May 26, 2010

BY FAX, EMAIL, and U.S. MAIL

Chairman Ortmann and PFMC Council Members
Pacific Fishery Management Council
7700 NE Ambassador Place, Suite 101
Portland, Oregon 97220-1384

Re: Public Comments on Amendment 23 and 2011-12 Groundfish Specifications and Management Measures Preferred Alternative

Dear Chairman Ortmann and PFMC Council Members:

The organizations of Ocean Conservancy, Oceana, and Natural Resources Defense Council hereby jointly submit the following comments concerning Draft Amendment 23 and 2011-2012 Groundfish Specifications and Management Measures Preferred Alternative. As the Pacific Fisheries Management Council ("Council") is aware, this is a highly significant set of regulatory actions. It constitutes how the Council proposes to bring the Groundfish Fishery Management Plan ("FMP") into compliance with statutory requirements enacted as part of the Magnuson-Stevens Fishery Conservation and Management Reauthorization Act of 2006, P.L. 109-479, that all FMPs include mechanisms to set annual catch limits ("ACLs") "at a level such that overfishing does not occur in the fishery" and accountability measures ("AMs") for the ACLs.[1]

We seek to ensure that Amendment 23 sets appropriate ABCs, ACLs, and AMs each year, and that such rules ensure, based on best available science, that overfishing will not occur in the fishery, consistent with the detailed framework for implementation of the ACL/AM requirements set out in the revised National Standard 1 Guidelines ("NS1 Guidelines" or "Guidelines").[2] To this end, we have the following comments on the draft amendment and on the 2011-12 specifications, by which the new requirements for ABCs/ACLs/AMs are seeing their initial implementation.

[1] 16 U.S.C. § 1853(a)(15).
[2] 50 CFR § 600.310.

Draft Amendment 23 and the 2011-12 specifications fail to properly apply the ACL/AM requirement to all stocks in the fishery

ACLs and AMs are required for all stocks in a fishery, and all stocks in the FMP should be considered "in the fishery" unless otherwise specified through rulemaking.[3] This includes non-target stocks that are caught incidentally as bycatch during the pursuit of target stocks in a fishery, as well as "regulatory discards" as defined under the Magnuson-Stevens Act ("MSA"), 16 U.S.C. 1802 (38), which may or may not be retained for sale or personal use.[4]

In the case of stock complexes, the FMP should include an evaluation of the vulnerability of the stocks in the complex.[5] Vulnerability is determined by both stock productivity and its susceptibility to a fishery.[6] NMFS and MRAG Americas have developed Productivity and Susceptibility Analysis ("PSA") to measure such vulnerability.[7] The NS1 Guidelines direct the appropriate organization of stock complexes according to vulnerabilities and use of vulnerable species as indicator stocks with periodic re-evaluation about their status.[8] This is to ensure that an individual species does not experience overfishing prior to the ACL for an entire complex being reached. According to the Guidelines:

> [i]f the stocks within a stock complex have a wide range of vulnerability, measured in terms of both productivity and susceptibility to fishing impacts, they should be reorganized into different stock complexes that have similar vulnerabilities; otherwise the indicator stock should be chosen to represent the more vulnerable stocks within the complex. In instances where an indicator stock is less vulnerable than other members of the complex, management measures need to be more conservative so that the more vulnerable members of the complex are not at risk from the fishery. More than one indicator stock can be selected to provide more information about the status of the complex. When indicator stock(s) are used, periodic re-evaluation of available quantitative or qualitative information (e.g., catch trends, changes in vulnerability, fish health indices, etc.) is needed to determine whether a stock is subject to overfishing, or is approaching (or in) an overfished condition.[9]

The Council's preliminary preferred alternative sets several ACLs at the stock complex level, rather than using species-specific ACLs, setting complex ACLs using appropriate indicator species, or limiting complexes to component species with similar vulnerabilities. As a result, Amendment 23 fails to ensure that overfishing does not occur on the most vulnerable members of the complex, as required by the law. The Groundfish

[3] 50 C.F.R. § 600.310(d)(1).
[4] 50 C.F.R. § 600.310(d)(3-4).
[5] 50 C.F.R. § 600.310(d)(8).
[6] 50 C.F.R. § 600.310(d)(10).
[7] NS1 Guidelines Final Rule, 74 Fed. Reg. 3178, 3185 (Jan. 16, 2009).
[8] 50 C.F.R. § 600.310(d)(9).
[9] 50 C.F.R. § 600.310(d)(9).

