OY = 0$ at 10% of $B_{unfished}$. This is the so-called “40-10 rule.” While these elements are praiseworthy, we believe that the PFMC 40-10 rule requires modification to address stock-specific differences in vulnerability due to life history and other factors, and to provide adequate buffer (or margin of safety) between OFL and ABC such that there is a very low risk of overfishing.

Given that there is always uncertainty in the estimate of MSY and OFL, we believe that the ABC control rule should be configured so that ABC is *always* less than the OFL. If the control rule contains multiple tiers to account for different levels of information available for each stock in the FMP, then the system of uncertainty buffers for each tier should provide increasing precaution with decreasing levels of information and increasing uncertainty. The procedure for setting ABC would be as follows:

1. Determine the “overfishing level” (OFL) based on MSY or proxy.
2. Calculate the fishing mortality rate at OFL (F_{OFL}).
3. Calculate the ABC ($< OFL$).
4. Calculate the fishing mortality rate used to set the ABC (F_{ABC}) such that $F_{ABC}/F_{OFL} < 1$. The buffer between F_{ABC} and F_{OFL} increases as the level of uncertainty increases.

For stocks with high levels of information and adequate stock assessments, the uncertainty buffer for ABC may be derived quantitatively from a statistical analysis of the probability that a given ABC will avoid overfishing. In conjunction with this probabilistic analysis and because even so-called data-rich stocks frequently still have uncertainty (and some can be quite high in uncertainty as demonstrated by

retrospective analyses), a vulnerability analysis should be used to determine the magnitude of the buffer. For data-limited and unassessed stocks, it will not be possible to calculate the probability of overfishing in the ABC point estimate. If a probability-based approach is not applicable, then a simple percentage buffer determined from a vulnerability analysis, other research data, and professional judgment will be required.

To guide the development of adequate control rule buffers, we believe that the PFMC should adopt a policy requiring ABCs and ACLs to be set at a level that has a high probability (e.g., 75% or higher) of not exceeding the overfishing level. An expert working group convened by the Lenfest Ocean Program in 2007 to provide scientific recommendations on the implementation of ACLs emphasized the need for fishery managers to consider the acceptable level of risk of exceeding the prescribed OFL when setting ACLs (Rosenberg *et al.* 2007), and we support their recommendation that the groundfish FMP contain an explicit risk policy to achieve that objective in the specification of both ABCs and ACLs.

5. If the ABC control rule is structured to account for different levels of information available for each stock in the FMP, then the system of uncertainty buffers for each category or “tier” should provide increasing precaution with decreasing levels of information and increasing uncertainty.

The revised NS1 guidelines clearly require the PFMC to establish ACLs for all stocks in the FMP, not just those with an assessment. The PFMC groundfish FMP is comprised of many diverse species, but only the major target stocks have stock-specific catch limits while many others are loosely grouped into stock assemblages (stock complexes) for purposes of catch specification. The number of stocks actually “managed” with catch limits or other measures often represents only a small fraction of the total number of stocks in the FMPs, and basic stock status information is lacking or limited for many stocks in the fishery. To facilitate the process of setting ACLs for data-limited stocks in the fishery, the PFMC’s groundfish FMP requires a system of control rules that will provide a basis for setting ACLs in data-poor situations as well as data-rich situations.

Since only about one-quarter of managed groundfish stocks have been assessed in the Pacific region, the Council has established three broad categories for purposes of determining ABC/OY and overfishing levels, based on levels of information available for each stock, which were described in the “SFA” amendments to the groundfish FMP in 1998.⁷ For unassessed and data-poor stocks, options for setting OFLs, ABCs and ACLs include using:

- A percentage or average of catch or bycatch from prior years
- Available fishery-independent research data
- Qualitative measures of stock productivity and vulnerability of stocks to the fishery

Potential indicators of overfishing for unassessed and data-poor stocks could include:

- CPUE from logbooks
- Catch area from logbooks

⁷ PFMC. Amendment 11 to the Pacific Groundfish FMP, Appendix B. October 1998: pp. 5-5 to 5-10.

- Index of stock abundance from surveys
- Stock distribution from surveys
- Mean size of landed fish

If these approaches are used to establish ACLs for data-poor groundfish stocks, the Council should provide a clear explanation of how they were used, the uncertainty associated with their use, and the means by which the Council, in consultation with the SSC, accounted for this uncertainty and has complied with the new guidelines for ACLs and AMs. To the extent that information is more limited and uncertainty is higher, catch limits must be set more conservatively to avoid the likelihood of overfishing. An effective system of ACLs under the new guidelines should provide incentives to acquire better data and reduce the uncertainty associated with specifying catch limits. The use of stock complexes for data-poor stocks should not under any circumstances be used to avoid obtaining better information in order to set ACLs on a stock-specific basis.

6. If the Council adopts a system of ACLs without employing ACTs, the FMP should include a single control rule combining both scientific and management uncertainty in the ABC recommendation and ACL

NMFS recommends that an annual catch target (ACT) be employed as part of the system of accountability measures for management uncertainty in ensuring that the catch does not exceed the annual catch limit (ACL). In most cases, some reduction in the target catch below the limit will result.⁸ In data-poor fisheries without inseason monitoring capability, setting the ACT less than ACL increases the chances of staying within the limit and avoiding frequent overage deductions in subsequent years. If an ACT is not employed within the system of AMs, however, a single control rule combining both scientific and management uncertainty in the ABC recommendation and ACL would be employed as the alternative.⁹ In that case, the ACL would account directly for management uncertainty and optimum yield (OY) factors, such that $ACL < ABC$. Incorporating the management uncertainty (and any relevant OY considerations) directly into the ACL calculation provides a clear basis for setting $ACL < ABC$ while still maintaining ACL as a limit not to be exceeded that triggers management measures to cease fishing. The Council should consider options for specifying ACLs using a control rule that includes explicit treatment of management uncertainty and OY factors.

