

Monterey Bay Aquarium Seafood Watch®

Seafood Watch® Criteria for Fisheries

Summary of comments from Public Consultation 1 and Responses

Preamble

Seafood Watch assesses the environmental sustainability of fisheries and aquaculture by compiling relevant science-based information and evaluating that information against our standards (called 'Criteria' elsewhere on this website). We periodically revise our standards to ensure we account for developments in the scientific understanding of the ecological impacts of fisheries and aquaculture operations, as well as in our understanding of what producers and managers can do to mitigate those impacts. Seafood Watch initiated a public comment period from October 27, 2014 to January 16, 2015 and received comments from ENGO's, producers, certification schemes, and other interested stakeholders.

The comments received have been summarized, grouped together by similar themes or by criterion and are presented in the left hand columns of each table below, with Seafood Watch responses in the right column. Seafood Watch has carefully considered all comments received in addition to reviewing many of them with our Technical Advisory Committee. Below we present our responses to all comments received as part of the official Public Comment Period as per the requirements of the ISEAL Code of Good Practice Standards-Setting Code¹.

General Comments

Summary of Comments	Seafood Watch Response
Suggests criteria review should consider overarching goal of including sufficient detail to aid interpretation vs. allowing criteria to be flexible enough to address multiple types of fisheries	Agreed, we have aimed to strike this balance throughout all of the decisions noted below.
Criteria should consider the impact of ghost fishing	Agreed, this is discussed in more detail in each

¹ <http://www.isealalliance.org/our-work/defining-credibility/codes-of-good-practice/standard-setting-code>

	relevant criterion
Focus on harmonizing outputs and recommendations with those of the Marine Stewardship Council certification program	We have considered the MSC approach in this review and in some cases have made changes that are expected to increase alignment between the two systems. However, the overarching goal of the criteria review is to improve the SFW standard rather than to increase alignment with any other particular standard. Currently we consider the two standards to be fairly closely aligned, but those areas where they differ reflect decisions we have made in keeping with our guiding principles. In addition, our criteria reflects the whole spectrum of performance from low to high performers.
Incorporate socioeconomic factors into criteria	Seafood Watch recognizes the growing importance of social issues and is working to understand how we can include the most critical social issues as part of our recommendations. We are currently trialing some options that would allow us to recognize the work of others in our process. Because the scope and scale of these offenses can be variable and must be verified, we have not yet identified how to incorporate such issues into our scoring. As such, we are working with our expert NGOs and consultants to inform future decisions.
Outline a pathway for how to improve a score	We are considering how to make the Criteria more user-friendly for producers, which we believe will foster improvement of practices. This exercise is outside the scope of this criteria revision process; however, it is being actively explored.
The one Red/two Red override of the numeric scores is appropriate irrespective of whether there is 4 or 5 Criteria.	We are maintaining this structure.
Quality of information is an important factor to include in <u>all</u> criteria.	Quality of information is included in Criterion 1 and 2 (see language particularly in the “Very low concern” category for 1.2/2.2), and in the “research and monitoring” subfactor of Criterion 3, and high quality information is required to score in the higher categories under Criterion 4.2 and 4.3. When good quality information, evidence, or demonstrated effectiveness is lacking the criteria require scoring the fishery in a more precautionary way.
Fisheries with poor stock status and management but few ecosystem impacts (perhaps simply because of the nature of the fishery) might achieve a higher score than would otherwise be warranted	If stock status and management are both poor, the fishery will be rated red due to the decision rules. However a fishery could score “green” with stock status and management both earning mediocre

due to the score being based on 4 criteria with 2 pertaining to ecosystem impacts. It might be worth testing this.	(yellow) scores if bycatch and habitat/ecosystem score highly. This may be addressed by an additional decision rule, requiring a “green” score in either the stock or management criteria in order to score as a Best Choice overall, which we are considering and testing in this second comment period.
Numerous in-text edits were suggested throughout the document. Specific edits suggested can be seen by viewing the original public comment forms available on our website.	Certain in-text edits were if they clarified the intent of the criteria. Specific changes to the text can be seen by comparing the first and second versions of the consultation document.
Develop tool to show fisheries how to improve to Best Choice or Good Alternative	We are interested in pursuing this idea, but it is outside the scope of criteria review and would proceed after completion of the criteria revision process.
To improve consistency and ease of application of the criteria, it was suggested that SFW commission a consultant’s study on various topics, including default habitat mitigation scores for broad fishing areas, and inherent vulnerability scores for species or species groups.	We are interested in pursuing this idea, but it is outside the scope of criteria review and would proceed after completion of the criteria revision process.

Criterion 1

Criterion 1 – General comments

Summary of Comments	Seafood Watch Response
Ecosystem-based management factors should be incorporated into Criterion 1 and 2	We are making this change. We have added the language “appropriate given the species’ ecological role” to the language in factors 1.2/2.2 and 1.3/2.3 that address biomass and fishing mortality relative to appropriate reference points, and have further defined appropriate reference points in the case of forage species according to the guidelines published in the Lenfest Forage Fish Task force. More guidance for species with other ecological roles will be added as the science develops.
COSEWIC (Committee on the Status of Endangered Wildlife in Canada) should be considered by Seafood Watch as one of the scientific bodies that ranks species as threatened or endangered rather than SARA (Species at Risk Act).	Our program already uses COSEWIC determinations as part of the criteria for determining if a stock is endangered or threatened, and will make this more explicit in our criteria in this revision.
Fisheries targeting animals listed as vulnerable or threatened by either an international, national or	While in the vast majority of cases, any fishery that is targeting an endangered or threatened species

state government body and specially in Canada, species listed under COSEWIC should be automatically receive an avoid ranking.	will be rated Avoid (due to a combination of red scores for Criterion 1 and Criterion 3), we have decided to leave this as is in the criteria rather than create a new rule automatically ranking them as Avoid. This allows for more flexibility in special circumstances.
The guidance provided for scoring Criterion 1 should discuss how reference points for production maximization (or optimization) relate to reference points for maintaining the ecological role of a fish stock within a natural ecosystem. Key issues include the use of deterministic constructs when we know that ecosystems are stochastic, the lack of predator-prey linkages, dependencies and cascading effects in developing reference points to protect the role of a fish stock in ecosystems.	Some of these factors are outside the scope of what analysts can be expected to determine and assess in an assessment. However, we are adding guidance that there are concerns with insufficiently precautionary, deterministically calculated reference points (in the glossary definition for “appropriate reference points”, and are also incorporating the recommendations from the Lenfest Forage Fish Task Force into the definition of an “appropriate reference point” for forage species. Our intention is to ultimately expand this definition to provide guidelines for other species playing a disproportionate role in the ecosystem (e.g., apex predators), but the decision of our Technical Advisory Committee was that the science to require a particular threshold for such species was not yet there.