Management Team (GMT) has highlighted this problem, noting, for example, that "[t]he Other Fish Complex is of most concern … given the lack of a quantitative basis for its current harvest specifications and the *relatively high vulnerability of its component elasmobrach species.*"[10] Examples of complex component species of particular concern about overfishing include china, quillback and copper rockfish, as well as black, yellowtail and shortraker rockfish.[11]

We urge the Council to set species-specific ACLs in all cases, rather than rely on ACLs set at the complex level. To do this, the Council should be able to rely on the species-specific information used to compile the complex-level ABC. At a minimum, the Council must identify appropriate indicator species which will be used to establish ACLs at the sub-complex level and tracked as part of the management measures. This, however, is a less preferred method than setting species-specific ACLs.

Draft Amendment 23 does not yet include an adequate ABC control rule

Pursuant to the NS1 Guidelines, each FMP's ACL-setting mechanism must include an ABC control rule. Because they are a critical part of the "mechanism to set ACLs,"[12] ABC control rules must be a component of the FMPs themselves.[13] The Guidelines define the ABC control rule as a "specified approach to setting the ABC for a stock or stock complex as a function of the scientific uncertainty in the estimate of OFL and any other scientific uncertainty."[14] As stated in the Guidelines, "[t]he determination of ABC should be based, when possible, on the probability that an actual catch equal to the stock's ABC would result in overfishing."[15]

It is critical to carefully tailor the ABC control rule to the specific stocks covered. The control rule

> must articulate how ABC will be set compared to the OFL based on the scientific knowledge about the stock or stock complex and the scientific uncertainty in the estimate of OFL and any other scientific uncertainty. The ABC control rule should consider uncertainty in factors such as stock assessment results, time lags in updating assessments, the degree of retrospective revision of assessment results, and projections.[16]

In sum, the NS1 Guidelines now require managers to specifically identify and account for scientific uncertainty inherent in the process of responsibly managing fish stocks. By

[10] PFMC March 2010 Agenda, Item E.4.b, Supplemental GMT Report at 2 (emphasis added).
[11] *See, e.g.*, PFMC March 2010 Agenda, Item E.2.b, GMT Report at 4 ("The group with the greatest vulnerability is the nearshore trio of China, copper and quillback rockfishes, all of which are longer-lived, deeper-dwelling nearshore rockfishes.).
[12] 50 C.F.R. § 600.310(c)(4) (ACLs are to be specified "in relationship to the ABC").
[13] 50 C.F.R. § 600.310(c)(3) (FMP must evaluate and describe ABC control rule); s*ee also* NS1 Guidelines Final Rule, 74 Fed. Reg. 3178, 3192 (January 16, 2009); 16 U.S.C. § 1853(a)(15).
[14] 50 C.F.R. § 600.310(f)(2)(iii).
[15] 50 CFR § 600.310(f)(4).
[16] 50 C.F.R. § 600.310(f)(4).

developing and following formal control rules with buffers for scientific uncertainty, managers can ensure that each species is being managed in a precautionary way, appropriate to the risk levels associated with that fish stock or complex.

For the Groundfish FMP, the Council has developed an ABC control rule by which different values for "P*," intended to represent a probability of overfishing, are applied to probability distributions of the overfishing level ("OFL") in order to generate an ABC. For every Category 1 stocks, including overfished species and those in the precautionary zone (*i.e.*, sablefish), a P* value of 0.45 is applied to a probability distribution with a sigma of 0.36. This probability distribution was adopted from the SSC's analysis of among-assessment variability in current stock biomass in seventeen groundfish and coastal pelagic stocks, and a quantification of this uncertainty that the SSC identified as a "lower bound on total uncertainty."[17] For Category 2 (data-moderate) stocks, the Council chose to apply a P* of 0.40 to a probability distribution with a sigma of 0.72; for Category 3 (data-poor) stocks, they chose to apply a P* of 0.40 to a probability distribution with a sigma of 1.44. These values for sigma represent an arbitrary doubling and quadrupling, respectively, of the sigma that had been estimate for the suite of Category 1 stocks. While the SSC has recognized that there is substantially greater scientific uncertainty associated with the OFL estimates for Category 2 stocks compared to Category 1 stocks, and Category 3 compared to Category 2, the Council has chosen to apply the same risk tolerance (P*=0.4) to Category 2 and 3 stocks.

