

Monterey Bay Aquarium Seafood Watch®

Fisheries and Aquaculture Standards Revision Terms of Reference

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Introduction

The mission of the Monterey Bay Aquarium is to inspire conservation of the oceans. Seafood Watch® is a program of the Aquarium and works to engage and empower consumers and businesses to purchase seafood that is fished or farmed in ways that minimize their impact on the environment. The program was launched in 1999 and continues to research and evaluate the sustainability of fisheries and aquaculture operations worldwide. We share the resulting seafood recommendations with the public, businesses and other interested parties in several forms including pocket guides, smartphone apps and online at seafoodwatch.org.

The purpose of this document is to provide the Terms of Reference for the review and revision of the Seafood Watch Standard for Fisheries and Standard for Aquaculture, and for the development of the Seafood Watch Standard for Salmonid Fisheries. The current standards can be found on the Seafood

Watch website [here](#). This document will be reviewed and updated as necessary at the outset of each standards revision cycle.

Seafood Watch Standards

The Seafood Watch standards consist of:

1. Defined guiding principles or objectives
2. Science-based performance criteria that are regularly revised based on the input from fishery and aquaculture experts
3. A robust and objective scoring methodology that that results in a transparent assessment of a fishery or aquaculture operation against the respective criteria

Seafood Watch revisits the performance criteria every four years to reflect the most current thinking in sustainable fisheries and aquaculture. Standards revision may also be triggered by other factors (see [Process Procedures](#)).

Scope

Seafood Watch assesses the ecological impacts on marine and freshwater ecosystems of fisheries and aquaculture operations up to the dock or farm gate. Seafood Watch assessments do not consider all ecological impacts (e.g. land use, air pollution), post-harvest impacts such as processing or transportation, or non-ecological impacts such as social issues, human health or animal welfare. Our main focus is seafood on the US market, but as some 90% of seafood on the US market is imported, our standards must be applicable to fisheries and aquaculture operations from anywhere in the world.

Justification of Need

The Seafood Watch standards and fishery and aquaculture assessments currently fill a critical role in the North American marketplace. The assessments identify the environmental performance of the fishery or aquaculture operation in question providing producers with areas for improvement. The resulting fishery and aquaculture ratings inform the seafood purchasing decisions of concerned consumers and businesses. Elements of the Seafood Watch standards and program that are unique to existing eco-certification schemes and ratings programs¹ include the following:

¹ Seafood eco-certification programs for wild fisheries include Friends of the Sea, Marine Stewardship Council, and various standards built upon the Global trust program (Alaska Seafood Marketing Institute, Iceland, G.U.L.F.). For aquaculture, these include Aquaculture Stewardship Council, Canada Organic, Certified Quality Salmon, Food Alliance, Friend of the Sea, Global Aquaculture Alliance, Global GAP, Naturland, Thai Code of Conduct and Thai GAP

1. We assess the majority of the seafood on the North American market. Initial estimates are that our current recommendations cover some 80-85% of the total seafood on the US market, by volume.
2. We use a three tiered system approach with the intention of recognizing better and best performers
3. We publish all assessment results regardless of score and rating outcome at www.seafoodwatch.org
4. Our fisheries and aquaculture Standards press for improvement beyond current best practice.
5. Our assessments are non-voluntary.
6. Our performance criteria are structured to assess the impacts from farms and fisheries not only in isolation, but also in the context of the cumulative effects of multiple fisheries and aquaculture farms in the region.

Objectives

Seafood Watch defines sustainable seafood as seafood from sources, whether fished or farmed, that can maintain or increase production without jeopardizing the structure and function of affected ecosystems. In keeping with this definition, Seafood Watch refers to the following objectives to illustrate the qualities that fisheries and aquaculture operations must possess to be considered sustainable. These objectives inform the performance criteria and scoring methodology used to assess fisheries and aquaculture operations.

Fisheries Objectives

Sustainable wild capture fisheries:

1. Follow the principles of ecosystem-based fisheries management;

The fishery is managed to ensure the integrity of the entire ecosystem, rather than solely focusing on maintenance of single species stock productivity. To the extent allowed by the current state of the science, ecological interactions affected by the fishery are understood and protected, and the structure and function of the ecosystem is maintained.

2. Ensure all affected stocks² are healthy and abundant;

Abundance, size, sex, age and genetic structure of the main species affected by the fishery (not limited to target species) is maintained at levels that do not impair recruitment or long-term productivity of the stocks or fulfillment of their role in the ecosystem and food web.

Abundance of the main species affected by the fishery should be at, above, or fluctuating around levels that allow for the long-term production of maximum sustainable yield.

3. Fish all affected stocks at sustainable levels;

² “Affected” stocks include all stocks affected by the fishery, no matter whether target or bycatch, or whether they are ultimately retained or discarded.

Fishing mortality for the main species affected by the fishery should be appropriate given current abundance and inherent resilience to fishing while accounting for scientific uncertainty, management uncertainty, and non-fishery impacts such as habitat degradation.