Criterion 1 – Comments on Inherent Vulnerability

Summary of Comments	Seafood Watch Response
<ul style="list-style-type: none"> Score vulnerability only when the results inform the scoring or rankings Score inherent vulnerability for all species 	Reviewer comments were divided. We determined that as vulnerability scores would not affect the ranking when stock information was available, it was most efficient and practical to score only in cases where other stock information is not available.
Vulnerability should be considered as part of the fishing mortality rather than biomass factor	The vulnerability score includes elements relevant to both abundance and fishing mortality. In our old criteria, the productivity elements (which most reflect likely stock status) were considered under the biomass factor and susceptibility elements were considered under fishing mortality. The decision of our Technical Advisory Committee was to integrate these, and consider them under the biomass factor when biomass is unassessed, however this is integrated in such a way that the result on the scoring is similar whether vulnerability is incorporated as part of the fishing mortality or biomass factor.
M vs F should be weighted more heavily than	We are considering a different approach, using a

<p>other metrics in the vulnerability calculation Why isn't M considered for invertebrates?</p>	<p>published PSA approach for fish and invertebrates, and are welcoming comments on this approach in the second comment period. The proposed PSA does include M vs F (though does not specify a particular weighting). See consultation document for details.</p>
<p>Concerns with vulnerability assessments in general:</p> <ul style="list-style-type: none"> • Highly productive stocks can still be very vulnerable, e.g. sardines • PSA approaches may underestimate risk 	<p>We discussed the concerns with vulnerability assessments in our Technical Advisory Committee, however the consensus of the Technical Advisory Committee was that these approaches are the best available for rating the risk associated with unassessed species at this time. We are also including more guidance to allow the use of other data-poor methods, when they are available but stock assessments are lacking, in lieu of the PSA. The PSA approach is integrated into our criteria in such a way as to be precautionary (i.e., unassessed species with only a PSA score at best a yellow in Criterion 1, and the fishery is scored more poorly under Criterion 3 when assessments are lacking). This results in the balance of precaution most appropriate for our program.</p>
<p>Not useful to consider fecundity and reproductive mode in calculating vulnerability</p>	<p>We are considering a different approach, using a published PSA approach for fish and invertebrates, and are welcoming comments on this approach in the second comment period. See consultation document for details.</p>
<ul style="list-style-type: none"> • Expert opinion should be allowed to override automatically calculated vulnerability score • Burden of proof to do so must be high • Some felt expert opinion should not override scores 	<p>We agree that expert opinion should be allowed to override the PSA score, but it must be carefully considered. This will be incorporated into guidance.</p>
<p>Consider how vulnerability to climate change impacts might be incorporated. The important question is whether management is responding. The method would be too difficult for SFW analysts to apply independently, but assessments could consider whether species is rated by NMFS as highly vulnerable to climate change.</p>	<p>Reviewers were split on whether or how this information should be used in assessments. Based on the feedback and review of the current state of NMFS' work on climate variability, we believe the most appropriate approach will be to credit management for considering environmental variability. The approach (which involves expert workshops on each set of species) is not practical for SFW to apply on its own. While consideration of environmental factors may be more important for some species (i.e. those that are highly vulnerable to climate change) than others, at this stage it is premature to use the NMFS climate vulnerability scores to require this of some species</p>

	and not others, as the approach to date has only been applied in one region of the US – which could lead to putting an unfair burden on those fisheries relative to those in other countries or regions.
Distinguish in criteria between conservative Bmsy/Fmsy proxies, e.g. 35%-40% B0 and F40%, and deterministically determined Bmsy and Fmsy, which may be far less conservative. Using the latter runs a high risk of overfishing or depleting the stock.	Currently our appendix provides some guidance on “appropriate reference points” while seeking not to be overly prescriptive. We will incorporate this comment into that guidance.

Criterion 1 – Comments on Factor 1.2

Summary of Comments	Seafood Watch Response
<p>Scoring should reflect both status of stock and quality of data or assessment.</p> <p>Some reviewers felt any assessment should be considered as high quality if approved without major caveats in a peer review process.</p> <p>Others disagreed, and specific suggestions of assessment characteristics to consider include: time since last assessment, fluctuations in population, confidence intervals, results of sensitivity analysis, and whether assessment is multi-species, peer review process and outcome.</p>	<p>We have added guidance to define what we consider to be a ‘robust’ stock assessment which can be found in the scoring tables for factor 1.1. In order to be considered robust and earn a “very low concern” score, a stock assessment must be recent, peer reviewed and approved, and include fishery-independent data. Stocks with a credible stock assessment as described above, but which indicate a particularly high level of uncertainty (e.g. multiple models resulting in opposing outcomes) would also not be able to score “very low concern”.</p>
<p>We asked reviewers about a proposal to combine the categories of “high concern” (overfished) and “very high concern” (endangered or threatened). Some felt these two categories represented very different levels of concern and must be separated. Others had no concerns provided testing showed the scoring had reasonable results, or felt it would be an improvement given inconsistency in the level of concern represented by the two categories.</p>	<p>We have maintained the proposal to combine these two categories. The rationale is that while endangered/threatened and overfished might theoretically represent very different levels of concern, the reality is different (as illustrated, for example, by the lack of endangered/threatened status for Pacific bluefin tuna, compared to the relatively robust status of some listed species that are recovering). Another motivation is the lack of consistency in endangered species listing across different nations which leads to holding the more progressive nations (with stronger legislation) to a higher standard. The effects of this proposed change will be examined in pilot testing.</p>
<p>Reviewers were split regarding opinions on whether trend data should be used to distinguish rebuilding from declining stocks and score them differently. Some agreed with the proposal, others had concerns with the consistency and validity of</p>	<p>We have not added a specific consideration of trends data to differentiate between rebuilding and declining stocks. After careful consideration of the options available, we concluded that trends data were highly variable as an indicator of stock</p>

<p>trend data, and/or felt that stocks should not get any credit for rebuilding/increasing trends until they reached the reference point.</p> <p>Those who supported the use of trend data indicated it would be important to set a consistent method for determining what a declining or increasing trend is, including the suggestion of using a robust, parametric regression analysis and setting guidelines for the length of time needed. Most felt the trend data should be relative to the species' generation time, but one suggested that would not be appropriate in cases where the fishery was younger than one generation and suggested instead looking for a trend of at least five years.</p>	<p>health. We have added an extra requirement for abundance to be greater than 75% of the target reference point in order for a low concern to be awarded. We believe this added level of precaution addresses the some of the concerns raised by those advocating a consideration of trends data in the assessment criteria.</p>
<p>Species that are highly vulnerable, if there is only weak evidence that they are not overfished, should be scored "high concern".</p>	<p>In the absence of a robust stock assessment, we will consider the use of data-limited assessments as indicators of stock health. For a species with high inherent vulnerability there must be two data-limited assessments indicating that stock status is not of concern. Guidance has been added to the scoring table for factor 1.1 to indicate how a fishery should be scored based on data-limited assessments and inherent vulnerability.</p>
<p>Traditional target and limit reference points are inadequate in assessing the status of certain stocks, particularly forage fish stocks and other stocks that have high ecosystem importance. Seafood Watch should not default to the reference points used by management, but should have its own independent reference points specific to the type of species being assessed that are informed by, if not equivalent to, those in the Lenfest Recommendations.</p>	<p>Additional guidance has been developed to compare different reference points that may be used by fishery managers, ensuring consistency in how they are scored in Seafood Watch assessments.</p> <p>Reference points must be 'relevant to the ecological role' of the species being assessed. Additional guidance has been added to ensure that forage fish are assessed (whether in criterion 1 or 2) in relation to reference points recommended by the Lenfest Forage Fish Task Force.</p>
<p>Assessment should require direct information on biomass, rather than using vulnerability as a filter. In the absence of a stock assessment, the SFW assessment should require evidence of high abundance from at least two different empirical methods.</p>	<p>We have added guidance to the scoring table for factor 1.1 allowing for the use of data-limited assessments to support scores of low concern or moderate concern in the absence of a robust stock assessment.</p> <p>Inherent vulnerability is used to score a species where there is no data available on abundance.</p>
<p>Suggest that instead of "significant uncertainty" we consider whether there is "scientific</p>	<p>We have changed the guidance to reflect scientific uncertainty and scientific controversy within stock</p>