Before getting to the substance of the ABC control rules, we want to express concern that the December 2009 draft of Amendment 23, the most recent draft that has been made available to the public, only references the control rule's existence and the status of its development as of that time. To be consistent with the 2006 amendments and the NS1 Guidelines, Amendment 23 itself must detail and incorporate the final set of ABC control rules which it has not yet done.

With respect to their substance, we also have significant concerns about the ABC control rules which have been developed as part of the Amendment 23 process and used in the setting of the proposed 2011-12 specifications. Because they inadequately account for scientific uncertainty in the estimated OFLs for the various groundfish stocks, the control rules are likely to result in ABCs for most, if not all, stocks with an actual probability of exceeding OFLs higher than that represented by the Council's preferred P* values. The fact that scientific uncertainty has been incompletely estimated for Category 1 stocks, and essentially guessed at for Category 2 and 3 stocks, should be a strong reason for choosing a more conservative, risk adverse, P*, rather than the highly risk-tolerant values chosen by the Council, as well as higher sigma values. As explained further below, the problems with the control rules stem from probability distributions that represent an incomplete, underestimated and/or inaccurate picture of scientific uncertainty in conjunction with P* values that are too high.

Incomplete, underestimated and/or inaccurate quantification of scientific uncertainty

[17] PFMC March 2010 Agenda, Item E.4.b, Supplemental SSC Report 1 at 5.

With respect to Category 1 stocks, the SSC's approach to quantifying scientific uncertainty does not represent a complete – or sufficient – treatment of scientific uncertainty. The sigma of 0.36 they report is the result of their quantification of 'among-model variability' in the estimate of current-year biomass gathered through a retrospective analysis of biomass trends for a series of stock assessments conducted over time for each given stock. The SSC suggests that this estimate captures some, but not all, of the variability contributed by several sources of scientific uncertainty, such as model error, process error, observation error, retrospective error, and human error. Because their sigma does not fully capture these sources of uncertainty, and because, as discussed below, it does not contain contributions from other important sources of scientific uncertainty (e.g. error in estimating Fmsy), the SSC has acknowledged that their estimates of sigma are underestimates and can be thought of as lower bounds on the scientific uncertainty in OFL. Furthermore, we note that because there are sources that are unaccounted for (i.e. they are effectively assuming those errors are zero), they cannot be certain that they have even accounted for the major elements of uncertainty. In other words, they cannot be certain that an estimate of sigma by their method is not a substantial underestimate of the true uncertainty.

Sources of error that are not included in the SSC's quantification exercise include forecast error, time between assessments, uncertainty in the optimal harvest rates (Fmsy), uncertainty in the effects of climate or environmental conditions, and ecosystem interactions.[18] Although the SSC also examined one other type of error, characterized as "within stock assessment," it would be a mistake to assume that this error is subsumed within the sigma of 0.36. "Within-assessment" variation can be considered precision while "among-assessment" variation is better thought of as accuracy. These are related but separate sources of error. Indeed, the SSC itself acknowledged that the sigma of 0.36 recommended for Category 1 stocks "is only a first step, in part because it just considers uncertainty in biomass. Going forward, it will be important to consider other sources of uncertainty, such as Fmsy. Because of that it was also recognized that *the present analysis underestimates total variance*."[19]

We also have concerns that the SSC's particular measure of sigma could be underestimating model error. The SSC's rationale for estimating "'sigma" is that differences in biomass estimates among repeat assessments for the same species and in the same year capture elements of model error. A well-understood problem of this approach is that the true underlying population trajectory is unknown and must be assumed. After considering three different ways to address this problem, the SSC decided to calculate deviations in biomass estimates from the mean in each year. This choice has two important implications: (1) it does not give weight to the most recent assessment, which one would presume to be the most accurate due to recent data, and (2) it does not account for biases that exist in multiple assessment models.