The cumulative fishing mortality experienced by affected species must be at or below the level that produces maximum sustainable yield for single-species fisheries on typical species that are at target levels.

Fishing mortality may need to be lower than the level that produces maximum sustainable yield in certain cases such as multispecies fisheries, highly vulnerable species, or fisheries with high uncertainty.

For species that are depleted below target levels, fishing mortality must be at or below a level that allows the species to recover to its target abundance.

4. Minimize bycatch;

Seafood Watch defines bycatch as all fisheries-related mortality or injury other than the retained catch. Examples include discards, endangered or threatened species catch, pre-catch mortality and ghost fishing. All discards, including those released alive, are considered bycatch unless there is valid scientific evidence of high post-release survival and there is no documented evidence of negative impacts at the population level.

The fishery optimizes the utilization of marine resources by minimizing post-harvest loss and by efficiently using marine resources as bait.

5. Have no more than a negligible impact on any threatened, endangered or protected species;

The fishery avoids catch of any threatened, endangered or protected (ETP) species. If any ETP species are inadvertently caught, the fishery ensures and can demonstrate that it has no more than a negligible impact on these populations.

6. The fishery is managed to sustain the long-term productivity of all affected species;

Management should be appropriate for the inherent resilience of affected marine life and should incorporate data sufficient to assess the affected species and manage fishing mortality to ensure little risk of depletion. Measures should be implemented and enforced to ensure that fishery mortality does not threaten the long-term productivity or ecological role of any species in the future.

The management strategy has a high chance of preventing declines in stock productivity by taking into account the level of uncertainty, other impacts on the stock, and the potential for increased pressure in the future.

The management strategy effectively prevents negative population impacts on bycatch species, particularly species of concern.

7. Avoid negative impacts on the structure, function or associated biota of marine habitats where fishing occurs;

The fishery does not adversely affect the physical structure of the seafloor or associated biological communities.

If high-impact gears (e.g. trawls, dredges) are used, vulnerable seafloor habitats (e.g. corals, seamounts) are not fished, and potential damage to the seafloor is mitigated through substantial spatial protection, gear modifications and/or other highly effective methods.

8. Maintain the trophic role of all marine life;

All stocks are maintained at levels that allow them to fulfill their ecological role and to maintain a functioning ecosystem and food web, as informed by the best available science.

9. Do not result in harmful ecological changes such as reduction of dependent predator populations, trophic cascades, or phase shifts;

Fishing activities must not result in harmful changes such as depletion of dependent predators, trophic cascades, or phase shifts.

This may require fishing certain species (e.g. forage species) well below maximum sustainable yield and maintaining populations of these species well above the biomass that produces maximum sustainable yield.

10. Ensure that any enhancement activities and fishing activities on enhanced stocks do not negatively affect the diversity, abundance or genetic integrity of wild stocks;

Any enhancement activities are conducted at levels that do not negatively affect wild stocks by reducing diversity, abundance or genetic integrity.

Management of fisheries targeting enhanced stocks ensure that there are no negative impacts on the wild stocks, in line with the guiding principles described above, as a result of the fisheries.

Enhancement activities do not negatively affect the ecosystem through density dependent competition or any other means, as informed by the best available science.

Aquaculture Objectives

Sustainable aquaculture farms and collective industries:

1. Have robust and up-to-date information on production practices and their impacts (or lack of impacts) publically available;

Poor data quality or availability limits the ability to understand and assess the environmental impacts of aquaculture production and subsequently for seafood purchasers to make informed choices. Robust and up-to-date information on production practices and their impacts should be publically available (i.e. accessible to consumers and the buyers of the products).

2. Prevent effluent discharges from exceeding, or contributing to exceeding, the carrying capacity of receiving waters at the local or regional level;

Aquaculture farms minimize or avoid the production and discharge of wastes at the farm level in combination with an effective management or regulatory system to control the location, scale and cumulative impacts of the industry's waste discharges.

3. Are located at sites, scales and intensities that maintain the functionality of ecologically valuable habitats;

The siting of aquaculture farms does not result in the loss of critical ecosystem services at the local, regional, or ecosystem level.

4. Limit the type, frequency of use, total use, or discharge of chemicals to levels representing a low risk of impact to non-target organisms;

Aquaculture farms avoid the discharge of chemicals toxic to aquatic life or limit the type, frequency or total volume of use to ensure a low risk of impact to non-target organisms.

5. Source sustainable feed ingredients and converting them efficiently with net edible nutrition gains;

Producing feeds and their constituent ingredients has complex global ecological impacts, and the efficiency of conversion can result in net food gains or dramatic net losses of nutrients. Aquaculture operations source only sustainable feed ingredients or those of low value for human consumption (e.g. by-products of other food production), and convert them efficiently and responsibly.

6. Prevent population-level impacts to wild species or other ecosystem-level impacts from farm escapes;

Aquaculture farms, by limiting escapes or the nature of escapees, prevent competition, reductions in genetic fitness, predation, habitat damage, spawning disruption, and other impacts on wild fish and ecosystems that may result from the escape of native, non-native and/or genetically distinct farmed species.