controversy” around the estimates of biomass relative to reference point	assessments.
Some felt in the absence of any stock data, target species should be scored a “moderate” concern, while other reviewers felt that “high concern” is more appropriate.	We will be retaining the current approach where an unknown stock status is scored according to inherent vulnerability. An absence of data to determine stock status will be scored in criterion 3 when assessing data collection and monitoring as part of the management strategy.
Suggest using term “evaluation” in place of “assessment” because an evaluation could be available in the absence of full stock assessment	We have retained the term ‘assessment’ to ensure consistency and reduce confusion through the addition of terms. In order to clarify what is considered an appropriate stock assessment, guidance has been provided. Additional guidance has been developed and included to identify data-limited approaches to stock assessment to allow such methods to be considered in the Seafood Watch report.
Fishery should consider uncertainty in setting reference points	Uncertainty within the stock assessment and reference points are considered within Seafood Watches assessments. A high level of uncertainty within a stock assessment can result in a low score being achieved. We also require the management take uncertainty into account to receive the highest score for management effectiveness.
Inherent vulnerability, stock status, and fishing mortality are difficult to score for marine mammals, sea turtles, and seabirds due to data deficiency and resultant heavy reliance on IUCN ratings. The IUCN ratings are global in nature, and may not reflect the situation in individual regions adequately. The general tendency is to score too highly and subsequently face criticism from local experts.	Where possible we use local or regional stock assessments when scoring all species, including marine mammals, sea turtles, and seabirds. We have added guidance of how to score a species when there is conflicting information between local or regional stock assessments and an IUCN (or other international listing).
From criteria appendix: “If relying on CPUE rather than a LEP-based reference point, trends in size structure are also needed” – Trends in size structure are not useful as they cannot distinguish between the effects of fishing vs a recruitment pulse.	We have edited the criteria appendix to remove this stipulation
For data poor fisheries, recommend a framework from a recent publication (Fujita et al 2014)	We have added guidance on the use of data-limited assessments in the scoring table for factor 1.1.

Criterion 1 – Comments on Factor 1.3

Summary of Comments	Seafood Watch Response
---------------------	------------------------

Reviewers were supportive of proposed simplifications to the table for Factor 1.3	We have retained the simplified scoring as proposed in the first public consultation.
Some reviewers felt that the weighting of Factors 1.2 and 1.3 should be adjusted to allow the current stock status to weigh more than fishing effort. Others felt that fishing mortality should be given more weight because if fishing mortality is appropriate than that should allow stocks to be maintained or rebuild to favorable levels in the long term.	We have not changed the weighting of the individual scoring factors. The current criteria weights both equally, and the scoring allows for a fishery that is rebuilding from depleted levels and has set fishing mortality appropriately to score in the moderate range, which helps set appropriate incentives and reward sound management, while recognizing that, all else being equal, fisheries harvesting a stock at low biomass are not as sustainable as those harvesting an abundant stock.
Reviewers either supported the proposal to remove the “critical” concern from the 1.3 table, or were able to accept it provided that the critical concern was added into management factor 3.1.	The critical concern scoring will be removed from the fishing mortality assessment as originally proposed. The critical concern was added to management factor 3.1.
F fluctuating around F_{MSY} should be considered a low concern [it is currently moderate] provided that an appropriate conservative proxy for F is used.	We will continue to consider Fishing mortality fluctuating around F_{MSY} as a Moderate Conservation Concern. The reorganization of the scoring for factor 1.2 results in three possible scoring options; Low Concern (5), Moderate Concern (3), and High Concern (1). We do not believe it would be appropriate to score a fishery as Low Concern, the highest score available, if fishing mortality is fluctuating around the reference point, i.e. F_{MSY} is sometimes exceeded.
Unknown F should be considered a high concern.	We will continue to consider an unknown fishing mortality (relative to sustainable levels) as a Moderate Conservation Concern. Where fishing mortality is unknown but it is probable or suspected that overfishing is occurring, we will score a fishery as a High Concern.
Consider scoring a small fishery that is a non-significant contributor to the total fishing effort (e.g., artisanal handliners targeting the same tuna stock as industrial longliners and purse seiners) as better than a high concern when overfishing is occurring on stock as a whole, not just for bycatch but also for target species.	The scale of an individual fishery’s impact is considered in the context of total fishing mortality and relative to the appropriate reference points. A targeted fishery will not be considered negligible however as it is targeting the stock which may be considered overfished, or may be experiencing overfishing and the management system therefore has a responsibility to ensure that the impact of a fishery is appropriate within the context of cumulative fishing impacts. For a market-based program, the impact of a fishery is most rationally considered on a per-catch basis (i.e. it is not more sustainable to have numerous small fisheries all targeting the same species, versus one large fishery targeting that species, if the catch is the

	<p>same). The impact per-catch on the target species is the same regardless of the fishery scale. Smaller and in particular, more selective fisheries may receive better scores for their impact on bycatch species, as their impact on a per-(target) catch basis is often lower.</p>
<p>Protection of a large proportion of the population is not relevant in Criterion 1, though could be considered under management strategy instead.</p>	<p>We have removed this option from the scoring table for Criterion 1. Upon further consideration it was noted that protection of a large proportion of the stock would only be successful if a number of other factors are known, for example that a representative proportion of the whole stock structure was protected. Such information is often lacking.</p>
<p>Overfishing alone should not lead to a high concern for 1.3 as long as the stock is not overfished and there are measures in place to reduce fishing effort when the stock reaches target biomass.</p>	<p>Overfishing by definition is not sustainable, and is therefore scored as a high concern. If a stock is abundant and above biological reference points such that it scores very low concern for Factor 1.1, the criterion 1 score will be yellow. In all other instances a red score for criterion 1 would be appropriate.</p>
<p>Use F reference points from the Lenfest Forage Fish Task Force recommendations for forage species, rather than setting the bar at Fmsy. Ecosystem impacts should be considered in C1.</p>	<p>Reference points considered in Criterion 1 are now required to be set at a level appropriate to a species ecological role, which is defined according to the Lenfest Forage Fish Task Force guidelines for forage species in particular. Other ecosystem impacts are assessed in Criterion 4 as they can vary widely from fishery to fishery and are not always related to the impact on the target species.</p>
<p>Overfishing an already overfished stock should result in an Avoid recommendation, and should earn an extra penalty taken from the final score.</p>	<p>In the event that a fishery is actively overfishing an endangered, threatened or overfished stock it is likely that it would receive a red score under Criterion 3 for management as the management system is failing to protect and recover the stock, in addition to a red score under Criterion 1. With this scoring rule in place we did not feel it necessary to add another scoring rule.</p>
<p>Ghost fishing impacts should be considered.</p>	<p>We added guidance to Criteria 1 and 2 to ensure that analysts consider species level impacts associated with ghost fishing. Guidance has also been added to Criteria 3 and 4 to assess whether ghost fishing impacts are being addressed in relation to management and habitat concerns respectively.</p>
<p>SFW should commission studies to develop general inherent vulnerability scores for species or species groups</p>	<p>We will be assessing inherent vulnerability using a Productivity and Susceptibility Analysis. We plan to commission a contractor to help compile the</p>

