

12.0 RESPONSE TO COMMENTS

The 45-day public comment period on the Amendment 16-3 DEIS closed on May 24, 2004 (69 FR 18897). NMFS received a comment letter from the United States Environmental Protection Agency (USEPA) Region 10 in accordance with their responsibility to review and rate EISs pursuant to NEPA and Section 309 of the Clean Air Act. Because a preferred alternative was not identified in the DEIS, USEPA rated each alternative separately. They gave all the alternatives a rating of EC-2 (Environmental Concerns-Insufficient Information) and attached detailed comments. NMFS also received written comments from the Natural Resources Defense Council (NRDC), an environmental advocacy organization, and two members of the public.

The detailed USEPA comments are reproduced below in their entirety, with responses following each comment. The other written comments have been summarized to identify specific comments, with responses following each comment. These written comments are reproduced in their entirety at the end of this chapter.

12.1 EPA Comments

Cowcod Stock Status

The EIS states that there is little information about the cowcod stock, and there are uncertainties in the one stock assessment that has been conducted. In the one existing cowcod assessment, age and size composition of catches were poorly sampled, population structure is unknown, and information for the assessment was restricted to Southern California waters. Consequently, without conducting a new assessment, the EIS is unable to evaluate alternatives with rebuilding the maximum sustainable yield (MSY) within the National Standard Guidelines with a probability greater than 60% (P_{MAX}) and a minimum estimated target year for those stocks to be completely rebuilt (T_{TARGET}) of 2090.

Abundance of cowcod has decreased tenfold since 1960 with 1998 spawning biomass estimated to be 7%, well below the overfished threshold of 25%. While non-retention regulations and area closures have been effective in constraining cowcod fishing mortality, the stock's low productivity and depressed spawning biomass result in a minimum 86 year T_{TARGET} estimate with no fishing-related mortality. The EIS states that all the alternatives are essentially the same, prescribing zero or near-zero harvest and complete avoidance strategies. Realistically, the zero harvest under the No Action Alternative and the most liberal annual harvest level of 4.8 metric tons in Alternative 1, are functionally the same, given the limitations on detecting small impacts in the affected fisheries.

The information presented in the EIS indicates that there is a need for a new, more accurate cowcod stock assessment that accounts for the shortfalls of the previous assessment. If the current cowcod stock assessment overestimates the stock size, management measures based on this assessment may not be adequate to allow for the stock to rebuild. If the current assessment underestimates stock size, management measures based on that assessment may result in unnecessary restrictions on the cowcod fishery as well as other fisheries where cowcod are a bycatch species. We recommend that the EIS include a plan for preparing a new cowcod stock assessment that includes provisions for updating the cowcod rebuilding plan.

Response:

The Council and NMFS recognize the need for a new cowcod stock assessment. The NMFS Northwest Fisheries Science Center presented a list of stock assessments planned for completion in 2005 in support of the 2007-2008 biennial management cycle, which was adopted by the Council (Exhibit C.11, Situation Summary, April 2004). According to this plan, cowcod is scheduled for a full stock assessment in 2005 and is ranked in the highest priority category. In addition to the new stock assessment, the NMFS Northwest

Fisheries Science Center and the Council are sponsoring a series of workshops in 2004 in support of new stock assessments. These workshops address a review of the recreational catch-per-unit-effort methodology used in several stock assessments, examination of how to better manage and coordinate data needed for stock assessments, and an examination of the models currently used in stock assessments. Workshop results will support the 2005 cowcod stock assessment.

Provisions for updating rebuilding plans were implemented through Groundfish FMP Amendment 16-1. According to the FMP, as amended, the FMP would not be further amended to incorporate changes in the rebuilding plan resulting from new stock assessments. Two rebuilding parameters, the target year (T_{TARGET}) and the harvest control rule are published in federal regulations. These regulations are amended to reflect the updated parameter values. Changes to the regulations require a full rulemaking process with notice and comment opportunity. Normally, the same rulemaking process used to implement biennial harvest specification and management measures would be used to update these rebuilding parameters. Such changes would be supported by either an environmental assessment or environmental impact statement, as required by NEPA.

Bycatch

Bycatch accounting and control has been improving in a large part due to data obtained through the West Coast Groundfish Observer Program (Observer Program). Data from the Observer Program have provided improved understanding of bycatch rates and total mortality which have improved fishery modeling, stock assessments and rebuilding analyses. This Observer Program data will reduce the uncertainty in stock status and rebuilding projections, supporting more sound harvest policy and sustainable fishery resource management.

The EIS states that measures such as full retention of bycatch and bycatch caps could significantly reduce fishing-related mortality of overfished groundfish stocks. The EIS discusses the advantages of linking the Observer Program with a program of mandatory full retention of rockfish and other overfished species to increase the accuracy in estimating total catch. This could ensure rebuilding catch Optimum Yields (OY) are not exceeded while attempting to access harvestable groundfish species. Mandatory retention and observer coverage might allow greater flexibility for managers to consider fishing opportunities that might otherwise be considered risky. However, total catch controls must be reliable and responsive to rapid changes in the fishery. Such a program would require significantly higher observer coverage.

A management program that relies on bycatch caps could promote derby fisheries where fishers compete to get their fish first before a cap is attained. This creates safety risks, poor supply and demand marketing and a contracted stream of fishery-dependent data that might be difficult to assimilate and react to in a timely fashion. The EIS discusses Individual Transferable Quotas (ITQ) as a mitigative measure to leverage more healthy target species landings while maintaining better accounting and control of overfished species' bycatch.

We support the EIS's promotion of increased observer coverage and ITQs. While both management measures will result in increased costs, the benefits to stock assessments, rebuilding plans, safety and market stability, outweigh those costs. Without accurately accounting for bycatch, the total catch estimates are inaccurate, leading to fishery management plans that can result in stock declines or unnecessarily restrictive fisheries.

Response:

The Council and NMFS acknowledge EPA's support of increased observer coverage and implementation of an ITQ program. The WCGOP had a first year goal of 10% coverage of the trawl fishery, which was exceeded. In its second year the program was expanded to the limited entry fixed gear sablefish fishery and the open access sector and coverage in the limited entry trawl sector was 16%. These coverage rates are

considered adequate, given available resources and the program's current purpose. Implementing management programs such as bycatch caps or ITQs would change program goals and require higher levels of observer coverage. The Council and NMFS published a notice of intent to prepare an EIS to evaluate proposals to implement dedicated access privileges for participants in the non-tribal Pacific Coast groundfish trawl fishery (69 FR 29482). This EIS will evaluate ITQ programs under one or more alternatives and consider the type of fishery monitoring required.

Impacts on Habitat

The Magnuson-Stevens Act obligates the Fisheries Councils and NMFS to identify and characterize essential fish habitat (EFH) that is necessary to allow for groundfish production to support long-term sustainable fisheries for groundfish and for groundfish contributions to a healthy ecosystem. Bottom trawling gear is known to modify seafloor habitats by altering benthic habitat complexity and by removing or damaging infauna and sessile organisms. The EIS summarizes the EFH areas for the life history stages of West Coast groundfish species and provides additional background information on the types of habitat needed by the four EIS focused species.