In addition, the deviations from the mean *B* are always symmetric, which implies that there is no bias in the equation error. Bias in stock assessments is much more serious

[18] PFMC March 2010 Agenda, Item E.4.b, Supplemental SSC Report at 5.
[19] PFMC March 2010 Agenda, Item E.4.b, Supplemental SSC Report 2 (emphasis added).

than symmetric equation errors. If the process errors are random and uncorrelated, overfishing one year could be followed by "underfishing" the next and to some extent the errors would cancel out. However, a stock assessment that is consistently biased high would overestimate B_t each year, leading to overfishing (if, for example, all the stock assessments incorrectly underestimated natural mortality, *M*). Therefore, the assumption that these residuals are independent and follow a lognormal distribution is not supported.

With respect to Category 2 and Category 3 stocks, the preferred sigma values for the probability distributions for these stocks (0.72 for Category 2 and 1.44 for Category 3) lack a technical basis and thus are arbitrary.[20] The failure to use other readily-available means of buffer-setting that would have considered the relevant factors in a meaningful manner, such as the distributions of OFLs for each stock or PSA, means that in addition the Council has failed to use the best available science. As discussed further below, while the SSC has rejected the inclusion of PSA into the ABC control rule for Category 1 species, that does not preclude the Council from using PSA to generate an appropriate P*, as is being done in the South Atlantic and the Gulf of Mexico.

The ABC control rule's P values are too high*

The P* values in the ABC control rule are far too high to satisfy the MSA's requirement to prevent overfishing, particularly given their application to, as described above, an incomplete and/or inaccurate quantification of scientific uncertainty for the various groundfish species. Indeed, for Category 2 and 3 stocks, the record indicates that the SSC and GMT recommended that the Council choose particular P* values more to approximate the status quo harvest policies already in place than to provide a scientifically-defensible buffer. [21] But while the Council preliminarily approved sigma values recommended by the SSC to approximate the status quo buffers for these stocks, they chose P* values higher than those recommended by the SSC, resulting in buffers that are smaller than the status quo.[22]

First, it is critical to recognize that – by law – OFL is a limit, not a target. It is threshold not to be exceeded, *i.e.*, the relevant legal requirements are to set ACLs such that "overfishing does not occur" and to "prevent" overfishing. The MSA's fisheries management standard in this context is not to hover around the threshold of overfishing, but rather to stay below it. As a consequence, applying a P* value as high as 0.40-0.45 is not appropriate. By choosing a P* value of 0.45, the Council is taking a 45% chance of overfishing a stock in any given year (if the uncertainty was characterized properly). The consequence will be that on average, *45% of the stocks will experience overfishing in any given year* (if the uncertainty was characterized properly, and an even higher percentage

[20] *See* PFMC April 2010 Agenda, Item I.2.b, Supplemental SSC Report ("[A]t present [there is] no analysis available for determining the appropriate value of σ [sigma] to represent scientific uncertainty for stocks in [Categories 2 and 3].").
[21] *See, e.g.*, PFMC April 2010 Agenda, Item I.2.b, Supplemental SC Report at 3("The difference between [sigma values of] .72 and 1.44 corresponds fairly closely to the difference between the current buffers for category 2 and 3 stocks (0.25 versus 0.5) when P* is in the range 0.3 ~ 0.35.").
[22] See attached Table 1.

if the uncertainty has been underestimated). When this probability is compounded among the 26 Category 1 groundfish stocks that the Council has proposed to set P* = 0.45, this means there is a 99.99% chance that overfishing will occur for at least one of these stocks.[23] This is inconsistent with the MSA mandate to end overfishing. Rather, a P* value (used in the manner chosen by the Council, i.e., applied to a threshold legal requirement) must be much lower.

Fisheries science and management in has long recognized that managing using MSY as a target (which is the equivalent of selecting a P* of 0.5) is overly risk prone and consistently leads to high rates of overfishing. The history of fisheries science has entailed an ongoing effort to find yield targets that are sufficiently below MSY (OFL in our case) to make the chance of overfishing unlikely while not foregoing too much yield. The use of P* and an estimate of scientific uncertainty (plus the addition of ACLs) is the latest attempt to achieve optimal yield, but it will fail if values of P* are chosen that are hardly distinguishable from 0.5, in which case the Council will have reverted using OFL as a management target, rather than the limit that it must be. The new approach can only work if P* values are selected conservatively enough so that ABCs are set sufficiently low enough to avoid ever exceeding OFL.