	inputs and calculate the PSA scores for species that are assessed by SFW, to increase the efficiency and consistency of the use of PSAs in our assessments.
It may be too onerous to score Factor 1.3 at the stock level for complex fisheries such as salmon fisheries with numerous stocks and hatcheries.	We are developing special protocols and guidance for salmon fisheries, where specific guidance on how to account for assessments of numerous fisheries catching a number of stocks of the same species is provided. For more information please review the Seafood Watch Criteria for Salmon Fisheries
A more conservative F_m is needed for highly vulnerable species	We score fishing mortality within a fishery by comparing it to F_{MSY} or an appropriate proxy which, if estimated effectively in a precautionary manner, will include life history parameters which account for the vulnerability of a species. Our criteria do include guidance that more conservative fishing mortality reference points are needed for more vulnerable species (see glossary).

Criterion 2

Criterion 2 - general comments

Summary of Comments	Seafood Watch Response
<p>Structural considerations Instead of just “main species”, Seafood Watch should be sure to look more broadly including at rare species that may be a small part of bycatch.</p> <p>Consider the use of a gear-based scheme similar to that used in Appendix 3 (i.e. the unknown bycatch matrix) as a default scoring scheme for this criterion with modification when such data are available. The bycatch score can be assigned based on a) gear type, b) bycatch composition based on target species and areas of operation (a modified version of the bycatch matrix in Appendix 3), and c) total impact score by the scale of the fishery. A base score computed from these sub-scores can then be modified based on Factor 3.2, either within Criteria 2 or separately in Criteria 3.</p> <p>Criteria should downgrade fisheries with a wide</p>	<p>We evaluate species of concern (rare spp.), even when they are a small proportion of the bycatch.</p> <p>After discussion in the Technical Advisory Committee meeting, the consensus was that the population impacts focus of our criteria should be retained. For bycatch mortality, we are working on expansion of the existing unknown bycatch matrix (at least, initially, for sea turtles, seabirds, sharks and marine mammals) to include a regional component and otherwise build upon and refine the default gear-based scoring scheme used in Appendix 3. We are considering using this to assess all poorly assessed or unassessed bycatch species, and species of concern, and are making efforts to try to make criteria as consistent as possible w/ the MMPA-protected species. However, we feel it remains most appropriate to assess species with known status, including any that are known to be ETP or overfished or have</p>

<p>suite of poorly assessed bycatch species. Bycatch score should reflect fisheries selective and bycatch monitoring, assessment and control.</p> <p>Considering target species under Criterion 2 seems to result in targeted species being penalized as bycatch. It seems like each species (and its associated stock status evaluation) should fall under one of the criteria, but not both.</p>	<p>overfishing occurring, using the tables that are designed to score their population impacts based on these factors.</p> <p>Because the construction of the unknown bycatch matrix (which is designed to be conservative and is based on the likely impacts of different gear types) is risk-based, with lower scores given for gear types prone to catching a greater range of species, this proposed change will likely result in lower scores for non-selective fisheries that catch a wide range of unassessed (or poorly assessed) bycatch species, reflecting the greater risk that one or more of those species is being overexploited.</p> <p>Criterion 3 (subfactor “Bycatch Management” evaluates bycatch management strategies.</p> <p>We do not list target spp. under Criterion 2. If a spp. is caught incidentally in another fishery, it is listed as bycatch in a separate SFW report. It is not listed as bycatch in its own report. The only target spp. evaluated in Criterion 2 are for multi-spp. fisheries.</p>
<p>Comments on “main species” filter:</p> <p>In addition to biomass of bycatch in catch, “main species” filter should consider the “importance of impacts” based on, e.g., propensity for periodic/spatial aggregations for breeding, feeding; predator diet dependency profiles; etc.</p> <p>Propose to simplify “main species” to only:</p> <ul style="list-style-type: none"> • The catch of the species in the fishery under assessment composes >5% of that fishery’s catch, or • The species is overfished, depleted, a stock of concern, endangered, threatened, IUCN Near Threatened, US MMPA strategic species, and/or subject to overfishing and the fishery causes >1% of the species’ total mortality across all fisheries. <p>All species should be assessed according to their FishBase vulnerability scores as a first step in prioritization.</p>	<p>While the main species filter does not consider the importance of impacts (and we feel it would not be feasible for an analyst to do so in considering all potential “main species”, some of these factors are incorporated into the Productivity-Susceptibility Analysis used for scoring when stock status is unknown. Regarding spp. of concern, we incorporate the broad concept of susceptibility with the following proposed language, “...may be a significant contributor to the conservation concern of the species.” Although factors contributing to susceptibility often are unavailable, we try to capture susceptibility under Criterion 2.1, rather than in the main spp. filter.</p> <p>We are simplifying these criteria, very similarly to what has been proposed here, though including an additional factor that allows for inclusion of a species that may be a small part of the catch (and not a species of concern), but the fishery is a main</p>

	<p>cause of its mortality (e.g. for very large fisheries).</p> <p>Based on our experience using the fishbase score in our assessments over the last four years, the index has often not reflected expert knowledge or opinion on vulnerability. We are therefore moving toward a PSA approach for vulnerability assessment. All species that are believed to be significantly impacted by the fishery (either because they are a large component of the catch, the fishery is a main cause of their mortality, or they are rare, overfished or endangered), are evaluated. Assessing all species with a PSA is not feasible.</p>
<p>Bait species Bait species should be kept separate from the bycatch issue and assessed instead in Criteria 4 (Impact on the Ecosystem).</p> <p>Baitfish must be evaluated [in Criterion 2] to determine whether they should be included as “main,” and whether existing baitfish management is appropriate and sufficient.</p>	<p>We have chosen to keep the vulnerability, abundance, and mortality of bait species here and discuss all ecosystem effects separately under ecosystem-based management (Criterion 5 in current proposal). The ecosystem criterion focuses broadly on ecosystem-based management, while Criterion 2 focuses on the population impact due to direct mortality of particular species.</p> <p>Baitfish species, when known and passing the “main species” filter, should be evaluated in Criterion 2 (and this has been further clarified in the language for that filter). Unfortunately, the source of bait often is unidentified and unassessed. Therefore, we would not be able to analyze the vulnerability or abundance of bait spp. in all cases.</p>
<p>Scope of criterion Based on the title of this criterion, this should also evaluate indirects to other species via food web effects (e.g., the impact of the sardine fishery on brown pelicans and sea lions via lack of prey).</p> <p>This criterion could be re-named "Impacts of Bycatch" or "Other capture species"</p>	<p>The criterion is meant to address population impacts due to direct mortality. The ecosystem and food web impacts are considered in Criterion 5, as well as by requiring specific biomass and fishing mortality thresholds for forage species as recommended by the Lenfest Forage Fish Task Force. To clarify, we are proposing adopting the name “Impacts on other capture species”.</p>
<p>Post-release survival should be assumed to be higher for actively tended gear where fish are released immediately in good shape.</p>	<p>This is not necessarily true for all spp. For example some marine mammal spp. experience capture myopathy, in which the stress of the capture itself can cause serious injury or death, regardless of how well tended the gear are or how quickly they are disentangled. Also, spp. of concern often are released w/ gear embedded in a body part, which can lead to serious injury or death over a long time-period.</p>