The proposed action will not have any direct effects on EFH. However, the proposed alternatives will have differential indirect impacts depending on the harvest level. Increased fishing effort could lead to an increase in fishing-related impacts, while a decreasing fishing effort would have the opposite effect. For example, different fishing gear types have different kinds of impacts on habitat and fish processing discard impacts water quality as well as ecosystem structure. The level of the impacts from the various gear and processing discard are directly related to fishing effort. The EIS states that currently there is insufficient information to fully evaluate the effects of the proposed action on EFH and consequently, will be developing the EFH EIS. The EFH EIS will evaluate programmatic measures designed to identify, protect, and minimize potential fishing impacts on EFH and is scheduled for completion in 2006.

We recommend that the Amendment 16-3 EIS contain provisions for amendment or modification to incorporate any protection measures that are identified in the EFH EIS. Any habitat protection measures identified in the EFH EIS that can be applied to encourage rebuilding overfished groundfish species, either through reducing total mortality or enhancing population productivity, should be considered as an adjunct to other harvest control measures analyzed in the Amendment 16-3 EIS. Such protection measures should be considered equivalent to those measures currently identified in the Amendment 16-3 EIS to reduce mortality or enhance population productivity.

Response:

In response to the comment that the EIS should contain provisions for amendment or modification to incorporate any protection measures that are identified in the EFH EIS, Amendment 16-3 modifies the Groundfish FMP and federal regulations, which describe the framework for groundfish management. Likewise, action implementing the EFH EIS currently in development, will also amend the FMP and/or Federal regulations to describe EFH and implement practicable mitigation measures. Both of these amendments must be consistent with the MSA, including National Standard 1 (§301(a)(1)), to prevent overfishing and achieving optimum yield; the requirement to include in FMPs an identification and description of EFH, and measures to minimize adverse effects, to the extent practicable (§303(a)(7)); and measures to rebuild overfished fisheries (§304(e)). Although unlikely, if provisions in rebuilding plans adopted through this amendment were in conflict with mitigation measures identified as part of the EFH EIS process, further amendments, either in connection with the EFH EIS or subsequent to that, would be adopted to ensure consistency within the FMP. By the same token, EFH information and/or measures directly related to rebuilding overfished species could be part of future rebuilding plan updates.

12.2 Public Comments

12.2.1 Natural Resources Defense Council (NRDC) Comments

1. The EIS fails to consider adopting a rebuilding date for the species that is at the midpoint between T_{MIN} and T_{MAX} as calculated pursuant to NMFS's National Standard Guidelines. NMFS's guidance recommends that NMFS select rebuilding dates no later than the midpoint between these two numbers, but the EIS fails to evaluate this option for three of the four species at issue.

Response:

The Commentor misconstrues the technical guidance (Restrepo, *et al.* 1998) with respect to the use of the midpoint year (T_{MID}). The guidance states “We suggest that T_{TARGET} not exceed the midpoint between T_{MIN} and T_{MAX} [T_{MID}].” The use of “suggest” rather than “recommend” in this statement implies less emphatic guidance on this point. More importantly, this suggestion applies if the “default control rule,” described in Section 3.3 of the technical guidance (Restrepo, *et al.* 1998), is used. This approach, which is a linear reduction in the fishing mortality rate proportional to biomass, is used in the absence of the type of decision-theoretic approach described in Section 3.1 of the technical guidance document. The methodology specified in the SSC Terms of Reference (SSC 2001) and implemented through the rebuilding analyses is a decision-theoretic approach consistent with the technical guidance. It uses Monte Carlo simulation, which is a statistical technique used to determine the probability, or likelihood, of a given outcome under a specified set of conditions. (Section 1.1.1.2 in Appendix A to this EIS describes this methodology and the derivation of the key rebuilding probabilities T_{MIN} , T_{MAX} , P_{MAX} , and T_{TARGET} .) Given the use of Monte Carlo simulation as part of a decision-theoretic approach, T_{MID} is a somewhat arbitrary point, in the sense that it is not derived using the probability calculations on which other key rebuilding parameters, used in decision-making, are based. The way in which the alternatives are structured, based on rebuilding probabilities (P_{MAX} values), reflects the Council's decision-making approach to choosing targets. As discussed in the EIS, this involves evaluating the tradeoff of future risk represented by the P_{MAX} value and changes in short-term benefits represented by predicted allowable harvest levels, or OYs.

2. The rebuilding target dates that the EIS does consider all have rebuilding probabilities of no better than 50%. NMFS should consider rebuilding alternatives that have considerably higher probabilities of successfully achieving rebuilding by the target rebuilding dates.

Response:

In a rebuilding analysis, using the probability calculations described by the SSC Terms of Reference (SSC 2001), the target year is defined as the median rebuilding year for a given fishing mortality rate. As described in Section 4.5.2 of the groundfish FMP (and in more detail in Section 1.1.1.2 of Appendix A to this EIS), the rebuilding analysis methodology uses a Monte Carlo simulation technique in which many simulations project the change in biomass over time for a given fishing mortality rate (F), based on the biological characteristics of the species and known recruitment variability. The target year, or median year, is defined as the year in which half of these simulations show that the population has rebuilt to the target biomass. In this sense the target year (T_{TARGET}) is the statistically most likely year in which the population will achieve the target biomass for a given F . Similarly, P_{MAX} , the probability of rebuilding in the maximum allowable time period (T_{MAX}), represents the proportion of simulations within which the population has rebuilt to the target biomass by T_{MAX} . (Even T_{MIN} , the rebuilding period in the absence of fishing, is defined probabilistically as the year in which half of all simulations achieve rebuilding when F is set to zero.) These three strategic rebuilding parameters— T_{TARGET} , P_{MAX} , and F —cannot be chosen independently: the choice of one parameter determines the value of the other two. The alternatives in this EIS are structured around P_{MAX} values. Therefore, in choosing a P_{MAX} as part of the rebuilding strategy for an overfished stock, the Council also

chose the values for T_{TARGET} and F for each stock. It can be seen that choosing the target year cannot be chosen based on some other probability because it is defined by the median probability. Although the Council could have chosen the target year directly (as long as it fell between T_{MIN} and T_{MAX}), within the model it would still be defined as the year with the 50% probability of stock recovery, and that choice would determine the corresponding values for P_{MAX} and F . No matter which parameter is used as the basis for decision-making, the fundamental choice, and causal factor, is the fishing mortality rate; the target year is the product of this choice as just defined. Rebuilding analyses also include a measure of the risk associated with the application of a given fishing mortality rate, P_{MAX} . Rather than defining the target year differently, which implies fundamentally changing the approach, or SSC Terms of Reference, decision-makers have used P_{MAX} as the appropriate measure of the risk, or likelihood of success, to determine the target year and fishing mortality rate comprising the rebuilding strategy.

3. The EIS fails to consider rebuilding alternatives that incorporate new management measures designed to protect and rebuild the species. Instead, the rebuilding plans contained in the document all rely exclusively on future management measures to be adopted as part of the biennial Pacific groundfish specifications process. The EIS's failure to consider rebuilding alternatives that incorporate new management measures, particularly management measures that reduce bycatch and habitat harm, constitutes a violation of NEPA.