It is worth noting that in many other sectors and industries, very low acceptable probabilities of failure are used. The use of a p = 0.05 and the 95% confidence interval are currently widely accepted standards of certainty used in statistics and in the sciences to determine whether results of scientific studies are significant (i.e, whether to accept or reject a null hypothesis).

Ultimately, an analysis that would generate a robust, non-arbitrary level of acceptable risk in the context of overfishing should assess the trade-offs between the consequences of overfishing (both economic and ecological) and the short-term costs associated with more precautionary buffers. The reason for setting such buffers is that while the SSC can provide a central estimate for OFLs, the relatively high uncertainty characterized by sigma = 0.36 means that the true OFL could be substantially lower. So, even if catch levels remained below the SSC's OFL estimate, overfishing could still be occurring. As the Council knows all too well, even the economic costs of overfishing have been catastrophic on local economies and west coast fishing communities. The choice of P* should explicitly weigh, in part, the value of avoiding such catastrophic events against the short-term costs of more precautionary buffers for scientific uncertainty. Therefore, setting a P* in the range of 0.4 to 0.5 implies a policy statement by the Council that it does not take this real risk of inadvertent overfishing seriously, nor does it concerned with the consequences of overfishing on ecosystems or the fishing community.

In addition, because (as the SSC makes clear) the estimate "sigma" is an underestimate of scientific uncertainty, a P* value of 0.45 will translate into an ABC with a risk of overfishing that is greater than 0.45 for many species, including potentially such overfished species as POP, lingcod, widow, canary, bocaccio, darkblotched, yelloweye

[23] Probability of overfishing zero stocks = $(1 - P^*)^n$ where P* is the probability of overfishing each stock and n is the number of stocks to which the P* is applied.

and petrale, and the "precautionary stock" sablefish. For all these species, the proposed ABC control rule would set ABC just 4% lower than the OFL.[24] For two of them, widow and canary, the Preferred Alternative in the draft harvest specifications relies on a total buffer (ABC and ACL) that results in less protection than was provided under the rebuilding plans in the Status Quo Alternative; for widow, the previous buffer between ABC/OY was 93% and proposed buffer between OFL/ACL is 88%, and for canary, the previous buffer between ABC/OY was 89% and the proposed buffer between OFL/ACL is 83%.[25] No scientific rationale has been offered for these reductions in buffer size.

The Preferred Alternative in the harvest specifications decreases buffers for most Category 2 and Category 3 stocks relative to the status quo, and therefore turns the clock back making the management of these species more likely to lead to overfishing. In most cases, ABCs will be set 17% below OFL for Category 2 and 31% below OFL for Category 3 (which includes the minor rockfish, other flatfish, and other fish complexes).[26] Nor, as discussed below, is these stocks' previous level of protection restored with an ACL buffer. When the probability of overfishing and/or level of scientific uncertainty has not been calculated -- *e.g.*, Category 2 or 3 species in the case of Pacific groundfish -- then it is imperative that the Council use another approach to setting a scientific uncertainty buffer, such as PSA. While the SSC has rejected the inclusion of PSA into the ABC control rule for Category 1 species, that does not preclude the Council from using PSA to generate an appropriate P*, as is being done in the South Atlantic and the Gulf of Mexico.

At a minimum, the Council must change the Preferred Alternative P* to reflect the SSC-recommended status quo buffers for Category 2 and 3 species. For Category 1 species, the Council must adopt a significantly lower P* that reflects a) the legal status of the OFL as a threshold and not as a target; and b) the incomplete and artificially low sigma value that will likely be higher once other sources of scientific uncertainty are quantified and incorporated.