	Where data indicate that post-release survival is high (e.g. for certain gear-taxa combinations), we do incorporate that high post-release survival in the assessment. This is based on scientific data either from the fishery in question, or similar fishery (in terms of gear and taxa captured).
Add factor to consider ghost fishing impacts	We do not need to add a distinct factor for ghost fishing impacts, as all sources of mortality (including ghost fishing) should be considered in the existing criteria. We are providing more guidance to this effect. We are also seeking expert input on incorporating likely ghost fishing impacts into the default scores provided in the unknown bycatch matrix.

Factor 2.3 - Fishing mortality

Summary of Comments	Seafood Watch Response
<p>We strongly disagree with the proposed changes to marine mammal guidance, and argue that Seafood Watch should be moving the opposite direction. For iconic species like marine mammals and turtles, there is a big difference between population impacts (i.e., Potential Biological Removal) and acceptable bycatch. For example, in the U.S., the MMPA defines the goal of marine bycatch levels not on avoiding population impacts (i.e., bycatch below PBR as the standard), but on a zero rate mortality goal, defined by NMFS regulations as 10% of PBR. This is a big difference. Just because you're not impacting the population or driving it to extinction, it does not make bycatch acceptable, and it is still a grave concern.</p>	<p>We have decided not to change the score for 50-100% PBR from "moderate" to "low." It will remain "moderate." PBR is calculated to allow for a prescribed number human-related mortalities that would not negatively impact the stock by maintaining or achieving the Optimum Sustainable Population – OSP) This is the actual goal of the statute, "it should be the goal to obtain an optimum sustainable population keeping in mind the carrying capacity of the habitat" (16 U.S.C. 1361(6)) and "species and population stocks should not be permitted to diminish beyond the point at which they cease to be a significant functioning element in the ecosystem of which they are a part, and, consistent with this major objective, they should not be permitted to diminish below their optimum sustainable population" (16 U.S.C. 1361(2) . However, if bycatch is 50-100% of PBR, we will retain the moderate rating (rather than downgrading to low) because the long-term statutory goal is reduce bycatch to ZMRG. This aligns with the MBA's conservation ethic. Furthermore, we are eliminating the qualitative categories of very low and critical, but the actual numerical values will remain the same. We have decided not to change the marine mammal guidance precisely because of aligning the long-term statutory goal of ZMRG with the MBA's conservation ethic.</p>

	In addition, we are considering how to evaluate other megafauna in a way that is consistent w/ U.S. marine mammals in the absences of a PBR calculation or data that would allow for such a calculation.
Any Other Comments on 2.3: The goal of fishing mortality being “appropriate” for species that are discarded seems problematic. Any level of discarding is not appropriate, so a fishery should only be a Low concern if it can be argued that discards have truly been minimized. Also, “bycatch” that is retained for sale should be evaluated as a target species in Criterion 1. Criterion 2 should be focused on discarded species.	<p>“Appropriate” may not be the best way to phrase it. We will consider tweaking the language of the goal of Criterion 2.3.</p> <p>For clarity, we evaluate only target spp. in Criterion #1. As you know, the criteria for evaluating bycaught spp. are identical to those for the target spp., but for simplicity and transparency, we think should be kept separately. It will allow the industry (and consumers or businesses) to more easily identify what aspects of the fishery need to be changed to improve its overall ranking. Fisheries are identified by their target spp. and it would be too confusing (for consumers, businesses, and fishermen) to list the bycatch spp. as target spp. (and vice-versa).</p>
PBR is driven by productivity, and shouldn't be used to infer a goal (pop size, structure, etc).	PBR is a combination of three variables, only one of which is productivity (specifically, 1/2 of the max. net productivity rate), and is defined as the maximum number of animals that can be removed from a stock by human-related causes while still maintaining or achieving the Optimum Sustainable Population (MMPA, 16 U.S.C. 1362). Thus, reducing bycatch to below PBR is an inherent goal of the MMPA (16 U.S.C. 1387(9)(f)(2)). Our criteria do not use PBR for any purpose (e.g., population size or structure) other than how it was intended (max bycatch removal). The SFW guidance and ratings are based on whether the bycatch of marine mammals exceeds the statutory threshold of PBR and ideally achieves the goal of ZMRG (zero mortality and serious injury).

Factor 2.4 - Modifying factor: Discards and bait use

Summary of Comments	Seafood Watch Response
<p>Bait use</p> <p>The bait assessment is a great idea, and it should be possible to quantify bait use for each fishery, rather than simply depending on a literature review.</p>	<p>We rely on the information that we can acquire. Often, the source of bait is unknown or unassessed, but the bait-to-landings ratio is available.</p> <p>To make this more consistent w/ the aquaculture</p>

<p>The goal statement should be modified as well, as it could be easily misinterpreted to mean that Seafood Watch is promoting more species as bait. Suggestion: For fisheries that use bait, the bait source fishery is at healthy levels, and bait is used efficiently.</p> <p>Consideration of baitfish should be made more explicit in the criteria/requirements. Bait fish should be assessed as retained species and should be sustainably managed in order for a fishery to receive a green rating. It does not appear that baitfish management is currently considered in the SW requirements.</p> <p>Impacts of bait should be assumed to occur unless evidence to contrary is available. Establish table of scores for type and extent of bait use, w/ link to bait supply/production</p>	<p>criteria, we are considering the following: Employ the discard rate modifier used for (discards + bait) $\geq 100\%$ of catch to affect the color rating (i.e. if this lowers the score below the yellow/red threshold, it changes the color rating for Criterion 2 from yellow to red. This will make the difference between yellow and red only for those fisheries that have $\geq 100\%$ bycatch (and are not already red due to species of special concern catch).</p> <p>We will consider modifying the language in the goal statement per the suggestion.</p> <p>Information about the identification (source) and catch of bait spp. is very limited. Assessing bait as a retained spp., therefore, would be extremely challenging. When known, baitfish are to be assessed along with capture species in Criterion 2.</p>
<p>Discard rate modifier</p> <p>There is no need for distinction between discards and retained bycatch (the population impact is the same). Including the bycatch rate and further modifying by the discard rate (Factor 2.4) is redundant.</p> <p>Discard rates should have a much greater impact on the overall scoring of a fishery.</p>	<p>The discard rate modifier also includes bait and bycatch can include species of concern that would not necessarily be reported as landings or a ratio of catch, but rather as takes of individual animals. Because the data are reported differently, we must retain this distinction.</p> <p>The new calculation of the discard rate modifier (discards + bait $\geq 100\%$) will make a difference in the overall color scoring, changing yellow to red for those fisheries that have $>100\%$ bycatch (discards + bait).</p>