Response:

The proposed action in this EIS is to "set strategic rebuilding parameters to guide stock rebuilding" for the four species subject to rebuilding plans evaluated in this EIS. These strategic rebuilding parameters are the target rebuilding year (T_{TARGET}), the harvest control rule, and the probability of rebuilding within the maximum allowable time under the National Standard Guidelines (P_{MAX}). FMP Amendment 16-1, which established the process and standards for adopting and periodically reviewing rebuilding plans, specifies the process to adopt strategic rebuilding parameters through FMP and regulatory amendment (i.e., the action contemplated in this EIS for the four affected species) and the process to adopt annual or biennial management measures through regulatory amendment. These separate actions were considered the most desirable process because it allows the best available science to direct decision-making on management measures that are designed to meet rebuilding plan objectives. Otherwise, management measures specified in the FMP could soon become outdated. This would cause an unnecessary delay to specify more responsive and responsible management measures while the FMP is amended. In cases where FMP-specified management measures are not stringent enough, delays in amending these management measures may cause prolonged rebuilding. It is more efficient and timely to implement management measures through periodic rulemaking.

4. The EIS fails to consider a reasonable range of rebuilding alternatives for cowcod. In effect, the document considers only two alternatives for rebuilding the species, and both of those alternatives are very close to each other. NMFS must consider additional alternatives that would result in swifter rebuilding of cowcod.

Response:

Section 2.7 in the EIS discusses the reasons for the more limited range of alternatives for cowcod. The rebuilding analysis (Butler and Barnes 2000) only provided strategies based on 55% and 60% P_{MAX} values. This analysis was performed before the SSC Terms of Reference for groundfish rebuilding analyses (SSC 2001) had been developed and uses a different methodology. Strategies with lower probabilities than 50% were eliminated from detailed consideration. The fishing mortality rate with a 60% P_{MAX} results in an OY of 2.4 mt for the portion of the stock in the Conception management area. (Cowcod also occur in the Monterey management area, but data are unavailable for that portion of the stock; Butler and Barnes,

therefore, recommended applying the same OY for this portion, resulting in an overall OY of 4.8 mt.) In practical terms, this OY is very close to zero fishing mortality, which would represent a target year equal to T_{MIN} . Current management measures prohibit retention of cowcod in all fisheries except for research, so fishing mortality only results from unavoidable bycatch. As shown in Table 5-12 in the EIS, this bycatch is estimated to be 3.1 mt in 2004. Zero harvest alternatives were also eliminated from detailed consideration because of the severe socioeconomic impacts to fishing communities that would result. Achieving zero harvest would likely necessitate complete closure of a range of commercial and recreational fisheries in Central and Southern California to prevent unintended incidental cowcod interception.

Given that OY for the 60% P_{MAX} is very low and only accommodates a small amount of unavoidable bycatch, the resolution in catch data would not be great enough to distinguish the very small incremental reductions in OY for P_{MAX} values between 60% and 100%; and given the methodological limitations in the rebuilding analysis, the authors (Butler and Barnes 2000) did not calculate OYs for other P_{MAX} values. A new stock assessment is necessary to evaluate other rebuilding strategies based on a P_{MAX} greater than 60%. NMFS has scheduled a full cowcod stock assessment for 2005, which should allow a full rebuilding analysis using the SSC Terms of Reference methodology. Based on this analysis, the Council could choose a new fishing mortality rate (harvest control rule) and/or target year as part of the cowcod rebuilding strategy. The values of these strategic parameters are published in federal regulations. Any change in these parameters would require a full notice-and-comment rulemaking process. Normally, this would occur as part of the same rulemaking process used to establish biennial harvest specifications and management measures. If necessary, the 2007-2008 biennial process, supported by the requisite NEPA analysis, will be used to change cowcod strategic parameters.

5. The description of the alternatives for widow rockfish in the executive summary erroneously indicates that the action alternative with the greatest fishing harvest (Action Alternative 1) would have the shortest rebuilding period.

Response:

This error is corrected in the FEIS.

6. Modeling assumptions are critical to the rebuilding choices presented, particularly for widow rockfish and bocaccio, yet the EIS fails to discuss fully the merits of the alternative models available for each species. The document also fails to include a full discussion of the benefits of precautionary rebuilding management in the face of scientific uncertainty, as well as the risks presented if NMFS uses modeling assumptions that ultimately prove overly optimistic in stating the status or productivity of the species.

Response:

The Council and NMFS agree that modeling assumptions are critical to the rebuilding choices presented. In fact, most of the rebuilding analyses evaluated in this EIS are stochastic in nature (e.g., P_{MAX} estimates), so risks are as well understood as possible. As such, the cited rebuilding analyses and tables within this EIS do present P_{MAX} values for all models recommended by Stock Assessment Review (STAR) Panels and the Council's Scientific and Statistical Committee. The competing bocaccio and widow rockfish rebuilding models are explained in Sections 5.1.1.1 and 5.1.1.3, respectively. Additionally, Table 5-3 is a bocaccio decision table that treats the three alternative models as true states of nature. Each model is compared against the others showing the effect of choosing one model when another represents the true state of nature. While a similar decision table was not prepared by the Widow Rockfish Stock Assessment Team, Table 2-3 does compare projected OYs and strategic rebuilding parameter estimates for all the competing widow rockfish models. Tables 5-8a, 5-8b, and 5-8c, and Figure 5-3 also depict the long-term consequences, given alternative widow rockfish rebuilding models.

7. It is not sufficient for NMFS to state that there is inadequate data about cowcod. Instead, NMFS must take affirmative steps to gather the data necessary to make informed, effective choices about rebuilding cowcod. The EIS's discussion of cowcod issues generally is inadequate. For example, the document's discussion of the Butler analysis (2003) fails to acknowledge that analysis noted a lack of data about the actual amount of discard mortality occurring in the fishery.

Response:

Section 5.1.1.2 in the EIS and Section 2.4.1.3 in Appendix A to the EIS summarize current information on the biology and stock status of cowcod. NMFS has scheduled a full stock assessment for cowcod in 2005, for use in establishing harvest specifications for the 2007-2008 biennial management cycle. As discussed in the response to comment #4, the Council may decide to revise the strategic rebuilding parameters based on these stock assessment results. With regard to the cowcod rebuilding review (Butler, *et al.* 2003), the authors reviewed the limited available data on cowcod discard mortality and concluded that "estimates of discards ... were negligible and had no appreciable impact on magnitudes of removals estimates..." (Page 6). They also concluded that management measures are adequate to keep total fishing mortality within rebuilding OYs.

8. The EIS claims adopting new management measures in the rebuilding plans would be insufficiently flexible (pages 13-14 in the EIS). There are two flaws in this reasoning, and the analysis is inadequate. First, new management measures could be adopted in a flexible manner, such as committing to reduce bycatch mortality to a specified performance standard (e.g., a specific rate) and then specifying the exact measures to achieve that performance standard as part of the biennial specifications process. Second, management flexibility is neither the sole nor the most important decision criterion facing NMFS in its task of rebuilding overfished species. Even if it were the case that adopting new management measures would come at the cost of some management flexibility, that decreased flexibility would be counterbalanced by the benefits accorded by the new management protections for the species.