Including a 25-5 harvest control rule for assessed flatfish in Amendment 23 is inappropriate and not scientifically justified

It is our understanding that the Council is also attempting to codify the new 25-5 Harvest Control Rule for assessed flatfish species through Amendment 23. We would like to reiterate our concerns which we previously raised regarding the lack of information to base such a radical change from the default B40% target reference point policy for groundfish. There is insufficient scientific basis for lowering the Fmsy, reference points, or control rule for assessed flatfish at this time. The recent estimates of Bmsy for petrale sole do not include data on actual recruitment during the time when the population was closer to its unfished levels, therefore the determination of Bmsy for this species is riddled with assumptions and uncertainty. It would be premature to change harvest

[24] See attached Table 1 comparing buffers under previous framework with preliminary buffers under new framework.
[25] *Id.*
[26] *Id.*

control rules given the high level uncertainty in the B25% proxy. Using B5% as the reference point in which the fishing rate goes to zero is much more aggressive than the 40-10 rule, and represents a level dangerously close to commercial extinction, where productivity declines rapidly. For flatfish and other groundfish, as the SSC was unable to assess the appropriate Fmsy for any species or the uncertainty in Fmsy in the sigma value due to the use of proxies. Given the uncertain and quickly changing information about flatfish, a dramatic change to the HCR is premature and unjustified.

Amendment 23 and the 2011-12 specifications are not consistent with SSC recommendations

Pursuant to Section 302(h)(6) of the MSA, which was added as part of the 2006 amendments, ACLs must be set at or below the SSC's catch level recommendations.[27] Further, to comply with Section 302(h)(6) and given the role of ABC control rules in setting ACLs, councils must establish ABC control rules based on the scientific advice of their SSCs.[28]

Amendment 23 and the 2011-12 catch specifications do not comply with these requirements. For example, as discussed above, the Council did not follow the SSC's recommendation to retain status quo buffers of 25% and 50% for Category 2 and 3 species, respectively.[29]

The Council has not adequately accounted for ecosystem considerations

The MSA requires ecosystem considerations to be explicitly accounted for in the process of setting harvest specifications. OY is prescribed as MSY "reduced by any relevant economic, social, or ecological factor."[30] The definition of MSY must include stock interactions,[31] and any relevant ecological factors that are not considered in MSY can be considered in the setting of OY and OY must reduce MSY accordingly.[32] The ACL must be set at a level to achieve OY on a continuing basis.[33] Accordingly, the development of the ACL-setting mechanism must explicitly consider food needs of predators that rely on the managed species. The FMP must quantify, analyze, and address relevant ecological factors. Currently, neither the existing FMP nor the proposed Amendment 23 specify these ecosystem considerations much less how they are incorporated into the setting of ACLs. For instance, specific procedures for setting ACLs to achieve OY for forage fish

[27] 16 U.S.C. § 1852(g)(1).
[28] 50 C.F.R. § 600.310(f)(4); 16 U.S.C. § 1852(g)(1) (requiring ACLs to be set below SSC catch level recommendations).
[29] While the Council chose the SSC's recommended sigma values for Category 2 and 3 of 0.72 and 1.44, respectively, the Council did not choose the SSC's recommended corresponding P* values that would have resulted in status quo buffers of 0.25 for Category 2 species and 0.5 for Category 3 species. Indeed, the Council chose P* values much higher than those recommended by the SSC, which would result in buffers significantly smaller than the status quo.
[30] 16 U.S.C. § 1802(33)(B).
[31] 50 C.F.R. § 600.335(e)(1)(iv).
[32] 50 C.F.R. § 600.310(e)(1)(iv).
[33] 50 C.F.R. § 600.310(e)(3)(ii).

stocks should be developed to maintain significantly higher biomass than the conventional single-species target biomass of B_{MSY}.[34]

Currently, a wealth of existing data and analysis methods are available to address ecological factors relevant to the harvest strategy of groundfish species. Diet information, which indicates the existence and strength of predator-prey relationships has been published by NOAA for West Coast groundfish and other species.[35] In addition, food web models of the California Current have been published, including mass balance models (i.e., EcoPath with EcoSim)[36] and spatially-explicit dynamic models (i.e., Atlantis)[37]. These models provide qualitatively and quantitatively tools to describe potential impacts of target groundfish species removals on other marine species as well as ecosystem attributes such as mean trophic level, food web resilience, and biodiversity. These are precisely the "relevant ecological factors" that must be considered in any Fishery Management Plan. Claiming that such tools are unavailable or that these factors are not relevant can simply no longer be justified given the state of existing science, including the aforementioned work by NOAA.

Therefore, to comply with the MSA, Amendment 23 to the Groundfish FMP must list the relevant ecological factors, analyze how groundfish harvest control rules affect these ecological factors, and describe how these factors will reduce MSY to achieve appropriate OYs. Accordingly, the corresponding SAFE documents for groundfish must conduct appropriate analyses of the impacts of specified ABC values on ecosystem attributes, other species, and other ecological factors to inform OYs set by Council.