Criterion 3

Criterion 3 - Management Effectiveness - Structure comments

Summary of Comments	Seafood Watch Response
<p>There should be a 3.3: Habitat Management Strategy.</p>	<p>The management of impacts of the fishery(s) on habitat is addressed in Criterion 4 (Factor 4.2).</p>
<p>There should be a 3.3 Management, retrieval, and accounting for lost gear, which should include:</p> <ul style="list-style-type: none"> • Proper disposal of end-of-life gear 	<p>This has been incorporated into the draft in Factor 3.2. It will be assessed in cases where there is evidence that ghost fishing from the fishery(s) being assessed is having an environmental impact.</p>

<ul style="list-style-type: none"> • Procedure for the recovery of lost fishing gear, and requirement to recover and retain any lost gear encountered at sea. • Appropriate equipment and training for safe recovery of lost gear • Fishermen should be required to report sightings of lost gear even if it did not originate from their own vessel and they are unable to retrieve it • Fisheries should also be encouraged to play an active role in developing, piloting and implementing projects to test the effectiveness of new technologies in mitigating the impact of ghost fishing gear when possible. 	
<p>Management effectiveness should be based on process and structure, not outcome. Criteria must ensure that the system is adequate to ensure that fishery standards can continue to be met even if circumstances change.</p> <p>Recommend operationalizing this in the criteria using a 3 step scale as currently used, but as a form of Presence/Absence data aggregation (fully, partly, not implemented).</p> <p>In assigning these grades, the assessor should consider if the management system has the necessary components, not necessarily whether they have resulted in intended outcomes (e.g. low levels of bycatch).</p>	<p>We agree, and the management effectiveness criterion is designed to focus on process and structure that will ensure sustainability goals are met even in changing conditions. We consider outcomes separately in Criteria 1-2. However, we do require some demonstration that management measures in place have been effective for a “highly effective” score, as it helps to ascertain that a strategy does not simply appear comprehensive on paper, but has actually served its purpose. Our view is that if a management strategy has not led to demonstrable achievement of management goals, the strategy should be revisited (i.e. adaptive management). We believe the scoring system currently used in the management criteria reflects this goal adequately.</p>
<p>This criterion does not currently appear to include consideration of the overarching management framework, which is an important component of an effective and reliable management system. We suggest adding subfactors that take into account:</p> <ul style="list-style-type: none"> - whether there is an effective national legal system and framework for cooperation to achieve sustainable stocks and minimal ecosystem impacts; - effective dispute resolution; - observation of the legal rights of people dependent on the fishery for food or livelihood; - explicit long-term sustainability objectives within the general management framework; and - explicit sustainability objectives within the fishery-specific management system. 	<p>Effective dispute resolution is considered under Stakeholder Inclusion. We also now consider under the management criterion whether the fishery management system is in compliance with the law. Sustainability objectives and goals are considered under Management Strategy and Implementation (3.1). We do not consider it necessary to separately score fishery goals and objectives vs broader sustainability objectives outside of a fishery context. Similarly, we do not consider it necessary to separately score national framework vs. the fishery specific management system. Rather, we believe that a fishery that has established a demonstrated effective management system, even in the absence of a national framework or broader national environmental objectives that mandate it do so, deserves full credit for effective management. This will prevent</p>

	penalizing fisheries for national-level political deficits outside of the fisheries control. (Similarly, we do not believe it is valid to give any credit to a fishery because it happens to be located in a country with a national sustainability framework and objectives, if the specific fishery in question is not meeting those objectives.
<p>Regarding Factor 3.1: there are too many sub-factors, and scoring is burdensome for the analyst. We propose paring the number of sub-factors down to four from the existing seven by grouping some of them together: 1. strategy and recovery; 2. advice, track record, and enforcement; 3. research; and 4. stakeholder inclusion.</p> <p>We propose that the first three sub-factors should contribute 30% each of the factor score, with the fourth contributing 10%.</p>	We have consolidated C3.1 and C3.2 and reduced the total number of factors assessed. C3.1 (Management Strategy and Implementation) and C3.2 (Bycatch management) are more heavily weighted than C3.3-3.5.

Factor 3.1 - Harvest strategy

Summary of Comments	Seafood Watch Response
<p>Subfactor structure Some reviewers felt the current subfactor structure should be maintained; but most felt it could be simplified by removing, or combining into existing categories, the “track record”, “recovery of species of concern”, and “scientific advice” subfactors.</p>	We have adopted this proposed reorganization.
<p>Management strategy and implementation subfactor: Observer system should provide adequate scale of sampling.</p>	Observer programs are assessed under C3.3 as part of the broader scientific research and monitoring program. They may also be assessed under C3.4 if explicitly used for enforcement/compliance.
<p>Recovery of species of concern subfactor - is there monitoring by independent observers? Is this public domain? Is there a competent authority?</p> <p>Given that Factor 3.1 is specifically for the management of target species (i.e., the species being assessed), I believe scoring on Recovery of Species of Concern should be restricted to the target species. Concerns over other target/retained species should be addressed in Factor 3.2;</p>	<p>The effectiveness of management in providing for the recovery of species of concern has been incorporated into C3.1 (Management Strategy and Implementation) and C3.2 (Bycatch Management). C3.1 assesses the effectiveness of management in addressing impacts on target species as well as other major retained species. C3.2 assesses the effectiveness of management in addressing impacts on species that are not typically retained.</p> <p>The specific issue of the threshold used in the recovery subfactor was discussed in our Technical</p>