Response:

Groundfish FMP Amendment 16-1 specifies the process of incorporating strategic rebuilding parameters as species-specific rebuilding plans in the FMP, and then adopting separate management measures as part of an annual or biennial rulemaking process (see response to NRDC comment #3). Amendment 16-1 acknowledges that scientific understanding of stock rebuilding needs changes as new stock assessments are done, evaluation of recent management actions occurs, new observations of at-sea discards are available, and other peer-reviewed data streams and analyses become available. All of these data are used in deciding annual or biennial management measures. The decision-making process is supported by analysis of this best available science in the appropriate NEPA document. If the Council and NMFS had to also pursue an FMP amendment to adaptively change management strategies, the associated delay could risk failure to meet rebuilding objectives or could maintain unfairly punitive management measures for fishermen and fishing communities if the start of the fishing season is unnecessarily delayed. The Commenter unreasonably assumes that "decreased flexibility would be counterbalanced by the benefits accorded by the new management protection for the species." If new best available science is more pessimistic regarding stock productivity or rebuilding progress, lack of management flexibility could compromise stock rebuilding objectives and hinder rebuilding progress, or even allow overfishing to occur.

9. The EIS contains minimal discussion and inadequate analysis of the costs and risks of longer rebuilding periods and lower rebuilding probabilities, and fails to explain the consequences of extended rebuilding periods or failed rebuilding efforts. In the same vein, the benefits of shorter rebuilding and greater protections for the species are inadequately discussed. We appreciate the inclusion of tables showing the qualitative social and economic costs and benefits of various rebuilding options (Tables 8-13 through 8-16). It should be noted that the tables for bocaccio, to give one example, reveal that the short-term

costs of choosing the 90% probability of rebuilding in T_{MAX} (Alternative 4), compared to the biologically more risky Alternative 3, are balanced or outweighed by long-term and non-consumptive economic benefits. Alternative 4 is a preferable choice from a biological perspective; Table 8-13 supports that alternative as a rational choice from a socio-economic perspective as well. These conclusions should be incorporated and discussed in a thorough way.

Response:

While it is acknowledged that Alternative 4 is generally the preferable choice from a biological perspective for rebuilding these species, the Council is bound to also consider social and economic impacts on fishing communities in choosing its preferred alternative. For each rebuilding species covered in this document, Tables 8-13 through 8-16 compare the distribution of relative benefits between the alternatives. While it is true that the more conservative alternatives generally do rank higher in terms of long-term and nonconsumptive benefits, it should be noted that these represent only two of the benefits categories shown in the tables. By other measures (e.g. industry adjustment costs) these same alternatives rank lower than the more aggressive harvest alternatives. It is the Council's role to consider both long- and short-term consequences of rebuilding overfished species and to balance the expressed need of communities to derive continued livelihood from sustainable use of the resource with the more subtly expressed needs of non-consumers and nonusers that overfished stocks recover as quickly as possible.

10. The EIS fails to discuss adequately the harm to the habitat of overfished species caused by fishing. The document does acknowledge that bottom trawling gear modifies seafloor habitat in a way harmful to rockfish species (page 42 in the DEIS). This important admission demands detailed analysis and a full discussion of the implications of such harm for the rebuilding choices facing NMFS, but the EIS fails to present such a discussion and analysis.

Response:

Chapter 3 of the EIS describes current knowledge on the likely effects of fishing on essential fish habitat (EFH), with rebuilding plans predicted to have indirect and cumulative effects. As noted in that chapter, the information necessary to fully predict the effects of fishing on EFH is unavailable and the means of obtaining that information is not feasible within the context of this EIS. This information includes the distribution of fishing effort, the distribution of different types of EFH, and the relationship between different types of fishing effort and impacts to EFH. As noted in Section 3.3, NEPA regulations at 40 CFR 1502.22 describe how agencies should address situations in which there is incomplete or unavailable information and the cost of obtaining it is exorbitant or the means unknown. The chapter describes the importance of that information, summarizes existing information, and evaluates the impacts of the alternatives based on generally accepted scientific principles. In addition, as discussed in Chapter 3 of the EIS, NMFS is currently preparing an EIS to evaluate alternatives for designating EFH for species managed under the Pacific Coast Groundfish FMP and measures to mitigate fishing-related impacts to that EFH, as practicable. NMFS is on a court-mandated deadline to publish a DEIS for these EFH-related actions by February 2005. That EFH EIS will more directly address fishing-related impacts to Pacific Coast groundfish EFH.

11. Two charts containing estimates of fishing mortality for overfished species in 2002 and 2003 (page 74-75 in the DEIS) must be corrected. First, the data contained in the charts are incomplete (at least as to scientific and research mortality) and underestimate actual recreational discard, as NMFS admits on page 116. Moreover, the commercial discard data in the charts are based on previous assumptions rather than actual data. NMFS must analyze fully the implications of relying on data that might understate the actual mortality being experienced on the water. Second, the EIS fails to analyze important issues presented by the data that is contained in the charts. For example, the charts reveal significant over-harvests of overfished species in each of the two years, yet the EIS fails to discuss and analyze the consequences of

these over-harvests for rebuilding or what these sustained over-harvests say about the effectiveness of the management measures NMFS has been using to rebuild overfished species. Third, the charts reveal illegal landings of cowcod in both of the years in question, but the EIS fails to discuss the implications of these illegal landings for cowcod rebuilding and for the effectiveness of NMFS's current management measures.

Response:

The Council and NMFS agree that the two tables in the DEIS depicting 2002 and 2003 harvests do not yet include estimates based on expansions and projections from West Coast Groundfish Observer Program (WCGOP) data. The Northwest Fisheries Science Center (NWFS) of NMFS is currently developing a final protocol for using observer data to estimate past discards in fisheries. The NWFS and the Council are sponsoring a July 26-30, 2004 workshop in Seattle, Washington to discuss and review data, data sources, and analytical methodology that will be used in all 2005 West Coast groundfish stock assessments. NMFS anticipates that the protocol for using observer data to better account for past discards will be discussed at the workshop and then finalized by October 2004. In the meantime, *draft* total mortality tables with updated observer-based discard estimates are included in this FEIS (Tables 12-1 and 12-2) to compare with Tables 5-4 and 5-5 using past discard assumptions. Again, these data are not based on finalized reviewed protocols and will be updated using those finalized protocols in autumn 2004. A brief description of the methods used in generating the preliminary estimates of commercial fishery discard mortality presented in Tables 12-1 and 12-2 is found at the end of this response to comment 11.

The Council's recommended groundfish specifications and management measures for 2005-2006, including those harvest levels that are governed by this Amendment 16-3, are based on the most recently available bycatch and discard information. The extent to which total mortality in past years differs from what was assumed in setting the 2005-2006 harvest levels will be incorporated into the next round of stock assessments, which will be prepared in 2005 and used to set groundfish harvest levels for 2007-2008.