7. The Council should review its system of management monitoring and enforcement measures to ensure that each FMP contains adequate accountability measures

The new fisheries law requires FMPs to establish a mechanism for specifying annual catch limits such that overfishing does not occur in a fishery, accompanied by measures to ensure accountability. 16 U.S.C. § 1853(a)(15)). The inclusion of accountability measures underscores Congress' intent to ensure compliance with catch limits: the ACL is the level of annual catch of a stock that serves as the basis for invoking AMs (50 CFR § 600.310(f)(2)(iv)); the objective for establishing AMs is that the ACL not be exceeded (50 CFR § 600.310(f)(6)).

⁸ 74 Fed. Reg. at p. 3193.

⁹ 50 CFR § 600.310(f)(7).

In the revised NS1 guidelines, accountability measures are defined as management controls that prevent ACLs or sector-ACLs from being exceeded (inseason AMs), where possible, and correct or mitigate overages if they occur (reactive AMs). In addition to inseason AMs and reactive AMs, AMs may include area closures, changes in gear, changes in trip size or bag limits, reductions in effort, and other appropriate management controls for the fishery. 50 CFR § 600.310(g)(2) and (3). For fisheries without inseason management controls, AMs should include annual catch targets (ACTs) that are set below ACLs to reduce the risk that catches will exceed the ACLs. 74 Fed. Reg. 3178. The PFMC has not employed ACTs as part of a system AMs, but should consider their use for fisheries lacking effective inseason management controls.

Whenever possible, the groundfish FMP should include inseason monitoring and management measures to prevent catch from exceeding ACL. 50 CFR § 600.310(g)(2). If management information is not available to prevent ACLs from being exceeded within the current fishing season, AMs *must* be triggered and implemented as soon as possible to correct the operational issue that caused the ACL overage. 50 CFR § 600.310(g)(3). Annual review is necessary to determine if any ACL was exceeded: evaluation of performance and prompt management actions to address overages are required on an annual basis. 50 CFR § 600.310(g)(3). In some data-poor recreational fisheries, it may be appropriate to consider the use of a system of multiyear average ACLs and AMs based on achievement of a rolling average catch. 50 CFR § 600.310(g)(4). But NMFS intends that evaluation of moving average catch to the average ACL would be conducted annually and that AMs would be implemented if average catch exceeds the average ACL. 74 Fed. Reg. 3197. In addition, the ACL should be set conservatively in such cases to account for the clear management uncertainty inherent in such circumstances.

Councils are also instructed to adopt an ACL performance standard that triggers re-evaluation of the system of ACLs and AMs is working as intended. NMFS provides for some flexibility in the standard: the guidelines state that if the catch of a stock exceeds its ACL more than once in the last four years (i.e., more often than 25% of the time) then the system of ACLs and AMs requires modification, i.e., a lower ACL or improved AM. NMFS states that a more conservative standard could be adopted as deemed appropriate. 50 CFR § 600.310(g)(3). To date, we are not aware that the Pacific Council has adopted a formal ACL performance standard for any of its fisheries.

8. The Council, in consultation with the SSC and the regional science centers, should evaluate and include in the FMP any species or stocks not currently listed in the FMP that qualify as “stocks in the fishery,” based on a vulnerability analysis or other relevant information

Some species not currently listed in the groundfish FMP may be caught incidentally as bycatch and may be retained and sold or utilized at a level that merits inclusion as stocks in the fishery, while others may be identified by scientists as species of concern that merit monitoring and formal designation in the FMP as Ecosystem Consideration (EC) species. The revised National Standard guidelines define the scope of “stocks in a fishery” broadly to include non-target stocks caught incidentally during the pursuit of target stocks in a fishery, including regulatory discards as defined under the Magnuson-Stevens Act section 3(38). 50 CFR § 600.310(d)(4). These non-target stocks may or may not be retained for sale or personal use.

If non-target stocks occur in the fishery only occasionally and in small quantities, and if there is no reason to believe that the quantity of bycatch is biologically significant, based on the best scientific information available, then their inclusion would not be necessary. Determining when the bycatch mortality of non-target stocks is significant enough to merit inclusion as a stock in the fishery, however, is challenging in a data-limited environment where the risk of overfishing is uncertain. One alternative, if scientists are concerned but unsure, is to designate a non-target species as an Ecosystem Component Species (600.310(d)(5), assuming it fits the criteria for EC listing. That designation establishes the species as monitored stock in the fishery, subject to compliance with National Standard 9.

Knowing when a data-poor non-target species in the fishery observer data base should be reclassified as stocks in the fishery or when they merit classification as an EC species will require the best professional judgment of scientists using all the information available. A vulnerability analysis that assesses a stock's productivity and susceptibility to the fishery should be conducted for any species or stock identified as potentially at risk from fishing in order to determine if formal inclusion in the FMP is required.

Conclusion

The new overfishing requirements raise the bar considerably for fishery management performance, although additional technical guidance from the Fisheries Service is needed to support implementation. New agency guidance on methods of assessing the vulnerability of stocks is expected early this spring. In addition, we anticipate technical guidance on methods of establishing ABC control rules, including uncertainty buffers designed to be more conservative as a stock declines in abundance and as uncertainty increases. Finally, the NMFS should work with PFMC to develop methods of addressing ecological factors when setting ACLs to prevent overfishing and achieve optimum yield, including procedures for setting ACLs for forage fish stocks that preserve their role as prey in the ecosystem.

Sincerely,

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