<p>The recovery subfactor has three different criteria that must be met for recovering species and requires a probability of success at or greater than 70%, which is not typical among US rebuilding plans, in contrast to other subfactors that are set at the level of US law.</p>	<p>Advisory Committee meeting and there was strong support for maintaining the 70% threshold. The criteria reflect the Aquarium’s conservation ethic, which may or may not fully align with US policy in specific issues. In this case, we believe a greater degree of precaution than 50% probability of rebuilding is necessary to be considered “highly effective”.</p>
<p>Research and monitoring subfactor - Statement should be more generic (don't just focus on stock assessment, e.g. assessment of sensitive species, habitats, and ecological issues to verify achievement of stock and environment/ecosystem goals for the fishery).</p> <p>There is no explicit place for scientific stock assessments that are conducted at intervals greater than 3 years. The description of the moderately effective level contains no discussion of stock assessments and their currency. While it appears that a stock assessment older than three years would fall under the moderately effective category, it would be recommended to add that explicitly.</p>	<p>We have revised the definition of an “up-to-date” stock assessment (see 1.1 and 3.3), which now includes stock assessments conducted within the last five years. The moderately effective language for the research and monitoring subfactor has been edited for clarity to ensure that it captures cases which do not quite meet the “highly effective” category, including when stock assessments are conducted at intervals greater than five years. The language was chosen to be general and all-encompassing for simplicity.</p>
<p>Scientific advice subfactor</p> <p>The “Management Record of Following Scientific Advice” subfactor has some confusing language that should be clarified. The highly effective and moderately effective levels are clear that they refer to the TAC setting process, but the ineffective category uses the phrase “regularly exceeding recommended TACs”. The issue is that scientifically set TACs can be exceeded by a failure to properly manage. The ineffective level likely refers to only the failure to accept scientifically based TACs, but keeping the wording consistent would add to the clarity.</p> <p>Scientific advice should include docs besides stock assessments; it should be rephrased to something like: ‘scientific advice relevant to the fishery issues is made available for management decisions in an appropriate and timely manner’</p>	<p>Clarified. Whether and how management follows scientific advice is now assessed as part of C3.1 (Management Strategy and Implementation). The language has been revised in the subfactor to be more general in reference to setting policies based on scientific advice, and no longer specifically refers to just the TAC setting process.</p> <p>The effectiveness of the management system in keeping mortality at or below the TAC is considered in C3.4 (Enforcement).</p>
<p>Track record subfactor- should be deleted</p>	<p>Deleted.</p>
<p>Enforcement subfactor</p>	<p>This suggestion has been incorporated in the</p>

Performance scale should refer to 'capacity to control, ensure, and report compliance' as well as some key tools like VMS. All should be appropriate to scale of fishery.	language of the enforcement factor.
Stakeholder involvement subfactor Existing gradient of performance thresholds is poorly worded w/r/t this. "included in decision-making and decisions not made transparently" should be included in highest level of performance. Speaking w stakeholders, having biased profile of stakeholders engaged and ignoring matters of concern are all things that could go wrong in this section.	The language of the stakeholder inclusion subfactor has been revised, to specifically address issues of not just whether, but how effectively, stakeholders are engaged.
In Appendix 4, the emphasis in the evaluation seems to be on output control measures (i.e. TAC based) while input control measures (e.g., spatial and temporal closures, gear restriction and effort limits) are relegated to the management of data-poor fisheries. I am concerned whether this bias is appropriate.	This issue was discussed with our Technical Advisory Committee, and it was determined that the current focus on output control measures is appropriate as the evidence suggests that these measures have a higher likelihood of ensuring management effectiveness.
Re: IUU fishing, 25% is a very high quantity. Consider a threshold of (say) 10% or less. The other issue of course is that IUU fishing is almost always poorly quantified, often only inferred, and it may be that proxies are needed for this rather than rely on data on catch. A specialist in IUU fishing should be consulted about covert tools to estimate IUU.	Any threshold here is arbitrary, and 25% was selected to try and balance precaution with not being too penalizing. It's worth noting though that fisheries where there's evidence that IUU is occurring but there's not a reasonable estimate of the scale of the problem or it's known to be less than 25% usually score poorly on Enforcement and so score poorly on C3.

Factor 3.2 - Bycatch Management Strategy

Summary of Comments	Seafood Watch Response
Incorporate ghost fishing mitigation/management strategy	This has been incorporated into the draft in Factor 3.2. It will be assessed where there is evidence that ghost fishing from the fishery(s) being assessed is having an environmental impact.
Change weighting of Factors 3.1 and 3.2 based on the scale of bycatch in the fishery rather than the geometric mean of the two scores. A low score in Factor 3.2 could be the result of bycatch being a lower priority issue in a relatively low bycatch (but	By changing the structure, the score is no longer based on an average of 3.1 and 3.2, but a fishery needs to perform well in both to score highly in management. Factor 3.2 is written such that a fishery with relatively low bycatch would not score

not bycatch-free) fishery.	poorly in 3.2, management just needs to be appropriate given the potential bycatch concerns.
<p>Species that are managed, assigned TACs, and allowed to be harvested as bycatch/secondary catch species, but with minimal stock assessment information, should score far better than species that are listed as threatened or endangered in the abundance category.</p> <p>The bycatch criteria should be further refined to capture the qualitative differences between different kinds of bycatch. There should be some greater distinction between species where any fishing mortality could be detrimental to the population, and species that are harvested legally and where some bycatch occurs as part of that species active management.</p>	Please see comments and responses under Criterion 2 – bycatch for more details on edits to the bycatch criterion. The current proposal to use the unknown bycatch matrix for species lacking stock assessments is likely to lead to higher scores for fisheries that do not have bycatch species of concern (threatened, endangered, etc.) relative to those that do.
Bycatch management should be a subfactor of 3.1	C3.2 (Bycatch management) is weighted the same as C3.1 (Management Strategy and Implementation), and these two factors (as well as three additional, but lesser weighted subfactors, were consolidated into one management criterion (a change from the current criteria structure with two major factors, one for retained species and one for bycatch.
<p>Scoring of 3.2 when bycatch is low</p> <p>If there is no need for management based on adequate scientific information, the lack of management isn't a concern.</p> <p>Selective fisheries should still be scored under Factor 3.2 but a default of "low concern" may be more appropriate than "very low concern", because selective fisheries could still impact bycatch populations, depending on the status of the species caught.</p>	<p>Agree. For example, if there are no main species or if there are no main species that are generally discarded, C3.2 is scored "highly effective." If there are main species (discarded) but there are no concerns with the impacts of the fishery on them (because, say, the impacts of the fishery on them are well managed), then C3.2 will score "highly effective."</p> <p>See proposal for 'main species.'</p>
Scientific advice with respect to bycatch does not need to be a separate subfactor.	Agree. Restructured so that C3.3 looks at the overall research and monitoring program, for both retained and discarded species.
For both Factor 3.1 and Factor 3.2, we recommend adding a fourth scoring category of "partially	We think the proposed restructuring plus clarification of what is highly effective, moderately

effective.”	effective and ineffective should allow for improved application of the current categories in assessments. This should help minimize the tendency to assign a score of moderately effective to one or more of the factors and thus balance the overall C3 management score better.
Proposed a revised weighting of the subfactors with management and implementation and enforcement subfactors each contributing 40% of the factor score, and research and monitoring contributing the remaining 20%.	The proposed weighting revision does not fit within our scoring scheme, but the language of the criterion allows for fisheries that do not have data-intensive research and monitoring but successfully limit bycatch with other strategies to still score well.