Tables 5-4 and 5-5 do indicate overharvest of lingcod and bocaccio in 2002 and 2003. When the Council and NMFS determine that management measures are not keeping mortality of a species within its OY, they adjust the management measures based on the best and most current information to keep harvests within OYs. Most of the overharvest in 2002 and 2003 occurred due to higher-than-expected recreational harvests in California, information not known until late in 2003 (too late for fishery management adjustment). The decreased bocaccio OY and the significant depth-based fishery restrictions imposed on California fisheries, including the recreational sector, from 2002 to 2003 were due to the very pessimistic 2002 bocaccio assessment and the need to significantly reduce bocaccio mortality. Management measures adopted for 2003 did significantly reduce bocaccio mortality from 117 mt in 2002 to 22 mt in 2003. Given the implications of the most recent (2003) bocaccio stock assessment, which indicates annual harvests of 126 mt to 784 mt (in 2004) would comply with rebuilding objectives, the total mortalities estimated for 2002 and 2003 should pose little risk to bocaccio rebuilding. As indicated above, total mortalities will be taken into account in the new bocaccio stock assessment.

The lingcod overharvests in 2002 and 2003 were more notable and ascribed to an increase in lingcod abundance coastwide in recent years as the stock rebuilds. The Council and NMFS addressed this notable overharvest in the 2004 California recreational fishery by adopting a restrictive minimum size and bag limit in March 2004. The Council's SSC, using the most recent assessment and the updated catches in Tables 5-4 and 5-5, estimate that the lingcod stock is above $B_{40\%}$ in the north and within 0.7% of the rebuilding target on a coastwide basis. Therefore, the impacts of exceeding the OY on lingcod and bocaccio are minor given our best current understanding of stock status and rebuilding progress.

The apparently illegal landings of cowcod depicted in Tables 5-4 and 5-5 are a source of concern to the

Council and NMFS with regard to public conformance to regulations. However, from the perspective of the biological impacts to the cowcod stock and consequent rebuilding implications, last year's Cowcod Rebuilding Review (Butler *et al.* 2003) indicates that total mortalities were within the rebuilding OYs specified since the stock was declared overfished, except for one year when the spot prawn trawl fishery had higher cowcod impacts than expected. Since then, California has eliminated West Coast spot prawn trawling. There is a discussion of the results of the Cowcod Rebuilding Review in Section 5.1.1.2. The overall conclusion is that cowcod stock response to rebuilding measures imposed since the stock was declared overfished will not be known until there is another formal cowcod assessment. The next cowcod assessment is scheduled for Council consideration in November 2005. The Council is also developing a policy and protocol for accounting of illegal catches of groundfish species as enforcement makes these illegal catches known.

Methods used to generate total mortality in Tables 12-1 and 12-2: Observation of the limited entry trawl fishery by the WCGOP began in August 2001. From that starting point, data have been analyzed through August 2003. Data from the complete time period of collection were included in estimating discard for both 2002 and 2003. Data were restricted to those trawl tows which were not part of an Exempted Fishing Permit (EFP), and where retained groundfish tonnage exceeded nongroundfish tonnage, and retained pink shrimp was less than 100 pounds. Additionally, data collected from mid-water fishing for widow or yellowtail rockfish were partitioned and evaluated separately. Data were pooled across months, but were stratified into areas north and south of 40°10' N latitude and into depth intervals. Depth strata used for 2002 and for 2003 south of 40°10' N latitude were: 0 fm to 60 fm, 61 fm to 75 fm, 76 fm to 100 fm, 101 fm to 150 fm, 151 fm to 225 fm, 226 fm to 300 fm, and greater than 300 fm. Depth strata used for 2003 north of 40°10' N latitude were: 0 fm to 50 fm, 51 fm to 75 fm, 76 fm to 100 fm, 101 fm to 150 fm, 151 fm to 200 fm, 201 fm to 300 fm, and greater than 300 fm.

For species that are targeted using bottom trawl gear (e.g., sablefish, thornyheads, flatfish), discard ratios were calculated for each stratum as [discarded pounds/retained pounds] for each individual species. For species under rebuilding plans, discard ratios were calculated as [species discard pounds/sum of retained target species pounds]. For the mid-water widow-yellowtail fishery, discard ratios were calculated for all species using the combined poundage of widow and yellowtail as the denominator.

These discard ratios were then multiplied by the appropriate species retained poundages reported in trawl logbooks, following the same stratification used for the observer data. This yielded an estimated discard amount for each species, for all directed groundfish trawl trips covered by logbooks. Several trawl EFPs were conducted during 2003 and all required full retention of *Sebastes* species. Since all potential discards were landed and captured within the fishticket reporting system, application of non-EFP discard rates to all logbook tows would overstate the true amounts of discard (and total catch) for *Sebastes* species. Because an official listing of tows conducted as part of EFPs was not available at the time these estimates were made, an interim approach for categorizing EFP tows was used. During 2003, only EFP participants had the ability to legally bottom trawl for groundfish within the trawl RCA. Acknowledging this restriction, rockfish discard rates were not applied to target tonnage caught within the RCA depths off Oregon and Washington. Additionally, the principal EFP in Washington allowed large amounts of arrowtooth flounder to be landed in excess of trip limits. Therefore, tows by Washington vessels that exceeded the two-month allowance of arrowtooth flounder for non-EFP vessels were also categorized as EFP tows. During these two years, mid-water fishing for widow and yellowtail rockfish was permitted only in November and December of 2002.

Not all landings have a corresponding entry in the logbook data base. Ratios of fishticket-to-logbook species poundage were used to expand the estimates of discard for logbook trips up to a coastwide directed trawl total. For rebuilding species, the expansion ratios used the sum of retained target species poundage from each data set. Target species poundage associated with EFPs, using the criteria described above, was also subtracted from fishticket landings in each state and two-month period before expansion ratios were

calculated. For the target species, the retained poundage of each individual species was used to expand that species estimated discard. Ratios were calculated for each area, state, and two-month period. Discard amounts were then summed across areas and time periods.

WCGOP data from the primary fixed gear sablefish fisheries during 2001-2003 were used to calculate discard rates for rebuilding species. For 2002, these rates were calculated across all depths and multiplied by all sablefish landed north of 36° with fixed gear (limited entry and open access). For 2003, discard rates were calculated for the depths available to the fishery in that year. It is important to note that no observer data were collected during these primary fisheries from ports south of Fort Bragg, California. As a consequence, these data do not provide reliable estimates of discard occurring off central California.

Finally, discard of rebuilding species occurring in the at-sea whiting fishery is also included in the data in these tables.

12.2.2 Other Public Comments

Two members of the public commented that data gathered on recreational fisheries in California is inadequate and that fishery managers favor commercial fisheries over recreational fisheries.