Draft Amendment 23 does not include an adequate method for accounting for management uncertainty in setting ACLs or annual catch targets (ACTs)

The lack of management uncertainty buffers in the proposed harvest specifications reflects the absence of a management uncertainty control rule. As a general matter, the proposed ACLs for the various groundfish stocks appear intended to reflect historical status quo catch limits.[38] In some cases, the Council adopted preliminary ACLs that are equal to the corresponding ABCs, leaving no buffer for management uncertainty and thus substantially increasing the risk of overfishing such species.[39] That is especially disconcerting considering that the ABC for many of those same species has been set at only a slightly lower level than the OFL. For example, the Council has preliminarily

[34] 50 C.F.R. § 600.310(e)(3)(iv)(C).
[35] Dufault et al., November 2009. NOAA Technical Memorandum NMFS-NWFSC-103. A synthesis of diets and trophic overlap of marine species in the California Current.
[36] Field et al. 2006. Top-down modeling and bottom –up dynamics: linking a fisheries-based ecosystem model with climate hypotheses in the Northern California Current. Prog Oceanogr 68:238-70.
[37] Horne et al. January 2010. NOAA Technical Memorandum NMFS-NWFSC-104. Design and Parameterization of a Spatially Explicit Ecosystem Model of the Central California Current.
[38] See attached Table 1.
[39] The Council adopted preliminary ACLs that are equal to the corresponding ABCs for the following species (this list is not exhaustive): yellowtail (assessed stock), black rockfish (WA), California scorpionfish, English sole, Arrowtooth flounder.

adopted ABCs for yellowtail and California scorpionfish that are only 4% lower than the OFLs for these stocks, and has set the ACLs equal to these ABCs. In order to ensure that overfishing does not occur, as intended under the MSA, Amendment 23 must include a mechanism for accounting for management uncertainty. While the performance of the groundfish fishery has improved over the last several years in terms of constraining catch to the catch limit, the Council must still set ACLs or, particularly where management uncertainty is high and in-season management is not effective, ACTs, at a level sufficiently below the ABC to account for management uncertainty.

Council deliberations have indicated that the Council believes that current harvest strategies, including P*, address management uncertainty. This is a misinformed and flawed approach that conflates separate requirements for buffering sources of uncertainty. The P* approach was, on its own terms, intended solely to address scientific uncertainty, not the wholly separate requirement to account for management uncertainty. Management uncertainty results from uncertainty in the true catch amount (estimation error) and uncertainty in the ability of managers to constrain catch sufficiently to prevent exceeding the ACL. Estimation error results from misreporting of landed catch and uncertainty about the amount of discards and associated discard mortality; and time lag in reporting and data-availability to managers presents a major source of management uncertainty and often prevents in-season management control.

Several species in the groundfish fishery are managed with "harvest guidelines," which are similar to the ACTs recommend in the NS1 guidelines. Amendment 23 proposes ACTs for a number of fisheries to account for management uncertainty. However, Amendment 23 does not include an ACT control rule as called for by the NS1 guidelines.[40] In the absence of such a control rule, it is unclear how such management uncertainty will be accounted for in the ACT. The ACT control rule should clearly articulate how management uncertainty in the amount of catch in the fishery, including bycatch, is accounted for in setting the ACT relative to the ACL.[41] The control rule should account for uncertainty both in the ability to constrain catch and in quantifying the true catch amount, and consider past management performance in the fishery and such factors as time lags in reported catch.

The Council has not complied with NEPA

A failure to properly revise the Council's harvest rules and specification process to comply with the Magnuson-Stevens Act will have profound and significant impacts on the environment. As such, the Amendment 23 process must be undertaken in compliance with the National Environmental Policy Act. The heart of NEPA is informed decision-making based upon robust public participation and a detailed analysis of the environmental tradeoffs between a range of alternatives.