Criterion 4

Summary of Comments	Seafood Watch Response
Incorporate bait usage into this Criterion (Factor 4.3) instead of under Criterion 2	We have chosen to keep the vulnerability, abundance, and mortality of bait species in Criterion 2 and discuss all ecosystem effects separately under ecosystem-based management (Criterion 5 in current proposal). The ecosystem criterion focuses broadly on ecosystem-based management, while Criterion 2 focuses on the population impact due to direct mortality of particular species.
Given that EBFM is a more national strategy (rather than fishery-specific), it might be worth exploring if some of the policy indicators included in the Ocean Health Index could be applied to this section.	The Ocean Health Index, while a significant global scale effort, is highly generalized in its goals and results. Its indicators do not provide the necessary level of detail that Seafood Watch requires for our assessments.
Food web effects and habitat impacts should be assessed separately.	Seafood Watch will pilot test the proposed Criteria with both habitat and ecosystem impacts (which include the effects of the fishery on food webs) combined in one criterion and separated into two separate criteria.
Ecosystem-based management and trophic impacts should be integrated into Criterion 1 and 2 using the precautionary principle. [Some reviewers suggested this instead of having it incorporated into a separate ecosystem criterion; others suggested it in addition].	Seafood Watch is incorporating the recommendations of the Lenfest Forage Fish Task Force into Criteria 1 and 2. These recommendations focus on ecosystem based management of forage species. As data becomes available to assess the ecosystem level impacts (including trophic impacts) of the removal (targeted and as bycatch) of other species of exceptional importance, Seafood Watch will assess those impacts in a similar manner.
Edit habitat criterion to include a focus on impacts	In consultation with experts, Seafood Watch is

<p>of lost or abandoned gear. Ghost gear may damage benthic habitats via abrasion, reef entanglement and destruction, ‘plucking’ of organisms, meshes closing around them, and the translocation of sea-bed features.</p>	<p>developing guidelines for the consideration of lost or abandoned gear (i.e. ghost gear) impacts within the proposed criteria framework and this guidance will be provided to analysts.</p>
<p>The mitigation of gear impacts subfactor is burdensome to score for most fisheries, as information regarding the percentage of habitat protected is often not readily available.</p>	<p>Seafood Watch considers the mitigation of gear impacts as an important consideration. There are alternative criteria that can be used when percent of habitat protected is unknown, or is not high enough to merit a high mitigation score. We consider the onus to be on fisheries management to provide the information on habitat protection that demonstrates that mitigation points are merited, and err on the side of caution when that information is not readily available.</p>
<p>Criterion 4 should be given lower weight, because many fisheries don't affect the ocean bottom and ecosystem-based fisheries management is not yet fully implemented in most fisheries.</p>	<p>Seafood Watch weights all main criteria equally. However, our decision rules ensure that just because a fishery performs well in Criterion 4 because by its nature the gear doesn’t contact the bottom, does not mean it will score well overall – it will do so only if merited by green or yellow scores on the other main criteria.</p> <p>By including ecosystem based management considerations (either in Criteria 4 or as a separate Criterion) SFW is communicating the importance of managing fisheries in an ecosystem context. A fishery that does not protect ecosystem function and does not account for a species ecological role will not score as well as a fishery that includes these considerations, and this is a reflection on the sustainability of those fisheries.</p>
<p>Data needs to be used to determine if mid-water trawls and purse seines are contacting the seafloor</p>	<p>Our guidance on gear impacts provides direction to analysts on how to score Criteria 4.1 for gears such as midwater trawls and purse seines which may contact the benthos.</p>
<p>Any bottom trawl fishery that has not “frozen the footprint” is a major concern. For a trawl fishery to be a moderate concern, there needs to be a tightly frozen footprint and vast majority of sensitive habitat protected, and habitat representation. No trawl fishery should ever be a “low concern” for habitat regardless of management.</p>	<p>The proposed criteria changes in the second draft reflect this guidance. No trawl fishery can score as “low concern” and for a trawl fishery to score “moderate concern” the expansion of the fishery into untrawled habitat is prohibited and vulnerable habitats are strongly protected.</p>
<p>The type, vulnerability, and accessibility of habitat</p>	<p>These factors (type, vulnerability and accessibility</p>

must be considered, as well as potential impacts of the fishery on Vulnerable Marine Ecosystems.	of habitat) are considered. As such, consideration of impacts on VMEs is considered.
Criterion 4 should consider pelagic habitat such as important spawning areas in addition to benthic habitat as ocean habitat.	In Criteria 4, Seafood Watch considers impacts of the fishery on physical habitat structure, based on the extent and nature of contact the fishery's gear/s with the benthos. If a fishery is prosecuted within spawning grounds for the target or for other species (which may or may not be bycatch in the fishery under consideration) and if this is deemed inappropriate, this would be evaluated under Criteria 3, harvest management strategy, and potentially reflected in the scoring of Criteria 1 or 2 if the stock status was affected accordingly.
Reviewers supported the proposed combining of 4.1 and 4.2 (in this proposal, 4.1a and 4.1b) into a single factor.	This has been done.
Reviewers were supportive of the use of the Lenfest Forage Fish Task Force guidelines in Criterion 4.3, and also proposed using them in Criterion 1 and 2.	In this iteration, Seafood Watch is incorporating the recommendations of the Lenfest Forage Fish Task force. Those recommendations related to appropriate biological reference points and fishing mortality levels for forage fish species will now be considered under Criteria 1 and 2. The Lenfest recommendations regarding spatial management will now be considered under Criteria 4 or 5.
Seafood Watch should also address the ecological role of top predators in this criterion, but unfortunately there isn't much quantitative information about this yet, therefore the suggestion is that Seafood Watch state a commitment to moving toward an evaluation of top predators under this factor, and set up a system that will allow this to affect scores now where data do exist (but there would be no penalty when the data don't exist).	This is essentially the approach we have decided on. Seafood Watch recognizes that top predators play critical roles in ecosystems. While limited data is currently available to support evaluating the impacts of fisheries on top predators, SFW is inserting a placeholder in Criteria 1-2 to allow for this assessment where and when information is available.
The framework of using "or" can be subject to differential interpretation; rules of interpretation need to be clarified for assessors.	We will ensure that clear guidance is given to analysts so that it will be obvious that "or" for a given scoring choice means that only one option needs to be met to meet the requirements for that choice.
The same framework suggested by the Lenfest Forage Fish Task Force (i.e. biomass thresholds) should be applied to management of fisheries for all species and could be both target and bycatch.	Based on the recommendations of the Fisheries Technical Advisory Committee, Seafood Watch is limiting our incorporation of the Lenfest Forage Fish Task force recommendations to forage species. When data availability is such that

<p>However, the Lenfest benchmarks themselves are not sufficiently precautionary as they do not account for several types of uncertainty and might be best used in a precautionary way to define the lowest limits to acceptable performance, e.g. Lenfest low biomass limits (30% Bunfished)=Red/Yellow threshold; high biomass (80% Bunfished) = Yellow/Green threshold.</p>	<p>specific precautionary recommendations are possible for other species of exceptional importance, SFW will incorporate those. Otherwise, SFW maintains that the proposed changes to the Criteria provide for sufficient precaution for all species.</p>
<p>Seafood Watch should look at fisheries that are implementing EBFM approaches and see what they evaluate to get a better idea of how to structure this factor, e.g. the U.S. and Western Australia.`</p>	<p>We commissioned a team of scientists to compile this information as well as other advice on ecosystem-based management measures, and this will be provided as guidance for analysts.</p>