Response:

Although outside the scope of this EIS, the concerns expressed in these comments are largely being addressed through the implementation of the California Recreational Fisheries Survey (CRFS). A description of the existing survey for California recreational fisheries, the new CRFS program, and the transition process can be found in Section 7.1.3.1. The primary goal of the program will be to produce timely, marine recreational, fishery-based data to sustainably manage California's marine recreational fishery resources. The changes proposed in this plan should increase the timeliness and accuracy of recreational fisheries data, so they can be more effectively used for inseason monitoring, estimating take for species of concern, developing harvest guidelines, producing stock assessments, and providing other information critical to management decisions. The initial focus of the program will be to produce timely catch estimates with reasonable confidence limits for those groundfish stocks declared overfished by NMFS and for those stocks with a directed harvest. The Pacific States Marine Fisheries Commission and the California Department of Fish and Game fully implemented the CRFS plan beginning in January 2004. It is foreseeable that information gathered in the CRFS could provide not only improved assessments of current recreational fisheries, but an adjustment or calibration of historic catch records. Current catch estimates from CRFS and any calibrated historic records can be incorporated into future stock assessments and rebuilding analyses where appropriate. As specified in the Groundfish FMP, rebuilding parameters published in federal regulation may be amended to reflect new understanding of stock health and productivity.

From: "Stephen Piazza" <stephen_piazza@sonic.com>
To: <a16-3comments.nwr@noaa.gov>
Subject: twilight zone of BS fishery management - Bogus Data
Date: Thursday, April 08, 2004 9:59 AM

Robert, are you guys responsible for this flawed logic? This is ridiculous! You guys are causing several thousands of sport guys to be up in arms over the recent rockfish closure. Look it's one thing if your data collection is correct. I'd be the first person to put my pole down. But I fish every weekend I know the strength of our stock in Central CA. But it's been proven that you guys suck at collecting correct data figures. It's been proven time and time again your data is incorrect. Yet you guys still use these erroneous figures to base closures on. All sport fishermen are going to fight this. I know I am. You guys have pissed off thousands of voters down here in CA. There is strength in numbers.

Have a Nice day ;-)
- Stephen M. Piazza (Sport fisherman)

Article released yesterday:

"You can hang up your rockfishing gear, at least for most of the summer. The federal Pacific Fisheries Management Council this week shut down the cod season until Aug. 1, using the same flawed data that resulted in severe restrictions on recreational lingcod fishing.

Randy Fry, a lobbyist representing the Recreational Fishing Alliance and the Coastside Fishing Club, called it the "twilight zone of BS fishery management," noting that federal regulators relied on widely discredited data collected by random phone calls and marina spot checks. The figures indicated recreational fishermen caught 2.6 metric tons of canary rockfish when the season was closed in January and February 2003 - more than the entire partyboat fleet caught all year. "Totally bogus," Fry noted. The same estimates, which regulators say they must use because it is all they have, claim that recreational fishermen caught 1,600 metric tons of lingcod during a limited six-month season last year - even though the recreational ling catch has averaged just 260 tons a year since 1996. (EA new data collection program is in the works¹. Under the federal program, commercial rockfishing will be allowed to continue, but recreational rockfishing will be closed until Aug. 1 and then reopen through October between Pt. Lopez and Cape Mendocino. The recreational season was scheduled to reopen in several weeks."

From: "Robert Costa" <costarobert@hotmail.com>
To: <a16-3comments.nwr@noaa.gov>
Subject: Rockfish closure
Date: Thursday, April 08, 2004 11:37 AM

I for one do not have a clue what you people use for data to make these stupid regulations. If that is what you get out of a college education our colleges are in a world of hurt. I have been fishing this coast for the last 45 years and have never taken more fish than I can use. It doesn't take a rhodes scholar to see that the commercial fishing industry has done more than its share of ruining this coast. Why would you stop the sport fishing community from fishing near shore or any place else for that matter and let the commercial interests have it all, any chance it's a buck. To tell the sport fisherman that they took way to many canarys from the North coast and they were a phrohibited catch to begin with is crazy. Have you ever followed a commercial trawler back in to port, the water is loaded with bycatch that they can't sell. I might be getting old but I am not that stupd to believe there is not money involved. I probably fish three or four times a week during the

spring, summer and fall and have yet to been surveyed for my catch of rockfish, salmon yes but nothing else. I suppose you people will not rest until we cannot fish period, all you want people to do is drive to some sanctuary or aquariam in there electric car and look at a few fish from a window, and I had to help pay for your education to make those decisions. Iam not against the commercial people just the stupidity of blaming the sport fisherman for everything that has gone wrong.

Thank You Robert Costa

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NATURAL RESOURCES DEFENSE COUNCIL

May 24, 2004



BY FAX (206-526-6736) AND MAIL

D. Robert Lohn
Regional Administrator
National Marine Fisheries Service
7600 Sand Point Way, N.E., Bldg. 1
Seattle, WA 98115-0070

RECEIVED

MAY 28 2004

PFMC

Dear Mr. Lohn:

We are writing on behalf of the Natural Resources Defense Council to comment on the draft environmental impact statement ("EIS") on Amendment 16-3 to the Pacific groundfish fishery management plan. The draft EIS fails to comply with the requirements of the National Environmental Policy Act ("NEPA").

The draft EIS omits consideration of critical alternatives pertaining to the rebuilding plans contained in Amendment 16-3. First, for three of the four overfished species at issue in the amendment (all but bocaccio), the EIS fails to consider adopting a rebuilding date for the species that is at the midpoint between T-min and T-max as calculated pursuant to NMFS's National Standard Guidelines. NMFS's guidance recommends that NMFS select rebuilding dates no later than the midpoint between these two numbers, but the EIS fails to evaluate this option for three of the four species at issue.

Second, the rebuilding target dates that the EIS does consider all have rebuilding probabilities of no better than 50 percent. NMFS should consider rebuilding alternatives that have considerably higher probabilities of successfully achieving rebuilding by the target rebuilding dates.

Third, the EIS fails to consider rebuilding alternatives that incorporate new management measures designed to protect and rebuild the species. Instead, the rebuilding plans contained in the document all rely exclusively on future management measures to be adopted as part of the biennial Pacific groundfish specifications in the future. The EIS's failure to consider rebuilding alternatives that incorporate new management measures, particularly management measures that reduce bycatch and habitat harm, constitutes a violation of NEPA.

Fourth, the EIS fails to consider a reasonable range of rebuilding alternatives for cowcod. In effect, the document considers only two alternatives for rebuilding the species, and both of those alternatives are very close to each other. NEPA demands that NMFS consider additional alternatives for rebuilding this species, including alternatives that would result in swifter rebuilding of cowcod.

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Comments on Draft EIS on Amendment 16-3
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The analysis and discussion in the EIS falls short of NEPA's requirements. For example, the description of the alternatives for widow rockfish in the executive summary erroneously indicates that the action alternative with the greatest fishing harvest (Action Alternative 1) would have the shortest rebuilding period.

It is clear that modeling assumptions are critical to the rebuilding choices presented, particularly for widow rockfish and bocaccio, yet the EIS fails to discuss fully the merits of the alternative models available for each species. Just as importantly, the document fails to include a full discussion of the benefits of precautionary rebuilding management in the face of scientific uncertainty, as well as of the risks presented if NMFS uses modeling assumptions that ultimately prove overly optimistic in stating the status or productivity of the species.