7. Preventing population-level impacts to wild species through the amplification and retransmission, or increased virulence of pathogens or parasites;

Aquaculture farms pose no substantial risk of deleterious effects to wild populations through the amplification and retransmission of pathogens or parasites, or the increased virulence of naturally occurring pathogens.

8. Use eggs, larvae, or juvenile fish produced from farm-raised broodstocks thereby avoiding the need for wild capture;

Aquaculture farms use eggs, larvae, or juvenile fish produced from farm-raised broodstocks thereby avoiding the need for wild capture, or where farm-raised broodstocks are not yet available, ensure that the harvest of wild broodstock does not have population-level impacts on affected species. Wild-caught juveniles may be used from passive inflow, or natural settlement.

9. Prevent population-level impacts to predators or other species of wildlife attracted to farm sites;

Aquaculture operations use non-lethal exclusion devices or deterrents, prevent accidental mortality of wildlife, and use lethal control only as a last resort, thereby ensuring any mortalities do not have population-level impacts on affected species.

10. Avoid the potential for the accidental introduction of non-native species or pathogens during the shipment of live animals;

Aquaculture farms avoid the international or trans-waterbody movements of live animals, or ensure that either the source or destination of movements is biosecure in order to avoid the introduction of unintended pathogens, parasites and invasive species to the natural environment.

Assessment of Risks

The table below provides an assessment of risks in implementing the Seafood Watch standard, and measures we have taken to mitigate them. Note that these are not additional risks we have identified relative to the standards review process beginning in 2014; rather they are the main risks we have identified and mitigated for since the inception of the program in 1999.

Risk	Mitigation
Robustness of recommendations	<p>Continually improve the scientific rigor of our reports, including:</p> <ol style="list-style-type: none"> 1. Process <ul style="list-style-type: none"> • Minimum educational/professional qualifications for authors of reports • Full training modules for new authors • Updated training module for existing authors when necessary • Internal review process to ensure consistency in interpretation of the standards • External peer-review of all reports to ensure the most up to date science and management measures have been used and interpreted correctly • Final review with colleagues that use Seafood Watch recommendations 2. Timeliness <ul style="list-style-type: none"> • Review relevant stock assessment summaries when they are released (e.g. quarterly in the case of US federal fisheries) • Review and update reports as necessary, but at least every three years • Ensure partners receive our new recommendations in a timely manner 3. Standards and guidance <ul style="list-style-type: none"> • Periodically review and update our standards through a multi-stakeholder input process • For the revisions cycle from 2014 onwards, organizing the process so that it follows ISEAL’s Code of Good Practice for Standard Setting. This will provide greater transparency and assurance around the robust nature of our process for rating wild and farmed seafood.
Maintain and increase North American market coverage	<ul style="list-style-type: none"> • Conduct an annual prioritization exercise to identify gaps in the market coverage of our recommendations • Establish and support a robust External Assessment Program. This program must follow the mitigation measures above (under ‘Robustness of Recommendations’), except ‘internal review’ step is replaced with an external reviewer. To be an external reviewer in this program, a person must have

	<p>proven they fully understand the Seafood Watch review process and criteria. This is operationalized as follows:</p> <ul style="list-style-type: none"> • Have written at least two Seafood Reports as part of the internal program above • Undergone training including at least one webinar followed by review of at least 5 Seafood Watch reports which are then shadow reviewed by internal staff.
Confusion over claims	<ul style="list-style-type: none"> • Publicly state that we are not an eco-certification, as we do not audit or have any control over individual companies' chain of custody. • Encourage people at point of sale to seek out traceability mechanisms • Follow ISEAL Making Claims about Sustainability Standards Systems Good Practice Guide (when completed)
Duplication of effort/redundancy	<ul style="list-style-type: none"> • Continue to identify equivalent eco-certs we can defer to based on benchmarking analysis of their standards. For information on our benchmarking work to date, please visit www.seafoodwatch.org/seafood-recommendations/eco-certification.

Contact Details

Project management of the Seafood Watch Standards Revision is being conducted by Santi Roberts, SFWstandardreview@mbayaq.org. The Seafood Watch Standards revision website can be found at: www.seafoodwatch.org/seafood-recommendations/standards-revision

Revision History

This document was first published in October 2014. It was updated in April 2016 to reflect the fact that the Standard for Fisheries and Standard for Aquaculture are now published and that the Standard for Salmonid Fisheries and criteria for greenhouse gas emissions are in development. The guiding principles regarding greenhouse gas emissions have been removed to be consistent with the revised Standard for Wild Fisheries and Standard for Aquaculture. The Introduction was updated in February 2017 to state that it will be reviewed and updated as necessary at the outset of each standards revision cycle, and again in May 2017 to remove reference to our developing criteria to assess the impacts of greenhouse gas emissions, which we are no longer doing.