It is unclear what level of NEPA analysis the Council and NMFS will be utilizing – as things currently stand, however, the NEPA process appears likely to amount simply to an

[40] 50 CFR § 600.310(f)(6).
[41] *Id.*

improper post-hoc rationalization of a decision already made. We ask that NMFS ensure that the issues raised both in this letter and throughout the Council's preliminary discussions are addressed and that a draft environmental review document be made available to the public and Council for comment before the Council makes its final decision. This will allow the Council and members of the public to clarify complicated scientific and ecological issues, assess a variety of techniques for addressing these issues, and ultimately allow the Council and NFMS to make a fully informed decision that reflects a 'hard look' at the current system after an evaluation of a wide variety of alternative options.

Conclusion

Thank you for this opportunity to provide this input to the Amendment 23 and 2011-2012 Specification process. We appreciate the progress the Council and the SSC have made in developing procedures to comply with the new requirements of the MSA and the NS1 Guidelines. We hope these comments are helpful in making positive changes so that the final Preferred Alternative better serves the goal of managing and conserving our important marine resources and is consistent with NMFS's and the Council's legal requirements.

Sincerely,

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Enclosure

Table 1: Comparison of buffers under previous framework with preferred alternative buffers under new framework. (NRDC, 2010)

Stock	Data Category	2009 ABC/OY Buffer	2010 ABC/OY Buffer	2011 OFL/ABC Buffer	2011 ABC/ACL Buffer	2011 Total Buffer	Notes
Lingcod - coastwide		0	0	11%	0	11%	
N. of 42°	1	0	0	4%	0	4%	
S. of 42°	2	0	0	17%	0	17%	
Pacific cod	3	50%	50%	31%	28%	50%	Status quo buffer
Pacific whiting							Set during annual harvest specs
Sablefish (coastwide)	1	15%	16%	4%	27%	30%	Precautionary species: ACL set through 40-10 rule
N. of 36°							
S. of 36°							
Pacific ocean perch	1	84%	83%	4%	82%	82%	Reduced buffer
Shortbelly rockfish	2	0	0				SSC waiting for MSY-based results from the assessment, not available until June
Widow rockfish	1	93%	93%	4%	88%	88%	Reduced buffer
Canary rockfish	1	89%	89%	5%	83%	83%	Reduced buffer
Chilipepper rockfish	1	5%	5%	4%	0	4%	Reduced buffer
Bocaccio S. of 40°10'	1	64%	64%	4%	63-92%	64-93%	
Splitnose rockfish S. of 40°10'	1	25%	25%	4%	0	4%	Significantly reduced buffer
Yellowtail rockfish N. of 40°10'	1	0	0	4%	0	4%	S. of 40°10' = Minor rockfish south complex (unassesed)
Shortspine Thornyhead - coastwide	1	17%	17%	4%		17%	Status quo buffer
Longspine	1	30%	30%	17%		32%	Status quo buffer

Table 1: Comparison of buffers under previous framework with preferred alternative buffers under new framework. (NRDC, 2010)

Thornyhead - coastwide							
Cowcod S. of 40°10'	2 (Conception) 3 (Monterey)	69%	71%	17% (Conception) 31% (Monterey)		69%	Status quo buffer
Darkblotched	1	35%	34%	5%	32%	35%	Status quo buffer
Yelloweye	1	Ramp-down	Ramp-down	4%	57%	58%	Status quo buffer
Black rockfish (wa)	1	0	0	4%	0	4%	
Black rockfish (or-ca)	1	32%	24%	4%	14%	18%	Significantly reduced buffer
Minor rockfish north	3	38%	38%	31%	9%	37%	Reduced buffer
Minor rockfish south	3	41%	41%	31%	33%	54%	Increased buffer
California scorpionfish	1	0	0	4%	0	4%	
Cabezon (CA)	1	35%	29%	4%	0	4%	Significantly reduced buffer
Cabezon (OR)				4%	0	4%	
Dover sole	1	44%	42%	4%	57%	60%	Increased buffer
English sole	1	0	0	4%	0	4%	
Petrale Sole (coastwide)	1	13%	13%	4%	0	4%	Significantly reduced buffer
Arrowtooth flounder	2	0	0	17%	0	17%	
Starry flounder	2	33%	32%	17%	10%	25%	Reduced buffer
Other flatfish	3	27%	27%	31%	31%	52%	Increased buffer
Other fish	3	50%	50%	31%	28%	50%	Status quo buffer
Longnose skate	1	61%	59%	4%	55%	57%	Reduced buffer