The EIS's discussion of cowcod issues generally is inadequate. It is not sufficient for NMFS to state that there is inadequate data about the species. Instead, NMFS must take affirmative steps to gather the data necessary to make informed, effective choices about rebuilding cowcod. In addition, the discussion of cowcod issues that the EIS does contain is inadequate. For example, the document's discussion of the Butler analysis (2003) fails to acknowledge that that analysis noted a lack of data about the actual amount of discard mortality occurring in the fishery.

The EIS rejects in an unreasoned way the option of adopting new management measures in the rebuilding plans, claiming that doing so would be insufficiently flexible. EIA at 13-14. There are two flaws in this reasoning. First, new management measures could be adopted in a flexible manner, such as committing to reduce bycatch mortality to a specified performance standard (e.g., a specific rate) and then specifying the exact measures to achieve that performance standard as part of the biennial specifications process. Second, management flexibility is neither the sole nor the most important decision criterion facing NMFS in its task of rebuilding overfished species. Even if it were the case that adopting new management measures would come at the cost of some management flexibility, that decreased flexibility would be counterbalanced by the benefits accorded by the new management protections for the species. The EIS fails to analyze these issues in a reasoned, adequate way.

As a general matter, the EIS contains minimal discussion and inadequate analysis of the costs and risks of longer rebuilding periods and lower rebuilding probabilities, and fails to explain the consequences of extended rebuilding periods or failed rebuilding efforts. In the same vein, the benefits of shorter rebuilding and greater protections for the species are inadequately discussed. We appreciate the inclusion of tables showing the qualitative social and economic costs and benefits of various rebuilding options (Tables 8-13 through 8-16). It should be noted that the tables for bocaccio, to give one example, reveal that the short-term costs of choosing the 90% probability of rebuilding in T_{max} (alternative 4), compared to the biologically more risky alternative 3, are balanced or outweighed by long-term and non-consumptive economic benefits. Alternative 4 is a preferable choice from a biological perspective; Table 8-13 supports that alternative as a rational choice from a socio-economic perspective as well. These conclusions should be incorporated and discussed in a thorough way.

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The EIS fails to discuss adequately the harm to the habitat of overfished species caused by fishing. The document does acknowledge that bottom trawling gear modifies seafloor habitat in a way harmful to rockfish species. EIS at 43. This important admission demands detailed analysis and a full discussion of the implications of such harm for the rebuilding choices facing NMFS, but the EIS fails to present such a discussion and analysis.

The EIS contains two charts containing estimates of fishing mortality for overfished species in 2002 and 2003. EIS at 74-75. While these charts are a welcome step in the right direction, given NMFS's resistance in the past to presenting such total mortality data, the charts present several problems that NMFS must correct. First, the data contained in the charts are incomplete (at least as to scientific and research mortality) and underestimate actual recreational discard, as NMFS admits on page 116. Moreover, the commercial discard data in the charts are based on previous assumptions rather than actual data. NMFS must correct these data infirmities and analyze fully the implications of relying on data that might understate the actual mortality being experienced on the water. Second, the EIS fails to analyze important issues presented by the data that is contained in the charts. For example, the charts reveal significant overharvests of overfished species in each of the two years, yet the EIS fails to discuss and analyze the consequences of these overharvests for rebuilding or what these sustained overharvests say about the effectiveness of the management measures NMFS has been using to rebuild overfished species. Second, the charts reveal illegal landings of cowcod in both of the years in question, but the EIS fails to discuss the implications of these illegal landings for cowcod rebuilding and for the effectiveness of NMFS's current management measures.

We ask NMFS to revise the draft EIS to bring it into compliance with the requirements federal law. We appreciate the opportunity to comment.

Sincerely,


Drew Caputo
Attorney


Karen Garrison
Senior Policy Analyst

TABLE 12-1. Draft estimated 2002 total catch mortality of selected groundfish species from West Coast commercial, tribal and recreational fisheries (mt).^{a/} (Page 1 of 2)

Species	LANDINGS AND MORTALITY			TARGETS				Shoreside Discard Mortality	At-sea Whiting Bycatch	Mortality from Fixed-gear Sablefish (All North)	Mid-water Widow/ Yellowtail Fishery (Period 6)
	Estimated Total Catch	PRELIMINARY Estimated Commercial Fishery Discard Mortality ^{a/}	Actual Landings ^{b/}	Total Catch ABC	Total Catch OY	Shoreside Discard					
Lingcod	980.0	159.1	820.9	841	577	313.5	156.7	0.5	1.8	0.1	
Pacific Cod	798.5	41.8	756.7	3,200	3,200	41.8	41.8				
Pacific Whiting ^{c/}	132,367.9	2,368.5	129,999.4	188,000	129,600	2,312.2	2,312.2			56.3	
Sablefish (north)	4,330.4	701.6	3,628.8	8,209	4,367	1,285.0	642.5		59.1		
Sablefish (south)	189.8		189.8	441	229						
Dover sole	7,583.8	1,264.8	6,319.0	8,510	7,440	1,264.8	1,264.8				
English sole	1,594.5	415.2	1,179.3	3,100		415.2	415.2				
Petrale sole	1,965.4	167.3	1,798.1	2,762		167.3	167.3				
Arrowtooth flounder	4,979.3	2,888.6	2,090.7	5,800		2,888.6	2,888.6				
Other flatfish	2,336.7	633.5	1,703.2	7,700		633.5	633.5				
Pacific Ocean Perch	185.3	34.5	150.8	689	350	30.5	30.5	3.8	0.0	0.1	
Shortbelly	11.7	11.4	0.3	13,900	13,900	11.4	11.4				
Widow	547.0	193.5	353.5	3,871	856	3.3	3.3	154.7	0.0	35.5	
Canary	109.7	41.2	68.4	272	93	32.1	32.1	5.2	1.3	2.7	
Chilipepper	249.0	74.0	175.0	2,700	2,000	74.0	74.0				
Bocaccio	140.3	28.6	111.7	198	100	28.0	28.0	0.6			
Splitnose	79.1	22.6	56.5	615	461	22.6	22.6				
Yellowtail	1,532.3	285.6	1,246.6	3,146	3,146	285.6	285.6				
Shortspine Thornyheads	1,155.7	389.4	766.3	1,004	955	389.4	389.4				
Longspine Thds. (north)	2,098.4	373.3	1,725.1	2,461	2,461	373.3	373.3				
Longspine Thds. (south)	124.7		124.7	390	195						
Unspecified Thornyheads	71.6		71.6								
Cowcod, Monterey	2.2	1.4	0.8	19	2	1.4	1.4				
Cowcod, Conception	0.0		0.0	5	2						
Yelloweye	11.2	2.1	9.1	52	14	0.5	0.5		1.6		
Darkblotched	202.2	96.3	105.9	205	168	93.0	93.0	3.2	0.1		

TABLE 12-1. Draft estimated 2002 total catch mortality of selected groundfish species from West Coast commercial, tribal and recreational fisheries (mt).^{a/} (Page 2 of 2)

Species	LANDINGS AND MORTALITY			TARGETS						
	Estimated Total Catch	Estimated Commercial Fishery Discard Mortality ^{a/}	Actual Landings ^{b/}	Total Catch ABC	Total Catch OY	Shoreside Discard	Shoreside Mortality	At-sea Whiting Bycatch	Mortality from Fixed-gear Sablefish (All North)	Mid-water Widow/ Yellowtail Fishery (Period 6)

- a/ Preliminary estimated discard mortality in the commercial fishery. Preliminary trawl discard calculated by applying discard mortality rates from combined 2001-03 West Coast Groundfish Observer data to 2002 trawl logbook data, by area and depth strata. Discard totals estimated for tows recorded in logbooks is expanded using state-specific ratios of fishticket landings to retained logbook catch. Several trawl EFPs were conducted during 2003 and all required full retention of Sebastes species. Since all potential discards were landed and captured within the fishticket reporting system, application of non-EFP discard rates to all logbook tows would overstate the true amounts of discard (and total catch) for Sebastes species. Because an official listing of tows conducted as part of EFPs was not available at the time these estimates were made, an interim approach for categorizing EFP tows was used. During 2003, only EFP participants had ability to legally bottom trawl for groundfish within the trawl RCA. Utilizing this restriction, rockfish discard rates were not applied to target tonnage caught within the RCA depths off Oregon and Washington. Additionally, the principal EFP in Washington allowed large amounts of arrowtooth flounder to be landed in excess of trip limits. Accordingly, tows by Washington vessels that exceeded the 2-month allowance of arrowtooth flounder for non-EFP vessels were also categorized as EFP tows.
- b/ Includes shoreside commercial and tribal landings from PacFIN, observed total catch including estimated discards in the at-sea whiting fishery, and RecFIN recreational catch plus observed discard mortality (A+B1).
- c/ Estimated commercial discards shown for whiting are from the non-whiting groundfish fishery. Total catches of whiting in all sectors of the directed whiting fishery are tracked inseason through full retention (shoreside) or observers (at-sea).

TABLE 12-2. Draft estimated 2003 total catch mortality of selected groundfish species from West Coast commercial, tribal and recreational fisheries (mt). (Page 1 of 2)

Species	LANDINGS AND MORTALITY			TARGETS					
	Estimated Total Catch	Estimated Commercial Fishery Discard Mortality ^{a/}	Actual Landings ^{b/}	Total Catch ABC	Total Catch OY	Shoreside Discard	Shoreside Discard Mortality	At-sea Whiting Bycatch	Mortality from Fixed-gear Sablefish (All, North of 36)
Lingcod	1,366.6	81.7	1,284.9	841	651	159.8	79.9	0.5	1.3
Pacific Cod	1,323.1	73.5	1,249.6	3,200	3,200	73.5	73.5		
Pacific Whiting ^{c/}	142,913.8	1,422.7	141,491.1	188,000	148,200	1,422.7	1,422.7		
Sablefish (north)	6,386.6	1,126.1	5,260.5	8,209	6,500	2,067.4	1,033.7		92.4
Sablefish (south)	204.0		204.0	441	294				
Dover sole	8,342.2	956.6	7,385.7	8,510	7,440	956.6	956.6		
English sole	1,241.4	339.0	902.4	3,100		339.0	339.0		
Petrale sole	2,160.6	144.4	2,016.2	2,762		144.4	144.4		
Arrowtooth flounder	3,243.5	904.8	2,338.7	5,800		904.8	904.8		
Other flatfish	2,093.5	490.7	1,602.8	7,700		490.7	490.7		
Pacific Ocean Perch	160.1	21.9	138.2	689	377	15.5	15.5	6.3	
Shortbelly	9.3	2.3	7.0	13,900	13,900	2.3	2.3		
Widow	57.9	16.1	41.8	3,871	832	1.7	1.7	14.4	
Canary	46.8	12.5	34.3	272	44	10.9	10.9	0.9	0.6
Chilipepper	49.5	15.4	34.1	2,700	2,000	15.4	15.4		
Bocaccio	29.1	8.5	20.6	198	20	8.2	8.2	0.3	
Splitnose	118.8	9.3	109.5	615	461	9.3	9.3		
Yellowtail	504.5	22.1	482.4	3,146	3,146	22.1	22.1		
Shortspine Thornyheads	1,220.2	387.8	832.4	1,004	955	387.8	387.8		
Longspine Thds. North	1,834.8	323.9	1,510.9	2,461	2,461	323.9	323.9		
Longspine Thds. South	153.1		153.1	390	195				
Cowcod, Monterey	0.4	0.2	0.1	19	2	0.2	0.2		
Cowcod, Conception	0.0		0.0	5	2				
Yelloweye	8.1	1.5	6.6	52	22	0.3	0.3		1.3
Darkblotched	139.9	51.8	88.1	205	172	47.3	47.3	4.3	0.2
Black Rockfish (north)	174.0		174.0	615					
Black Rockfish (south)	976.1		976.1	500					
Black Rockfish Total	1,150.1		1,150.1	1,115					

a/ Preliminary estimated discard mortality in the commercial fishery. Preliminary trawl discard calculated by applying discard immortality rates from combined 2001-03 West Coast Groundfish Observer data to 2002 trawl logbook data, by area and depth strata. Discard totals estimated for tows recorded in logbooks is expanded using state-specific ratios of fishticket landings to retained logbook catch.

Several trawl EFPs were conducted during 2003 and all required full retention of Sebastes species. Since all potential discards were landed and captured within the fishticket reporting system, application of non-EFP discard rates to all logbook tows would overstate the true amounts of discard (and total catch) for Sebastes species. Because an official listing of tows conducted as part of EFPs was not available at the time these estimates were made, an interim approach for categorizing EFP tows was used. During 2003, only EFP participants had ability to legally bottom trawl for groundfish within the trawl RCA. Utilizing this restriction, rockfish discard rates were not applied to target tonnage caught within the RCA depths off Oregon and Washington. Additionally, the principal EFP in Washington allowed large amounts of arrowtooth flounder to be landed in excess of trip limits. Accordingly, tows by Washington vessels that exceeded the 2-month allowance of arrowtooth flounder for non-EFP vessels were also categorized as EFP tows.

TABLE 12-2. Draft estimated 2003 total catch mortality of selected groundfish species from West Coast commercial, tribal and recreational fisheries (mt). (Page 2 of 2)

Species	LANDINGS AND MORTALITY				TARGETS				
	Estimated Total Catch	Estimated Commercial Fishery Discard Mortality ^{a/}	Actual Landings ^{b/}	Total Catch ABC	Total Catch OY	Shoreside Discard	Shoreside Discard Mortality	At-sea Whiting Bycatch	Mortality from Fixed-gear Sablefish (All, North of 36)

b/ Includes shoreside commercial and tribal landings from PacFIN, observed total catch including estimated discards in the at-sea whiting fishery, and RecFIN recreational catch plus observed discard mortality (A+B1).

c/ Estimated commercial discards shown for whiting are from the non-whiting groundfish fishery. Total catches of whiting in all sectors of the directed whiting fishery are tracked inseason through full retention (shoreside) or observers (at-sea).